# CORPORATE GOVERNANCE AND VALUE PRESERVATION: THE EFFECT OF THE FINCEN LEAK ON BANKS

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## I

## INTRODUCTION

Money laundering and other financial crimes have emerged in recent years as a significant threat to capital markets and to the fiscs of many states. For example, Global Financial Integrity[1] estimates that trade-based money laundering and tax evasion accounted for about a $8.7 trillion loss for developing countries between 2008 and 2017. Recognizing these risks, the United States's Bank Secrecy Act of 1970 requires financial institutions to collaborate with the U.S. government to help identify and prevent money laundering and tax evasion activities.[2] In particular, a Suspicious Activity Report (SAR) must be filed when an employee or individual has reason to suspect that a customer may be involved in suspicious transactions.[3] Even though banks and financial institutions are subject to penalties by state and federal authorities if they fail to report suspicious activities, they are less incentivized to investigate suspicious activities of valued clients or large transactions if the commercial value to the bank may offset penalty costs. Moreover, the type and magnitude of SARs filed varies significantly across countries, and the number of SAR filings has almost doubled in the United States over the last decade.[4] For example, in 2019 alone, more than 2.7 million SARs were filed in the United States, with approximately eighty-five percent filed by



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1. GLOBAL FINANCIAL INTEGRITY (2020), https://gfintegrity.org/report/trade-related-illicit-financial-flows-in-135-developing-countries-2008-2017/ [https://perma.cc/7CJ8-BHNA].

2. Bank Secrecy Act of 1970, Pub. L. No. 91-508, 84 Stat. 1114–36 (codified as amended in scattered sections of 12 U.S.C., 15 U.S.C., and 31 U.S.C.).

3. *See*, *e.g.*, 31 U.S.C. § 5318(g)(1) (noting that "[t]he Secretary may require any financial institution, and any director, officer, employee, or agent of any financial institution, to report any suspicious transaction relevant to a possible violation of law or regulation.").

4. *See* Notice and Request for Comments on Proposed Renewal of Information Collections Relating to Reports of Suspicious Transactions, 85 Fed. Reg. 31,598 (May 26, 2020), https://www.govinfo.gov/content/pkg/FR-2020-05-26/pdf/2020-11247.pdf [https://perma.cc/LWJ5-MCV8]; *see also* the authors' own analysis in Table 2, Panel A of the Appendix.

financial institutions.[5] This phenomenon may reflect a regime in which "the rules around what is deemed 'suspicious' can be vague, which leads some banks to send too many reports and others to send too few."[6]

In September 2020, Buzzfeed News and the International Consortium of Investigative Journalists (ICIJ) jointly published a cache of records known colloquially as the "FinCEN Files."[7] The leak was the latest in a line of recent exposés targeting the aggressive tax planning and avoidance strategies—and, in some cases, outright tax evasion—employed by corporations, global elites, and the financial institutions that serve them.[8] But the FinCEN leak was unique: rather than exposing financial corruption and international tax crime, it contained thousands of SARs covering nearly two decades of suspicious financial transactions that were reported by banks around the world.

This might have been portrayed as good news, evidence that the public-private cooperation between financial institutions and the US government was working as intended in the fight against money laundering and tax evasion, but the implicit conclusion from the leak was that the system was broken.[9] Although the banks named in the leak complied with the requirement to report suspicious activity, they did not cease their business relationships with suspect clients, moving over $2 trillion in possibly illicit transactions over nearly two decades. In their reporting of the aftermath of the leak, the BBC concluded that "[o]nce a bank has filed a report to the authorities, it is very difficult to prosecute it or its executives, even if it carries on helping with the suspicious activities."[10] And in half of the leaked reports, the banks lacked identifying information about the entities that benefitted from the transactions, in clear violation of "know your client" regulations meant to discourage money laundering in the first place.

The leak sparked a debate about the banks' risk-taking incentives and the use of the SAR system to limit the banks' legal risk while continuing to facilitate potentially illegal activities of customers. Short of hard evidence that would require immediate termination of such illicit business, "dirty money" was allowed

5. *Id.* at 31, 599–600.

6. Pete Schroeder, *U.S. Policymakers Seize on FinCEN Leaks to Press for Stepped up Money-laundering Fight*, REUTERS (Sept. 21, 2020), https://www.reuters.com/article/uk-global-banking-fincen-congress-idUKKCN26D001 [https://perma.cc/EF3S-4MYL].

7. *See id.*; Will Fitzgibbon, *VIRTEU International Final Conference, Panel 4*, CORP. CRIME OBSERVATORY, at 36:44 (June 23, 2022), www.corporatecrime.co.uk/virteu-final-conference-day1-panel4 [https://perma.cc/KSU4-NXG5] (illustrating the challenges faced by journalist involved in investigative reporting aimed at unveiling tax abuses).

8. *See* Shu-Yi Oei & Diane Ring, *Leak-Driven Law*, 65 U.C.L.A. L. REV. 532, 532 (2018) (discussing how, over the past decade, a number of well-publicized data leaks have revealed the secret offshore holdings of high-net-worth individuals and multinational taxpayers).

9. *See* Stephen Holden, *The FinCEN Files: Leakers and Whistleblowers Combating Economic Crime*, CORP. SOC. RESP. AND BUS. ETHICS BLOG (Sept. 30, 2020), https://corporatesocialresponsibilityblog.com/2020/09/30/fincen [https://perma.cc/5P7X-XKRY] (discussing the emerging institutional incapacity to counter illicit conduct in the financial sector).

10. *FinCEN Files: All you need to know about the documents leak*, BBC (Sept. 21, 2020), https://www.bbc.com/news/uk-54226107 [https://perma.cc/5USD-2AMZ].

to freely flow through the global financial world even when the banks had their suspicions. News reporting around the leak reduced the share value of the numerous banks connected with the leak.

Incidents of financial sector misconduct, as well as the inability of regulators to discourage misconduct, can negatively affect confidence in financial institutions. Repercussions in capital markets may in turn serve as an independent constraint on banks' willingness to adopt lax reporting approaches. Therefore, it is important to track the effectiveness of the reporting obligations under the anti-money laundering and counterterrorist financing (AML-CTF) framework.

Regulators have argued that the filing of SARs is crucial to their investigation of potential misconduct and enforcement actions.[11] However, some scholars have questioned this view, arguing that a high volume of SARs is more consistent with a regulatory regime built on a systemic cost-benefit analysis.[12] According to this view, banks may over-file SARs because of their desire to avoid penalties and because they continue to engage with customers that have a high potential for financial crime.[13] Only recently have scholars started to investigate the impact of financial penalties and potential reputational risks for banks likely to develop lax reporting standards. This study considers this the financial penalties hypothesis.[14]

Whereas articles in the literature have focused on the effect of the disclosure of tax avoidance activities on firm value, little is known about the capital market responses to banks' SAR disclosures and their quality. If the current legal framework of cooperation between FinCEN and the banking industry is insufficient to deter money laundering, as the FinCEN leak suggests, perhaps a market-based response to illicit bank conduct would discourage banks from actions that facilitate financial crimes of their clients. Two opposing views predict the relation between the disclosure of illicit activities and firm value. According to the first view, herein referred to as the information view, the effects of tax or illicit activities disclosure are positively associated with firm value. Under the information view, the disclosure of the activities associated with the announcement provides information to the markets about the extent of these

11. Schroeder, *supra* note 6.

12. Janet Gao et al., Dirty Money: How Banks Influence Financial Crime 2–3 (Oct. 30, 2020) https://ssrn.com/abstract=3722342 [https://perma.cc/L4DH-3H6M].

13. *See generally* Elod Takats, *A Theory of "Crying Wolf": The Economics of Money Laundering Enforcement*, 27(1) J.L. & ECON. ORG. 32 (2011). *See also* Branislav Hock, *Policing Fiscal Corruption: Tax Crime and Legally Corrupt Institutions in the United Kingdom*, 85 LAW & CONTEMP. PROBS., no. 4, 2022, at 181–182 (exploring the collective action problems in relying on third party enforcers).

14. *See generally* Hannes Koster & Matthias Pelster, *Financial Penalties and Bank Performance*, 79 J. BANKING & FIN. 57 (2017); Birgit Huesecken, Michael Overesch & Alexander Tassius, Effects of Disclosing Tax Avoidance: Capital Market Reaction to LuxLeaks (Feb. 28, 2018) https://ssrn.com/abstract=2848757 [https://perma.cc/ZW6R-WNVT]; Wayne L. Nesbitt, Edmund Outslay & Anh Persson, *The Relation Between Tax Risk and Firm Value: Evidence from the Luxembourg Tax Leaks*, J. ACCT. & ECON. (forthcoming 2022), http://ssrn.com/abstract=2901143 [https://perma.cc/G9K6-WX38]; James O'Donovan, Hannes F. Wagner & Stefan Zeume, *The Value of Offshore Secrets: Evidence from the Panama Papers*, 32(11) REV. FIN. STUD. 4117 (2019).

activities and removes uncertainty that was possibly hurting financial institutions. This view argues that the market reacts positively to public news about a firm's tax information or planning structure. For example, Huesecken, Overesch and Tassius find that the market reacts positively to news about the exposure of multinational firms through the leak of Luxembourg advanced tax rulings.[15] The rationale is that capital markets are more likely to respond positively to the news about a firm's involvement in tax planning activities, particularly for firms with high effective tax rates (ETRs). Alternatively, the second view argues that the announcement of tax avoidance structures has a negative effect on firm value. Significant deviations from the firm's level of tax avoidance are reported to negatively influence firm value. This will herein be referred to as the penalty view. Consistent with this view, O'Donovan, Wagner, and Zeume find that firms connected to the use of secret offshore vehicles are more negatively affected, as evidenced by the Panama Papers leak.[16]

To evaluate these two views and their implications for constraining financial and tax corruption in financial institutions, this work investigates the effects of the disclosure of SARs on the capital market valuations of banks. To the extent capital markets respond, it may suggest that these market forces could play a role in compensating for shortcomings of the current legal framework in halting financial and tax corruption. This article presents an event study of the short-run impact of the SARs made public as part of the FinCEN leak on banks in the United States. The findings show economically significant negative capital market reaction in the days after the database was made public. These findings are consistent with the penalty hypothesis. The event study also indicates, using wider windows (from five days before until five days after the leak and up to thirty days before until thirty days after the leak), that the negative effects have disappeared from the market.

To further examine the effect of the FinCEN leaks, this work focuses on whether the fines imposed on a bank can have a negative impact on the market valuations. To identify these effects, this analysis documents economically significant negative Cumulative Abnormal Returns (CAR) after the event and in the seven-day window surrounding the event. The analysis documents a significant decrease of firm value in excess of the amount of the fines imposed. However, the event study provides evidence that the negative reaction to the fine announcement is already eroded in the eleven-day event window [-5, 5]. These findings highlight that there is little information from the leaks that can alter investors' confidence in the long-term value effects of the banks involved.

Next, this work studies how governance characteristics related to the board of directors, executive compensation, ownership characteristics, and third-party rankings of firm governance affect announcements of fines. Given the extensive evidence on the market impact of information leakages on the reputational losses

15. *See* Huesecken, Overesch & Tassius, *supra* note 14, at 29 (noting that the overall results "show a particularly positive response to the disclosure of a certain tax avoidance strategy").

16. O'Donovan, Wagner & Zeume, *supra* note 14, at 4120.

experienced by disciplined firms, it seems reasonable to assume that these fine announcements are anticipated by the market. This analysis evidences that banks and financial institutions with better governance are more likely to have fewer regulatory fines and suffer a smaller financial market effect from the announcements of these fines. To give a concrete example, the results of the analysis indicate a positive relationship between fines and executive compensation, both total compensation and the ratio of variable compensation to total compensation. At the same time, consistent with the insider trading literature, there are fewer instances of advance leakage around fine announcements, suggesting less insider trading and less disclosure of material non-public information for such banks. This result is also dependent on the extent of insider holdings.

This paper also studies institutional holding characteristics and the relationship with fines incurred and cost of capital. Surprisingly, this relationship has not been explored in the literature until very recently.[17] In this paper's analysis of institutional ownership and the risk-taking behavior of banks, the results show that institutional investors diversify holdings away from banks with larger fines. These findings generally support the theoretical argument that the cost of capital is impacted as investors eschew more offending firms.

This article, which tackles some key issues highlighted in research carried out within the project VIRTEU,[18] contributes to several streams of the literature. These empirical insights can help identify ways to constrain financial institutions from facilitating suspicious and potentially illegal transactions made by their customers. First, these results help to explain the effect of shareholder holdings and governance on the stock market reactions to announcements of financial penalties. Other studies have suggested that weak governance is associated with more enforcement actions, but most of these studies have been limited in scope.[19] Second, this work contributes to an increasing literature that measures the extent to which financial penalties affect corporate decisions and investments. Third, the focus on the stock price responses around announcements of regulatory fines allows us to gain a better understanding of the impact of better governance in terms of lower penalties and more muted market reactions to the penalties imposed. Fourth, this work documents that large institutional investors diversify

17. Shivam Agarwal & Cal B. Muckley, *Law Enforcement Spillover Effects in the Financial Sector*, 28 EUR. FIN. MGMT. 6 (forthcoming 2022), https://onlinelibrary.wiley.com/doi/epdf/10.1111/eufm.12356 [https://perma.cc/D99C-V78F].

18. VIRTEU (Vat fraud: Interdisciplinary Research on Tax crimes in the European Union) was a two-year international research project funded by the European Anti-Fraud Office (OLAF) of the European Commission (Grant Agreement no: 878619), which aimed at exploring the interconnections between tax crimes and corruption. All the documents produced, as well as all the video recordings of the events organized over the course of the project, are available online on the Corporate Crime Observatory, which serves as the long-term repository of the project outcomes: https://www.corporatecrime.co.uk/virteu [https://perma.cc/6HTQ-K4LX].

19. *See generally* Mark S. Beasley, *An Empirical Analysis of the Relation Between the Board of Director Composition and Financial Fraud*, 71(4) ACCT. REV. 443 (1996); Anup Agrawal & Sahiba Chadha, *Corporate Governance and Accounting Scandals*, 48(2) J.L. & ECON. 371 (2005).

away from more offending firms. Further, the results not only provide evidence on the cost of capital but also contribute to the growing literature on regulatory fines and reputational risks.[20] From an anti-corruption perspective, the goal is then to assess possible implications of these empirical findings for efforts to curb lax reporting standards among financial institutions, which play a quasi-public enforcement role in financial and tax-related legal regimes.

The remainder of the article is organized as follows. Part II reviews the institutional background of the SARs regime and relevant prior literature. Part III describes the data sources and research methodology. Part IV presents and analyzes the results. Part V concludes.

## II
## BACKGROUND

This Part first discusses the institutional background of suspicious activity reporting and relevant prior research. Next, this Part describes the multiple datasets used for this study and then presents the empirical method employed for examining how the fines imposed on banks affects the company's abnormal returns, which in turn may create incentives for regulatory compliance and inhibit corruption.

### A. Institutional Background

Money laundering and tax evasion have increasingly challenged regulators around the world.[21] In the United States, Congress, through a number of mechanisms, has developed a legal and regulatory framework to combat money laundering and other federal violations, including tax-driven crimes. Significantly, with the passage of the Bank Secrecy Act of 1970 (BSA)—the core of the regulatory framework—Congress introduced recordkeeping and reporting requirements for financial institutions and banks. The goal of the legislation is to enlist financial institutions in aiding the federal government's anti-money laundering efforts.[22] The BSA originally required banks to report cash transactions over $5,000, a threshold that increased to $10,000 in 1984. Subsequently, the Money Laundering Control Act of 1986 imposed liability on

20. *See generally* Jonathan M. Karpoff, D. Scott Lee & Gerald S. Martin, *The Costs to Firms of Cooking the Books*, 43(3) J. FIN. QUANT. ANAL. 581 (2008) [hereinafter *Cooking the Books*]; Jonathan M. Karpoff, D. Scott Lee & Gerald S. Martin, *The Consequences to Managers for Financial Misrepresentation*, 88 J. FIN. ECON. 193 (2008) [hereinafter *Consequences*]; John R. Graham, Si Li & Jiaping Qiu, *Corporate Misreporting and Bank Loan Contracting*, 89 J. FIN. ECON. 44 (2008); Sudheer Chava, Kershen Huang & Shane A. Johnson, *The Dynamics of Borrower Reputation Following Financial Misreporting*, 64(10) MGMT. SCI. 4775 (2018).

21. For example, *see* COSTANTINO GRASSO, WRITTEN EVIDENCE SUBMITTED BY DR COSTANTINO GRASSO (2020), https://committees.parliament.uk/writtenevidence/17591/pdf [https://perma.cc/DGB5-SVUL] (discussing issues relating to the attribution of corporate liability, the use of settlement agreements, and the role of whistle blowers in uncovering misconduct within the UK's anti-money laundering regime).

22. 31 U.S.C. § 5311 (2021).

individuals structuring transactions in order to evade the filing requirements under the BSA. In 1992, landscape of the BSA shifted with the passage of the Annunzio-Whylie Anti-Money Laundering Act which required financial institutions to report suspicious activities.[23] Two important design features of this legislation are that bank employees receive immunity from legal actions arising from the filing of SARs and that the reports are confidential. Without this feature, the SAR process would likely attract significant opposition from banks and financial institutions regarding an obligation to file meaningful reports of clients' suspicious activity relevant to possible violations of federal law.

Currently under the SAR reporting process, banks and financial institutions are required to file a SAR within thirty days of having detected the suspicious activity and are subject to fines and criminal prosecution for the willful failure to file SARs, which can be filed electronically and may be based on employee suspicions, bank compliance and monitoring programs, or any supervisory investigations. Finally, the Anti-Money Laundering Act of 2020 (AMLA)[24] lifted the cap on the FinCEN Whistleblower Reward Program and increased protections for employees reporting on possible money laundering activities at their financial institution and company. These FinCEN Whistleblower reforms introduced significant incentives for bank employees to report violations of the BSA and thereby increase the effectiveness of the enforcement regime in tracking potential offenses. Thus, the BSA enforcement landscape shifted with the passage of AMLA and the increased enforcement of repeat BSA violators under an expanded Whistleblower rewards program.

Although some suggest that the FinCEN enforcement actions have encouraged the beneficial filing of more SARs, the program has been subject to considerable controversy in the empirical literature. As a potential side effect of the immunity provisions, for instance, banks may be encouraged to overreport suspicious activity but continue to work with suspected launderers or tax evaders until the authorities intercede, which may never happen given the sheer volume of SARs filed annually. Significant volume of SAR filings could result in information overload for the regulators, thereby reducing rather than improving the enforcement benefits.[25] Moreover, to the extent that reporting entities understand the burdens experienced by regulators inundated with disclosures, the reporting entities may pursue a path of over disclosure,[26] with the expectation that it will limit the regulators' ability to detect the serious violations.[27]

23. 31 U.S.C. § 5318(g)(1).

24. Pub. L. No. 116-283, Div. F, §§ 6001-6003, 134 Stat. 3415 (2021).

25. *See generally* Troy Paredes, *Blinded by the Light: Information Overload and its Consequences for Securities Regulation,* 81 WASH. U. L.Q. 417 (2003) (discussing the consequences of information overload in securities regulation).

26. *See* Diane Ring & Charles Middleton, *VIRTEU Roundtable, Whistleblowing, Reporting, and Auditing in the Area of Taxation,* CORP. CRIME OBSERVATORY, at 33:55 (Feb. 26, 2021), www.corporatecrime.co.uk/virteu-whistleblowing [https://perma.cc/CZ3J-EM4X] (discussing internal gatekeepers' failures to report).

27. Joshua D. Blank, *What's Wrong with Shaming Corporate Tax Abuse*, 62 TAX L. REV. 542, 544

Regardless of the competing explanations, presumably the high cost of regulatory fines and potential for reputational harm may also serve to reinforce the compliance culture within large financial institutions.

B. Prior Literature

This section introduces the three strands of the literature motivating this analysis: the literature on firm reputation (including both an ex ante perspective focused on risk-taking behavior by firms and an ex post focus on measuring reputational costs incurred by firms); the literature on bank risks and performance (particularly with respect to governance); and the literature on event studies surrounding data leaks, financial fraud, and financial statement reporting.

A large body of empirical literature on the impact of regulatory sanctions has emerged in recent years. Starting with Beneish, a number of papers have looked at the reputational effects and long-term costs associated with financial misreporting.[28] Karpoff, Lee, and Martin consider the effects of SEC enforcement actions on firms for fraudulent misreporting on financial statements.[29] Using an event study methodology, they estimate how firms' market value is impacted by such fraudulent misreporting on financial statements. Notably, in estimating losses to the firm as the result of reputational risk, they take into account the size of any financial misreporting as well as the size of the penalties levied in estimating losses to the firm as the result of reputational risk. They find that firms face significant losses in terms of market value beyond the penalty amounts and the magnitude of the financial misstatements; they attribute these losses to decreased future revenues and increased borrowing costs as well as to more stringent bond and loan covenants as a result of the reputational damage caused by the financial misreporting. Armour, Mayer, and Polo document that the announcement of an enforcement process for violations of financial regulations results in reputational losses nearly nine times the size of fines.[30]

Other studies focus on the impact that misreporting can have on borrowing costs. Graham, Li, and Qui consider the effect of both fraudulent and error-related financial statement misreporting on firm borrowing costs in terms of higher spreads, shorter maturities, higher rates of collateralization, and more covenants.[31] They find that both types of misreporting, fraudulent and non-fraudulent, result in increased borrowing costs, but the impact of fraudulent misreporting is significantly higher. This effect is independent of the channel by which the misreporting is identified and the refiling is initiated. They do not

(2009).

28. Messod D. Beneish, *The Detection of Earnings Manipulation*, 55(5) FIN. ANAL. J. 24 (1999).

29. *Cooking the Books*, *supra* note 20, at 195.

30. John Armour, Colin Mayer & Andrea Polo, *Regulatory Sanctions and Reputational Damage in Financial Markets*, 52 J. FIN. & QUANT. ANAL. 1429, 1431 (2017).

31. Graham, Li & Qiu, *supra* note 20, at 46.

consider governance-related aspects except to note that internally identified and initiated refilings do not impact the increased borrowing costs that result from misreporting; they conjecture that this is evidence of minimal if any governance-related effects. However, their analysis is ex-post (that is, after the misreportings have been identified), and therefore does not preclude the possibility that governance may impact the amount of misreporting ex ante.

Chava, Huang, and Johnson also examine the reputational effects of financial misreporting on firms' borrowing costs, taking into account the duration of these effects, as well as the efficacy of firm efforts to improve reputation and lower borrowing costs in the aftermath of a misreporting.[32] They find that increased loan spreads persist for at least six years after restatement. They also consider several governance changes that firms make after misreporting; while such changes have some positive impact on improving reputational damage, even firms making multiple changes realize only minimal benefits. Their analysis is solely ex post and considers neither the role that better a priori governance can play in mitigating reputational damages, ceteris parabis, nor the role that better a priori governance can play in reducing the occurrence of future events that could damage reputation. Also, Gu, Hasan, and Lu show that Chinese firms involved in corporate lawsuits face reputational costs due to increased borrowing costs in terms of spreads, maturity, ratings, and covenants.[33] Although they consider aspects of the legal and regulatory environment as well as cultural and social aspects by examining firms based in different Chinese provinces, they do not consider the effects of firm-specific governance on reputation costs.[34]

In relation to the spillover effects on the cost of equity, Cao, J. Myers, L. Myers, and Omer consider the relationship between firm reputation and cost of equity.[35] Whereas they establish that firms with better reputation rankings enjoy reduced costs of equity financing, their study is not concerned with the drivers of reputation and therefore do not consider the role played by governance in this regard.

Managers linked with financial misrepresentation also suffer reputational damage in the form of reduced future earnings, diminished job prospects, and, in some cases, criminal penalties.[36] Higher reputational damages accrue to managers responsible for financial misrepresentations at firms with stronger governance characteristics, including certain ownership characteristics. This line of reasoning demonstrates that managerial and firm incentives can be aligned through better governance when it comes to avoiding reputational damage.

In recent years, a small literature has emerged that focuses on the relationship

32. Chava, Huang & Johnson, s*upra* note 20, at 4775.

33. *See generally* Xian Gu, Iftekhar Hasan & Haitian Lu, *Institutions and Corporate Reputation: Evidence from Public Debt Markets*, J. BUS. ETHICS, Jan. 2022.

34. *Id.*

35. Ying Cao, James N. Myers, Linda A. Myers & Thomas C. Omer, *Company Reputation and the Cost of Equity Capital*, 20 REV. ACCT. STUD. 42, 43 (2015).

36. *Consequences*, *supra* note 20, at 194.

between fraudulent events and governance and finds some evidence that strong governance reduces the occurrence of firm financial fraud. Beasley finds that firms with higher percentages of independent directors and longer average director tenures were less likely to be involved in financial fraud.[37] Similarly, Agrawal and Chadha find evidence that the presence of independent directors and certain audit committee characteristics are correlated with the reduced occurrence of earnings restatements.[38] These studies employed small sample sizes and their focus is limited to investigating specific board of directors and auditor characteristics.

In their analysis of the Panama Papers leak, O'Donovan, Wagner, and Zeume estimate reputational damages to firms named as using secretive offshore vehicles.[39] Using an event study, they calculate the impact of the leak on firm value. They found that firms named in the leak suffered a reduction in firm value due to decreased revenues and increased tax-related investigations. They also found evidence of an inverse relationship between governance quality and the financial impact of the leaks. One explanation is that some shareholders had used the offshore vehicles of poorly governed firms to expropriate value, and therefore the leak actually resulted in a stop to such expropriation activities, which led to some increases in firm value.

A related line of literature considers the role of corporate governance in bank failures during the financial crisis.[40] Berger, Imbierowicz, and Rauch find that certain characteristics were related to lower probabilities of bank failure during the financial crisis. Peni and Vèahèamaa find evidence that banks with stronger governance characteristics enjoyed moderately better financial performance at the beginning of the financial crisis and slightly higher financial market returns in the immediate aftermath of the financial crisis.[41] Both of these studies are limited to the years surrounding the financial crisis and do not consider the aspects of governance and firm behavior that would result in regulatory penalties and fines. In the realm of European banks, Migliardo and Forgione find that certain ownership characteristics have positive effects on banks' profitability and risk profiles.[42] Azar, Raina, and Schmalz examine the relationship between bank ownership, competition, and pricing.[43] They find that the common ownership of

37. Beasley, *supra* note 19, at 445.

38. Agrawal & Chadha, *supra* note 19, at 374.

39. O'Donovan, Wagner & Zeume, *supra* note 14, at 4118.

40. *See*, *e.g.*, Allen N. Berger, Björn Imbierowicz & Christian Rauch, *The Roles of Corporate Governance in Bank Failures During the Recent Financial Crisis*, 48 J. MONEY & CREDIT BANKING 729, 730 (2016) ("Despite these calls for changes in corporate governance and the extant literature on its effects on risk taking, there is little existing evidence that corporate governance arrangements lead to actual bank default. The goal of this paper is to fill this gap in the literature.").

41. Emilia Peni & Sami Vèahèamaa, *Did Good Corporate Governance Improve Bank Performance During the Financial Crisis?*, 41 J. FIN. SERVS. RSCH. 19, 21 (2012).

42. Carlo Migliardo & Antonio Fabio Forgione, *Ownership Structure and Bank Performance in EU-15 Countries*, 18 CORP. GOVERNANCE: INT'L J. BUS. SOC'Y 509, 522 (2018).

43. *See generally* José Azar, Sahil Raina & Martin C. Schmalz, *Ultimate Ownership and Bank Competition*, 51 FIN. MGMT. 227 (2022).

shareholders across banks in the United States results in decreased competition and increased pricing.

## III
## RESEARCH METHODOLOGY

This section describes the datasets and methodology and provides an overview of the summary statistics of the datasets.

### A. Data

Although FinCEN provides some descriptive statistics on SAR reports submitted by banks operating in the United States, the data are only very high level and lack any granular detail.[44] However, in September 2020, BuzzFeed News in cooperation with the International Consortium of Investigative Journalists (ICIJ) published several news articles using leaked SAR data.[45] The ICIJ also published a portion of these data showing certain information on a selection of over 18,000 SARs filed by U.S.-based banks from 2004 through 2017.[46] These data contain the names of the originating and destination banks as well as the countries of origin and destination, the dates and amounts of the transactions, and the U.S,-based correspondent bank that cleared the transactions.

Table 2 provides some descriptive statistics of the data from the FinCEN leaks as published by the ICIJ along with some of the high-level summary data provided by FinCEN. The FinCEN only provides high-level summary data beginning in 2014. However, as can be seen by comparing the annual summary statistics, the number of SARs covered by the FinCEN data leaks is only a small fraction (less than one percent) of the total SARs filed by financial institutions over this overlapping four-year period (from 2014 through 2017). Without any data on the entire population of SARs from which this sample is drawn, it is impossible to draw any inferences from the information in the SARs from the FinCEN leaks. Furthermore, there is no definitive information about which, if any, of the SARs published due to the FinCEN leaks ultimately resulted in fines. The FinCEN data leaks shed interesting light on the actions of regulators in response to fines. Journalists have used the data to show patterns over time of

44. *See generally SAR Stats*, FINCEN, https://www.fincen.gov/reports/sar-stats [https://perma.cc/4BVN-DA49] (last accessed Jan. 26, 2022).

45. *See, e.g.*, Jason Leopold et al., *The FinCEN Files*, BUZZFEED (Sept. 20, 2020), https://www.buzzfeednews.com/article/jasonleopold/fincen-files-financial-scandal-criminal-networks [https://perma.cc/RXX5-JQ5D] (presenting highlights found in the FinCEN files); *FinCEN Files: Global Banks Defy U.S. Crackdowns by Serving Oligarchs, Criminals and Terrorists*, ICIJ (Sept. 20, 2020), https://www.icij.org/investigations/fincen-files/global-banks-defy-u-s-crackdowns-by-serving-oligarchs-criminals-and-terrorists/ [https://perma.cc/WJ8T-V8RU] (presenting more findings from the FinCEN Files).

46. *Explore the FinCEN Files Data*, ICIJ (Sept. 20, 2020), https://www.icij.org/investigations/fincen-files/explore-the-fincen-files-data/ [https://perma.cc/W56A-L8YT].

transactions involving sanctioned individuals and entities.[47] Although this perhaps opens banking regulators to scrutiny, it should be of no surprise to banks and of little more than fleeting interest to the market. The FinCEN data leaks are not broad enough to statistically analyze the financial effects on financial institutions or to investigate relationships with other firm variables. Although there may be some very short-term initial shocks to some market participants in seeing the involvement of a specific bank in a fraudulent activities case disclosed in the leaks and the accompanying journalistic coverage, there should not be any significant effects on the market value of banks. Banks have already submitted these SARs to regulators; fines have already been assessed and paid. Similar to other papers examining such data links, this article introduces further data and analysis in order to fully examine the overall issues.[48]

In order to take a deeper and broader approach to analyzing the involvement of financial services firms in fraudulent activities, this research begins by looking at fines levied against banks and related financial institutions for financial and banking-related offenses. This work also examines the effect of market reactions to the announcement of regulatory fines and related violations as well as the connection with corporate governance and holdings data. To do so, this analysis employs a dataset consisting of announcement dates of fines, the names of the offending financial institutions, and the corresponding penalty amounts drawn from the Violation Tracker database maintained by the Corporate Research Project.[49] The Violation Tracker dataset contains information on a wide range of fine categories levied on companies by U.S. federal and state authorities on companies.

To compile this dataset using the Violation Tracker database, it is first necessary to screen for any fines imposed on financial industry companies over the 2007–2017 period for financial-related offenses including anti-money-laundering deficiencies, economic sanctions violations, know-your-customer (KYC) deficiencies, and other banking-related violations. This provides the amount of the penalties, the dates they were announced, information on the assessing agency or agencies, and details of the type of offense and the fine being levied. It is then necessary to screen these data for complete records and remove any incomplete records; it is also necessary to combine any entries that include fines levied by different regulators together for the same offense.[50] Summary statistics on the penalties data used in the dataset are shown in Table 3.

It is then necessary to merge this dataset with data from the Bloomberg Financial terminal and from Refinitiv (formerly Thomson Reuters). From

47. *See supra* notes 9–10, 13, 25.

48. *See, e.g., supra* note 14 (providing sources that also detail the links between lax reporting standards and financial and reputational risks).

49. *See Violation Tracker,* GOOD JOBS FIRST, https://www.goodjobsfirst.org/violation-tracker [https://perma.cc/L36W-XYJK] (last accessed May 1, 2022); CORP. RSCH. PROJECT, https://www.corp-research.org/home-page [https://perma.cc/WB6U-5ZAP] (last accessed May 1, 2022).

50. *See* sources cited *id.*

Bloomberg, the following data is taken: annual firm-level accounting data, GICS industry group classifications, cost of capital (cost of debt and cost of equity) measures, and securities pricing and market capitalization data for all firms.

B. Ownership and Governance Characteristics

Corporate governance ratings data, as well as data on executive compensation and board structure, are taken from Bloomberg. Data on insider holdings are also sourced from Bloomberg; specifically, the sum of the percentage of shares held by executives and by non-employee directors is used.

Characteristics of institutional investor holdings are calculated from data accessed via summary SEC 13F filings data available through the Refinitiv Database on Institutional Holdings. Investment managers with at least $100 million in assets under management are required to file form 13F with the SEC, listing their equity ownership stakes.[51] For these calculations, it is necessary to consider the ultimate or beneficial owner of the shares. This way, when an asset manager holds shares in the same company in different funds or managed accounts of the same company, double-counting the number of investors holding the company's shares is avoided and it is ensured that each total holding is attributed to the correct institutional investor.

The data obtained from the forms 13F allow for the calculation of the following firm ownership characteristics: the percentage of shares held by all institutional investors; the percentage of shares held by blockholders (defined as an institutional investor with an ownership position of at least five percent); and the percentage of shares held by the five largest institutional investors.

The following executive compensation data is included in the dataset: the ratio of total executive compensation to total revenues, the ratio of the value of options awarded to all executives to total executive compensation, the ratio of the value of stock awarded to all executives to total executive compensation, the ratio of cash bonuses awarded to all executives to total executive compensation, and the ratio of total variable compensation to total executive compensation.

The following characteristics of firms' boards of directors are included in the data: the percentage of independent directors on the board, the size of the board of directors, the number of board meetings per year, and an average of the percent of members in attendance at each board meeting throughout the year.

In addition to insider and institutional investor holdings data, executive compensation data, and board characteristics, third-party ratings of firm governance published by Bloomberg and Sustainalytics are employed to study the effects of governance.

The Bloomberg governance disclosure score does not purport to measure governance quality; this rating measures only the extent of a company's governance-related data disclosure. It is a Bloomberg proprietary score that ranges from 0.1 for companies that disclose a minimum amount of governance

51. 17 C.F.R. § 240.13f-1 (2006).

data to 100 for those that disclose every governance-related data point collected by Bloomberg. Bloomberg states that "each data point is weighted in terms of importance" and that "the score is also tailored to different industry sectors. In this way, each company is only evaluated in terms of the data that is relevant to its industry sector."[52] This score measures the amount of governance data a company reports publicly and does not measure the company's performance on any data point.

The Sustainalytics governance quality ranking is "assigned to the company based on its governance score relative to its industry peers."[53] The ranking ranges from 0 for the companies with the poorest governance quality ranking, to 100 for the best. The Sustainalytics governance ranking is the rank of the company's management of its governance activities in relation to industry peers.

Using both the Sustainalytics and Bloomberg governance ratings allows us to have two competing ratings of overall firm governance and to specifically consider firm disclosure of governance data as measured by the Bloomberg rating versus the quality of firm governance as measured by the Sustainalytics rating.

### C. Event Study Methodology

Next, an event study methodology is employed to calculate abnormal returns around announcement dates related to the FinCEN leaks and regulatory fines in the dataset.

An event study is used to estimate the impact of a particular news item or event on a firm's share price. By employing the Capital Asset Pricing Model (CAPM),[54] one estimates how each firm's security reacts with general market movements. This is how the security's returns are expected to develop in the absence of any new firm-specific information. The CAPM model calculates expected returns (E(R)) as:

$$E(R) = Rf+alpha+beta*(Rm-Rf),$$

where Rf is the risk-free rate, and Rm is the market return.

This then allows for the calculation of daily Abnormal Returns (ARs). These are calculated as the difference between the predicted daily return in relation to general market movements according to the CAPM and the actual security returns. One can express the AR calculation as:

$$AR=R-E(R),$$

where R is the actual realized security return and E(R) is the expected security return according to the CAPM model.

Cumulative Abnormal Returns (CARs) can then be calculated for windows of time around the event or release of information (defined as day $t$=0) by

52. BLOOMBERG FIN. TERMINAL (last accessed June 12, 2021).

53. *Id.*

54. *See generally* William F. Sharpe, *Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk*, 19 J. FIN. 425 (1964) (introducing and supporting CAPM). *See also* John Lintner, *The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets*, 47 REV. ECON. STAT. 13 (1969).

summing all daily ARs for that time window. Therefore, for a given event window (day t=*i* to day *t*=*j*), the CAR is therefore calculated as:

$$\text{CAR}= \sum_{n=i}^{j} AR_n.$$

For a dataset of many firm-event date observations, the statistical significance of the mean CAR can be calculated to generalize the reaction of all firms to a single common event (as is the case for the FinCEN leaks) or the reactions of many firms to various individual firm-specific events occurring at different times (as is the case for the penalty announcements in the dataset).

To calculate the terms for the CAPM model for expected return calculations for each security, an estimation window of 100 days, starting 130 days before the event date (day *t*=0) is used. The gap between the estimation window and the day of the event minimizes the likelihood that any estimated returns are impacted by the event itself, by any advance non-public information, or by any market anticipation of, or speculation about, the event. The returns on the S&P 500 index are used for market returns and the yield on the thirty-day U.S. Treasury bill for the risk-free rate. An ordinary least squares (OLS) regression is then used to calculate the terms for the CAPM for each security.

ARs are then calculated for publicly traded financial institutions named in the SARs from the FinCEN leaks using the date of the leaks as *t*=0. Additionally, ARs for each penalty date in the dataset on penalty events are calculated. The date of the announcement of the fine is *t*=0. The ARs are summed in order to calculate CARs for various windows of time around the announcement dates to generalize market reactions immediately around the event and over a slightly longer time period. Furthermore, this analysis examines CARs in pre-event and post-event windows in order to analyze any securities price movements occurring prior to the event due to leakage of non-public information pre-announcement date, market anticipation of or speculation of the event, or a combination of both.

### D. Calculating Adjusted CARs

From the event study conducted on the events in the fines database, one can study the effect of the penalty announcement on a firm's market value; however, this statistic alone provides limited information beyond the change in security returns (and firm market value) in response to the announcement of a fine. The amount of the fine also needs to also be considered for a more meaningful analysis. Therefore, this analysis considers the amount of the fine in relationship to the firm's pre-announcement market value. By adjusting the CARs by the amount of the fine as a percent of market capitalization, it is then possible to properly assess how the market reacted to the announcement of the fine and gauge any relative over or under-reactions beyond the impact from the value of the fine itself. Karpoff, Lee, and Martin make a similar adjustment in calculating

the effects on firm value in their event study.[55] The method employed in this analysis calculates adjusted CARs by adding the CAR to the ratio of the announced fine to the firm's market capitalization on the day before the fine was announced (day $t$=-1).

Any fines levied would erode the market value of the firm by the amount of the fine; and any abnormal market returns in excess of that percentage would indicate that investors are perceiving additional information from the announcement of the fine with regard to reputational losses from decreased revenues, increased borrowing costs, or future related regulatory fines. An excessively negative reaction (that is, an adjusted CAR<0) could be due to investors believing that there are potentially more fines to come, under-anticipating the risk of the fine being assessed, or selling shares because of reputational effects that may result in future value loss to the firm. In the case of institutional investors with stakeholder-imposed mandates, these institutional investors may be selling shares because of concerns about non-financial reputational impacts of the announced fine.

On the other hand, if there are abnormal returns less than the amount of the fine as a percentage of the market cap before the fine was announced (that is, an adjusted CAR>0), it could indicate that investors are less concerned about the value impact of the fine on the firm. Perhaps they over-estimated the risk of a fine or the amount of the fine ultimately assessed, or they may be largely confident in the ability of the firm's management to mitigate any effects on the long-term value of the firm and do not anticipate any lasting reputational effects on firm value.

By considering pre- and post-announcement windows, it is possible to separately consider investor anticipations leading up to the final announcement of the fine amount and in the days immediately after the fine is announced. The pre-announcement window allows for the consideration of how investors are anticipating the ultimate amount of the fine and whether they are over- or under-estimating the final amount of the fine. Reactions prior to the fine announcement may also be indicative of information being communicated by the firm to investors in the lead-up to the announcement of the fine or leakage of non-public information by firm insiders. Regardless of the specific reasons causing them, significant negative adjusted CARs would indicate that the market is over-punishing the firm, because of unclear information communicated by the firm, trading by insiders, trading due to leaked non-public information, or simply the market estimating the negative reputational costs. In any event, one would similarly expect weaker governance to lead to more significant negative adjusted CARs in both the pre-announcement window and post-announcement windows, albeit for potentially different reasons.

This analysis then adds the adjusted CARs for the pre-announcement and post-announcement windows (respectively $t$=-3 to $t$=-1 and $t$=0 to $t$=3) for each

55. *Cooking the Books*, *supra* note 20, at 592–95.

observation in the penalty dataset where each observation is for a unique firm-penalty date pairing. Table 4 shows univariate statistics for all data variables.

E. Regressions

This work uses regression analysis to study the effect of the relationship between corporate governance and firm ownership characteristics on the market reaction to penalty announcements and total penalties incurred by firms, as well as to investigate the resulting effects on the cost of capital.

1. Control Variables

In all the regression models, the following control variables are employed. The natural logarithm of total assets controls for size. The ratio of total debt to total assets is used to control for leverage. Tobin's Q is used to control for levels of intangible assets as it considers the difference between book and market value of the firms. Return on assets (ROA) is used to control for firm profitability. Dummy variables are generated for each four-digit GICS industry group classification (within the GICS financial sector) in order to control for industry group effects, and dummy variables are generated for each year in order to control for year effects. All control variables are lagged by one year in the regressions.

2. Market Reaction Analysis (Ex Post)

By regressing on the adjusted CARs, it is possible to test to what extent certain governance characteristics are related to market reactions in excess of the amount of the penalties imposed. Karpoff, Lee, and Martin use this excess to estimate the reputational losses incurred by firms.[56] Thus, this analysis allows for the examination of which governance characteristics are related to reduced reputational losses from imposed fines. This ex post analysis allows for the testing of whether governance and ownership characteristics can mitigate the value consequences and reputational risks incurred by firms from the imposition of regulatory fines. As the above literature review has discussed, previous authors have found that some aspects of governance can have a mitigating effect on reputational damages.[57] Therefore, it is expected in this work that less negative (that is, more positive) adjusted CARs would be correlated with better firm governance.

3. Firm Behavior Analysis (Ex Ante)

This work then examines the relationship between governance and firm behavior by considering the total fines levied against a firm and the firm's governance characteristics. For these regressions, the dependent variable is the sum of all fines incurred by a firm in a particular year. In order to consider the

56. *Id.*

57. *See generally* Chava, Huang & Johnson, s*upra* note 20; Karpoff, Lee & Martin, *supra* note 20; Beasley, *supra* note 19; Agrawal & Chadha, *supra* note 19.

firm perspective and how firm behavior in incurring fines may be related to corporate governance factors, the amount of the fine is divided by the firm's revenues. This measure of fines scaled by revenues provides a relative perspective of how damaging the fines are to the firm's cash flows. Chava, Huang, and Johnson find that firm improvements in governance made after financial misreporting have little impact on reducing reputational costs.[58] The ex ante perspective employed here examines the role that governance can play in mitigating firms' risk-taking behavior with respect to regulatory risks before fines are imposed. As some of the prior literature finds that better governance can lead to a lower risk of bank failure[59] and better financial performance by banks,[60] it is expected that better governance will also lead to less risk-taking by firms and therefore a lower total amount of fines being imposed.

4. Cost of Capital Effects

Finally, this work considers the effect of the penalties on the cost of capital along with the governance and ownership characteristics that the previous analyses found most significant. This way, it is possible to compare the reputational impact of penalties on firm financing costs, along with corporate governance factors. For the cost of capital, Bloomberg-reported estimates of a firm's cost of debt and cost of equity are employed. The cost of debt calculation takes into account the after-tax weighted average spread of a firm's debt securities over long-term (ten-year) government bonds; it is calculated using government bond rates of corresponding maturities, a debt adjustment factor, the proportions of short- and long-term debt-to-total-debt, and the firm's effective tax rate. The cost of equity is derived using the Capital Asset Pricing Model (CAPM),[61] which represents the premium over the risk-free rate demanded by equity investors in the firm.

## IV

## RESULTS AND ANALYSIS

This section discusses the results of this work's analyses in connection with previous literature and the conjectures presented above.

### A. Event Study Results

1. FinCEN Leaks Event Study Results

Table 5 panel A examines the CARs surrounding the FinCEN leaks for

58. Chava, Huang & Johnson, *supra* note 20, at 4776.

59. Berger, Imbierowicz & Rauch, *supra* note 40, at 2–3.

60. Peni & Vèahèamaa, *supra* note 41, at 32; *see also* Migliardo & Forgione, *supra* note 42, at 518 (finding that a concentrated ownership structure contributes to improved bank profitability); Azar, Raina & Schmalz, *supra* note 43, at 6 (implying that failure to consider bank ownership structures can cause adverse effects on bank competition).

61. *See generally* Sharpe, *supra* note 54; Lintner, *supra* note 54.

several selected event windows. Although the market reaction in the days after the FinCEN leaks (from the day of the leak until three days after the leak), is negative, this observation is tempered when examining the wider seven-day window around the leak (from three days before until three days after the leak). Looking at that window, the mean CAR is not even statistically different from zero. Using even wider windows (from five days before until five days after the leak and up to thirty days before until thirty days after the leak), the event study shows statistically significant positive CARs, indicating that the market value of the banks has more than recovered from any value changes caused by the FinCEN leaks. The fleeting nature of the negative CARs around the release date of the FinCEN leaks and the magnitude of positive mean values of the CARs in the wider windows would further suggest that the market does not anticipate any long-term value consequences from the publication of the FinCEN leaks.

The results of this analysis are in line with expectations that there is little information from the leaks from which investors can infer any long-term value effects on the banks involved. The results are in contrast with the O'Donovan, Wagner, and Zeume finding of long-term negative value effects for firms implicated in the Panama Papers leaks.[62] However, the Panama Papers leaks uncovered ongoing and previously secretive actions by some firms to aggressively evade taxes, and sometimes to expropriate value, offer bribes, or engage in other fraudulent or criminal activities. The leaked SARs as part of the FinCEN leak were already filed with regulators, who would already have assessed both the relevant fines related to the activities and the impact of the fines absorbed by the market at the time of the assessments.

Despite media reporting of the FinCEN leaks that highlighted the systemic conduct of the financial institutions and government regulators, and provided insights for observing the failures of both through a lens of financial corruption (as broadly conceived), the banks and other financial institutions nonetheless suffered no negative long-run returns as measured by CARs.

2. Penalty Announcement Event Study Results

Table 5 panel B shows the adjusted CARs (adjusted by penalty amount as a proportion of market cap on the day before the fine was announced) for the announcement of fines for several selected event windows. Based on the statistical significance of mean adjusted CARs, there is little evidence of widespread disclosure of new information by firms, little leakage of non-public information by insiders, or both, regarding the regulatory investigation leading up to the penalty announcement before the fine is officially announced. There are statistically significant negative adjusted CARs after the event and in the seven-day window around the event (from three days before until three days after the fine announcement). Importantly, this shows that there is a statistically significant decrease in firm value in excess of the amount of the fines imposed.

62. O'Donovan, Wagner, & Zeume, *supra* note 14, at 4136.

However, by the eleven-day window (from five days before until five days after the day of the fine announcement), this effect is already eroded and is statistically similar to zero. One possible interpretation of this finding is that negative market reaction over a short time window indicates that the market quickly comprehends the new information of regulatory sanctions risk.

B. Regression Results

The event study of the penalty announcements is informative of the average reaction of firms to penalties and shows with statistical significance the reputational costs firms incur in addition to the announcement of the fines. Thus, while prior literature has studied the impact of regulatory sanctions on banks, this paper goes further and examines how individual firms' governance characteristics are related to the magnitude of the reaction beyond the penalty amounts imposed. This study regresses the governance characteristics onto the adjusted CARs, taking into account governance characteristics related to board of directors, executive compensation, and ownership characteristics, as well as third-party rankings of firm governance.

1. Board Characteristics

The results indicate that firms with higher percentages of independent directors incur lower fines overall. This is consistent with the view that risk-taking behavior by management can be mitigated through the presence of independent directors, as has been evidenced in studies by Beasley, Agrawal and Chadha (when independent directors bring additional expertise) and by de Andreas and Vallelado (as long as boards are not excessively large).[63]

This study also finds that higher percentages of independent directors are correlated with more negative pre-announcement adjusted CARs—a result potentially indicative of insider trading and the leakage of information and the resulting trading on non-public information, or a combination of both. This result is consistent with Ravina and Sapienza's finding that independent directors often sell stock prior to official announcements of news that negatively affects firm share prices.[64]

There is a negative relationship between CEO duality and fines: firms in which the CEO and chairman of the board positions are occupied by the same individual have lower fines. Moreover, CEO duality is correlated with more negative adjusted CARs after fine announcements. The beneficial and negative

63. *See*, *e.g.*, Beasley, *supra* note 19, at 374 (finding that firms with more independent boards also have a lower incidence of accounting fraud and earnings management); Agrawal & Chadha, *supra* note 19, at 463 (finding that the proportion of outside members on a board is lower for firms experiencing financial statement fraud compared to no-fraud firms); Pablo de Andres & Eleuterio Vallelado, *Corporate Governance in Banking: The Role of the Board of Directors*, 32 J. BANKING & FIN. 2570, 2597 (2008) (finding that bank boards contribute to solving the weaknesses of other corporate governance mechanisms when applied to financial institutions).

64. Enrichetta Ravina & Paola Sapienza, *What Do Independent Directors Know? Evidence from Their Trading*, 23(3) REV. FIN. STUD. 962, 999 (2010).

impacts of CEO duality in the results are consistent with the prior literature.

Although there is conflicting evidence regarding whether CEO duality has a beneficial or harmful effect on firm performance,[65] Berger, Imbierowicz, and Rauch find that CEO duality lowers the probability of bank failure.[66] They conjecture that this may be due to increased exposure to reputational damage when the same individual occupies two of the most powerful and visible positions in the company. The findings of Karpoff, Lee, and Martin show that, along with firms, managers suffer personal reputational costs in terms of diminished job prospects and reduced future earnings potential.[67] This is particularly the case for more senior managers and board chairs; combining those two roles would mean that the individual would likely bear an even greater reputational effect if the firm were fined. This effect is likely amplified for executives in the financial services sector. The financial crisis of 2007–2008 brought the failures of financial institutions into the spotlight and resulted in even greater stigma from being attached to such failures.

The finding on CEO duality indicate that this feature leads to fewer fines ex ante, as these CEO-chairmen are more cognizant of the increased reputational risks they personally face. Ex post, the results indicate that firms with CEO duality suffer greater reputational damage, as they are punished more severely by markets after the announcement of a fine. Consistent with this result is the observation that this outcome would be particularly notable in the case of firms with a joint CEO and board chairman.

2. Compensation Characteristics

The analysis with respect to compensation characteristics shows a positive relationship between fines and executive compensation, both total compensation and the ratio of variable compensation to total compensation. There is also a positive relationship between executive compensation and adjusted CARs after the announcements of fines, indicating that higher compensation may have a slight mitigating effect on market reactions in the wake of fine announcements.

The literature supports the conjecture and findings that higher compensation results in greater risk-seeking behavior and more fines. Banks and other financial institutions are highly leveraged, and managerial incentives are, therefore, more aligned with common shareholders and less so with debtholders, meaning that less attention is given to downside risks.[68] This situation is obviously intensified when there is a greater component of variable compensation. These results are consistent with the analyses of executive compensation at banks by Fahlenbrach

65. *See*, *e.g.*, Renée B. Adams, Benjamin E. Hermalin & Michael S. Weisbach, *The Role of Boards of Directors in Corporate Governance: A Conceptual Framework and Survey*, 48 J. ECON. LIT. 58, 82 (2010) (highlighting studies that show CEO duality has little effect on corporate performance and a tenuous causal connection at all).

66. *See generally* Berger, Imbierowicz & Rauch, *supra* note 40.

67. *Consequences*, *supra* note 20, at 213.

68. Lucian A. Bebchuk & Holger Spamann, *Regulating Bankers' Pay*, 98 GEO. L.J. 247, 247 (2010).

and Stulz as well as Berger, Imbierowicz, and Rauch.[69] Though their analyses considered the compensation of different levels of executives (which offers a more nuanced picture), the results are consistent with their overall conclusions.

With regard to the positive relationship between executive compensation levels and adjusted CARs after fines are announced, consider the results of Karpoff, Lee, and Martin, which demonstrate the negative personal reputational costs (in terms of diminished future employment prospects and earnings potential) that accrue to managers when firms misreport financial statements.[70] The results of the analysis of compensation characteristics can be interpreted as showing two competing effects: higher compensation results in increased incentives for risk-taking behavior ex ante, but personal reputational costs motivate executives to mitigate the fallout from the imposition of regulatory penalties ex post. The results suggest that this motivation increases with compensation levels since higher paid executives have more to lose (in terms of the present discounted value of future earnings) when risky behavior is identified and punished by regulators.

3. Ownership Characteristics

The first set of results find that higher holdings by firm insiders are associated with statistically significant more negative adjusted CARs in the pre-announcement windows of fines. This is indicative of insider trading, leakage of non-public information, or a combination of both. This result is consistent with the literature on insider trading, such as the results of Summers and Sweeny evidencing insider trading activity amid misstated financial statements and Ravina and Sapienza's demonstration of insider trading by directors before negative company announcements.[71] Taking the results, more broadly, as general evidence of poor governance, this would be consistent with findings by McConnell and Servaes, who show that as insider holdings increase, firm value declines; and by Berger, Imbierowicz, and Rauch, who show that higher shareholdings of insiders increase the likelihood of bank failure.[72]

With respect to institutional ownership characteristics and ex ante risk-seeking firm behavior, consider two competing hypotheses. On the one hand, investors with large holdings have incentives to actively monitor firm behavior and the means through increased voting power, to ensure that firms avoid

69. *See generally* Rüdiger Fahlenbrach & René Stulz, *Bank CEO Incentives and the Credit Crisis*, 99 J. FIN. ECON. 11 (2011) (investigating whether bank performance during the recent credit crisis is related to CEO incentives, including compensation, before the crisis); Berger, Imbierowicz & Rauch, *supra* note 40 (examining the ownership and management structures, including compensation, of default and no default commercial banks in the United States).

70. *Consequences*, *supra* note 20, at 213–14.

71. *See generally* Scott L. Summers & John T. Sweeny, *Fraudulently Misstated Financial Statements and Insider Trading: An Empirical Analysis*, 73 ACCT. REV. 131 (1998) (investigating the relationship between insider trading and fraud); Ravina & Sapienza, *supra* note 64 (comparing the trading performance of independent directors and other executives).

72. John J. McConnell & Henri Servaes, *Additional Evidence on Equity Ownership and Corporate Value*, 27 J. FIN. ECON. 595, 610 (1990); Berger, Imbierowicz & Rauch, *supra* note 40, at 14.

excessive risk taking. On the other hand, large institutional investors may assume a more passive role in part because of monitoring costs and the free-rider problem that creates a failure of collective action. Similarly, when considering the influence of ownership concentration and large blockholders, there are also two competing effects. Concentrated ownership can result in blockholders using their influence to pursue private benefits to the detriment of total firm value; however, high ownership concentration can lead to more efficient monitoring which can benefit all shareholders, not just blockholders.[73]

Particularly in the case of financial institutions, Erkens, Hung, and Matos argue that with more concentrated shareholders, the interests of common shareholders and managers are more closely aligned. This results in higher-risk behaviors as shareholders and managers do not internalize the social costs of bank failure and, therefore, overly discount the downside risk of risky strategies. They find that higher institutional ownership was associated with greater risk-taking behavior immediately prior to the financial crisis of 2007–2008.[74] However, their study focuses on the risk of bank failure during an exceptional period: 2007–2008. More broadly speaking, the evidence seems to support the conjecture that higher institutional ownership has a positive effect on the risk-return profile of firms.[75] Additionally, newer studies focusing on the banking sector after the financial crisis of 2007–2008, such as Azar, Raina, and Schmalz as well as Migliardo and Forgione, find that concentrated ownership and large levels of institutional investors lead to improved performance metrics.[76] Consider, also, that due to extensive common ownership among larger institutional investors across the U.S. banking sector—a trend that has continued to increase notably since the financial crisis of 2007–2008—competition among financial institutions

73. *See generally* Michael J. Barclay & Clifford G. Holderness, *Private Benefits from Control of Public Corporations*, 25 J. FIN. ECON. 371 (1989) (analyzing the pricing of 63 block trades between 1978 and 1982 involving at least 5% of the common stock of NYSE or Amex corporations); Andrei Shleifer & Robert W. Vishny, *Large Shareholders and Corporate Control*, 94 J. POL. ECON. 461 (1986) (exploring how large shareholders monitor managers and look for ways to better the firm); Bernard Black, *Shareholder Passivity Reexamined*, 89 MICH. L. REV. 520 (1990) (arguing that shareholder voting can act as an important constraint on managers); Jonathan M. Karpoff, Paul H. Malatesta & Ralph A. Walking, *Corporate Governance and Shareholder Initiatives: Empirical Evidence*, 42 J. FIN. ECON. 365 (1996) (examining shareholder-initiated proxy proposals on corporate governance); Anup Agrawal & Charles R. Knoeber, *Firm Performance and Mechanisms to Control Agency Problems between Managers and Shareholders,* 31 J. FIN. QUANT. ANAL. 377 (1996) (examining whether certain corporate governance mechanisms are related to the probability of a company restating its earnings); Steven Huddart, *The Effect of a Large Shareholder on Corporate Value*, 39 MGMT. SCI. 1407 (1993) (analyzing the value of a corporation as a function of its ownership structure); Ernst Maug, *Large Shareholders as Monitors: Is There a Tradeoff Between Liquidity and Control?*, 53 J. FIN. 65 (1998) (analyzing the incentives of large shareholders to monitor public corporations).

74. David H. Erkens, Mingyi Hung & Pedro Matos, *Corporate Governance in the 2007–2008 Financial Crisis: Evidence from Financial Institutions Worldwide*, 18 J. CORP. FIN. 389, 291 (2012).

75. *See generally* McConnell & Servaes, *supra* note 72*;* Stuart L. Gillan & Laura T. Starks, *Corporate Governance Proposals and Shareholder Activism: The Role of Institutional Investors*, 57 J. FIN. ECON. 275 (2000).

76. *See generally* Azar, Raina & Schmalz, *supra* note 43; *see also* Migliardo & Forgione, *supra* note 42, at 518.

has decreased, resulting in increased profitability and, therefore, less pressure on individual firms to seek out riskier strategies to improve profitability.[77]

To support the positive benefits of institutional ownership, the combined regression models demonstrate that, controlling for the same level of ownership among the top five largest investors, there is a positive relationship between blockholders and fines. There is a negative relationship between blockholders and fines only when the holdings of blockholders are regressed alone (that is, without holding overall ownership of the top five largest institutional investors constant). This is because of the strong effect at the large end when the top five shareholders are increasing their ownership stake. This supports the idea that an increase in blockholders, holding the combined ownership of the top five constant, leads to riskier behavior. It is only when very large investors have larger stakes (that is, the holdings of the top five increases), while controlling for constant levels of blockholders, that firms start to adopt less risky behavior; thus, the increased presence of very large institutional investors reins in the risk-seeking motives of average blockholders. This illustrates the overriding influence from the very largest institutional investors. This influence likely occurs because of a combination of the decreased competition that comes with common ownership, the presence of a strong voice to shape managerial behavior,[78] and reputational concerns. The reason for the latter is that these large investors would disproportionately face a reputational cost due to excessive risk-taking, particularly in the financial services sector after the financial crisis resulted in greater stigma being attached to bank failures. The ex ante analyses on penalties accrued by firms nicely illustrate the competing effects and demonstrate that one competing hypothesis wins out over the other depending on how significant the influence is from the very largest institutional investors.

The ex post analysis similarly shows that greater holdings by institutional investors generally, and among the five largest in particular, provide a stabilizing effect: negative adjusted CARs after the announcement of fines are decreased resulting in less market reaction beyond the dollar value of the fine. This result can be explained by the fact that a larger percentage of outstanding shares are held by a few large institutional investors who are less likely to exercise exit,[79] meaning a lower volume of shares overall are available to be traded, thus tempering any negative price movements. The market is, perhaps, also cognizant of the positive reputation of these firms to engage in less risky behavior and accrue fewer total fines. This means that the large firms' institutional investors, through their strong influence on management (that is, voice channels), are motivated to mitigate any long term reputational damages from the levied fines.[80]

77. *See generally* Azar, Raina & Schmalz, *supra* note 43.

78. *See* Jan Fichtner, Eelke M. Heemskerk & Javier Garcia-Bernardo, *Hidden Power of the Big Three? Passive Index Funds, Re-concentration of Corporate Ownership, and New Financial Risk*, 19 BUS. & POL. 298, 307, 322 (2017).

79. *Id.* at 308.

80. For a discussion of the influence of large shareholders on management, see *id.*

However, given a constant level of holdings among the five largest investors, firms with larger blockholdings overall are punished more severely by the market with more negatively-adjusted CARs after the announcement of fines by decreases in market value beyond the dollar value of the fines. Thus, the presence of larger blockholdings outside of the five largest institutional investors is consistent with the view that such smaller blockholders are more likely to exercise exit and sell shares in reaction to negative news. This also mirrors the ex ante relationship between blockholders and risk-seeking behavior.

4. Governance Rankings

The results on using third-party governance rankings confirm the findings that better governance is associated ex ante with less risky firm behavior as measured by lower fines and ex post with less extreme market reactions to the announcement of fines.

This part of the analysis has a parallel in the approach taken by Peni and Vèahèamaa who used the Gov-Score governance index to test the relationship between bank governance and financial performance during the financial crisis of 2007–2008.[81] However, the present analysis uses two third-party ratings popular with professional investors: Sustainalytics and Bloomberg. Ultimately, the results are not inconsistent with those of Peni and Vèahèamaa. Although they found some evidence that governance was negatively related to performance during the crisis, banks with better governance performed better immediately prior to the crisis and recovered more quickly from the financial crisis.[82]

Again, it is important to note that the Bloomberg rating is not meant to be a ranking of governance quality but rather the extent of disclosure of governance-related data. Nevertheless, it has a statistically significant relationship to a smaller amount of fines in the ex ante analysis of total firm fines and a more muted market reaction in the ex post analysis of adjusted CARs after the announcement of fines. The evidence in this section highlights the importance of disclosure allowing markets to monitor firm behavior and punish transgressions. Thus, it is important to recognize that markets play a vital role in the cultivation and maintenance of reputation and trust between economic actors—a crucial part of the *Trust Triangle* of Dupont and Karpoff.[83]

5. Cost of Capital Analysis

Finally, this study considers the effects of fines and governance on costs of capital. The analysis examines the most statistically significant governance variables from the prior analyses and examines the resulting relationship with firms' cost of debt and firms' cost of equity. The results are consistent with the relationships found in the previous analysis: firms with better governance enjoy

81. *See* Peni & Vèahèamaa, *supra* note 41, at 22 (discussing the Gov-Score governance index).

82. *Id.* at 32–33.

83. Quentin Dupont & Jonathan M. Karpoff, *The Trust Triangle: Laws, Reputation, and Culture in Empirical Finance Research*, 163 J. BUS. ETHICS 217, 217 (2020).

lower costs of capital even with the same level of fines. This applies to both cost of debt and cost of equity. The results are more significant on cost of debt, where the results indicate that penalties are a strong predictor of higher cost of debt[84] and that better governance can help to mitigate this impact. Although not as large in magnitude or as statistically significant, an important finding of this study shows the beneficial impact of governance on cost of equity when controlling for the level of fines.

## V
## CONCLUSION

Due to the combined effect of deregulation and self-regulation, financial institutions have acquired the role of enforcement partners with the U.S. government in the financial regulatory system. To the extent these institutions are motivated to engage in risk-taking and noncompliance (and accordingly, fiscal corruption), the viability of this regulatory structure is compromised. This empirical study of how various factors can shape financial institutions' compliance and how penalties may impact compliance decisions suggests that curbing fiscal corruption by these quasi-governmental actors remains a complex and challenging mission.

This article examines how governance can mitigate market reactions and reputational costs incurred by firms and explores the effects of governance on the risk-taking behavior of financial institutions. The analysis provides evidence on the market reaction to the FinCEN leaks and the announcement of regulatory penalties for financial and banking-related offenses. Then, regressions are made on the abnormal returns in order to examine the mitigating effect governance has on a firm's market reaction to the fine announcements. In order to match this ex post analysis, a further analysis considers the ex ante influence of governance on a firm's risk-taking behavior, as measured by the total annual fines levied against the firm. Finally, the impact of fines on a firm's cost of capital is analyzed while also considering the mitigating role of governance.

This article contributes to the growing literature on the reputational effects of penalties by more closely examining the relationship to corporate governance and ownership characteristics in order to determine whether governance can lessen the market reactions and reputational losses that firms suffer. The prior literature has largely focused on examining ex post effects of fines on reputational costs and increased financing costs. This article expands on this literature by also considering the ex ante relationship with governance and ownership to examine

84. This is consistent with the reputational effects on borrowing costs found by Graham, Li & Qiu, *supra* note 20 (finding that reputational effects may influence the terms on which investors, customers, and suppliers do business with the firm); Chava, Huang & Johnson, *supra* note 20 (finding that misreporting firms pay significantly greater loan spreads for at least six years post-restatement); Gu, Hasan & Lu, *supra* note 33 (showing that public debt holders, even in an underdeveloped capital market outside the United States, care about firm reputation and tighten bond terms following revised beliefs about firms).

the extent to which corporate governance might discourage risk-taking behavior in regard to regulatory risk and might help to foster a more cognizant and cautious environment within firms which is more cognizant and cautious with respect to regulatory requirements. Finally, this article extends the analysis by explicitly considering effects on both cost of capital and cost of debt.

Similarly, this work contributes to the banking literature, which has previously focused on the financial and corporate governance drivers of bank failures and bank financial performance. To determine the effect of corporate governance and ownership characteristics on firm behavior, imposed penalties and the reputational impacts via the market reaction to fines for financial related offenses and the connection with firm cost of capital are analyzed. In this respect, this work complements the literature by using both ex ante and ex post perspectives. Furthermore, the dataset used is focused on the period after the financial crisis of 2007–2008, which is important due to the changing dynamics of the banking sector. Large institutional investors have increased their holdings significantly since 2008.[85] This has resulted in significant common ownership, with a small subset of very large institutional investors controlling large shareholdings across many industries. Azar, Raina, and Schmalz have found that this trend has resulted in decreased competition in the U.S. banking sector.[86] Additionally, the financial crisis of 2007–2008 put risk-taking by financial institutions in the spotlight and therefore attached greater reputational risk to large institutional investors in financial institutions involved in excessive risk-taking. This work is, in this regard, an update as well as an extension of the earlier bank literature examining corporate governance of banks.

In all, this study also helps to uncover important aspects of what Dupont and Karpoff refer to as the *Trust Triangle*, which illustrates how, in addition to legal and regulatory frameworks and cultural norms and values, markets also play a significant role in cultivating trust in economic activities.[87] The market does this by punishing economic actors who violate trust and rewarding those with positive reputations. This study illustrates how market reactions punish firms more when they have poor governance and how firms with good governance promote more trust in economic transactions. Such market-oriented mechanisms are a hallmark of the *Trust Triangle*, as they work together with regulations and culture to facilitate an environment of trust in economic transactions.

85. *See* Fichtner, Heemskerk & Garcia-Bernardo, *supra* note 78.
86. *See* Azar, Raina & Schmalz, *supra* note 43.
87. Dupont & Karpoff, *supra* note 83, at 234.

## APPENDIX

**Table 1—Variable Definitions**
This table provides definitions of the variables used in the data analyses.

| Variable | Definition |
|---|---|
| institutional_holdings | This is the percentage of a company's shares which are owned by institutional investors. Institutional holdings data is sourced from Refinitiv (formerly Thomson-Reuters) Institutional Holdings database and is drawn from 13F filings with the SEC. Any asset manager with at least USD 100 million in assets under management is required to disclose the securities it manages in 13F filings with the SEC. |
| blockhldrs_holdings | This is the percentage of a company's shares held by institutional blockholders (that is institutional investors with at least a 5% ownership stake). Institutional holdings data is calculated from data sourced from the Refinitiv Institutional Holdings database which draws from 13F filings with the SEC. |
| top5_holdings | This is the percentage of a company's shares held by the five largest institutional investors combined. Institutional holdings data is calculated from data sourced from Refinitiv which draws from 13F filings with the SEC. |
| insider_holdings | This variable is used to measure the shareholdings of insiders. Specifically, it is the shares held by executives and non-employee directors.<br>This corresponds to the sum of the Bloomberg fields: ("SHS_HLD_BY_N_EMP_DIR_AS_%_OF_OUT" + "SHS_HLD_BY_EXECS_AS_%_OF_OUTSTDG")/100 |
| log(assets) | The natural logarithm of a company's assets is used in order to control for relative size in the analyses. This corresponds to the natural logarithm of the Bloomberg field "BS_TOT_ASSET". |
| CEO duality | This is a dummy variable which indicates whether the company's Chief Executive Officer is also Chairman of the Board. Bloomberg field: "CEO_DUALITY" |
| log(board meetings per year) | This field is calculated as the natural logarithm of the total number of corporate board meetings held in the past year. |

| | |
|---|---|
| | This is calculated by taking the natural logarithm of the Bloomberg field "BOARD_MEETINGS_PER_YR" |
| log(board_size) | This variable is the natural logarithm of the number of full-time directors on the company's board. It is calculated by taking the natural logarithm of the Bloomberg field "BOARD_SIZE" |
| Board meetings attendance | This is the average ratio of board members in attendance at board meetings during the year. It corresponds to the Bloomberg field "BOARD_MEETING_ATTENDANCE_PCT" divided by 100 for ease of comparison in regression results. |
| % independent directors | This is the percentage of total directors who are identified as independent. It is calculated as the quotient of the Bloomberg fields "INDEPENDENT_DIRECTORS" / "BOARD_SIZE". |
| Total exec comp to revenues | This field is the ratio of the total value of all types of compensation paid to company executives to firm revenues. It is calculated as the quotient of the Bloomberg fields "TOT_COMPENSATION_AW_TO_EXECS" / "SALES_REV_TURN". |
| Percent options comp | This is the ratio of the total value of options compensation awarded to executives to the total value of all compensation paid to executives. It is calculated as the quotient of the Bloomberg fields "TOT_OPTION_AWARDS_GIVEN_TO_EXECS" / "TOT_COMPENSATION_AW_TO_EXECS" |
| Percent stock comp | This is the ratio of the total value of stock compensation awarded to executives to the total value of all compensation paid to executives. It is calculated as the quotient of the Bloomberg fields "TOT_STK_AWARDS_GIVEN_TO_EXECS" / "TOT_COMPENSATION_AW_TO_EXECS" |
| Percent cash bonuses | This is the ratio of the cash bonuses paid to executives to the total value of all compensation paid to executives. It is calculated as the quotient of the Bloomberg fields "TOTAL_BONUSES_PAID_TO_EXECUTIVES" / "TOT_COMPENSATION_AW_TO_EXECS" |
| Percent total variable comp | This is the ratio of all forms of variable compensation to the total value of all compensation paid to executives. It is calculated using the sum of the Bloomberg fields ("TOTAL_BONUSES_PAID_TO_EXECUTIVES" + |

| | |
|---|---|
| | "TOT_STK_AWARDS_GIVEN_TO_EXECS" + "TOT_OPTION_AWARDS_GIVEN_TO_EXECS") divided by "TOT_COMPENSATION_AW_TO_EXECS". |
| ROA | As a control variable for company profitability, return on total assets is used. ROA is calculated as: (Trailing 12M Net Income / Average Total Assets). Bloomberg field: "RETURN_ON_ASSET" |
| adjusted (-3) to (-1) CARs | This is the cumulative abnormal returns (CAR) on the firm's shares for the window from three days before until the day before a penalty announcement. It is then adjusted by adding the value of the fine divided by the firm's market capitalization from the day before the penalty announcement.<br>Penalties data is sourced from the Violation Tracker database maintained by the Corporate Research Project.<br>Data on market capitalization is sourced from the Bloomberg filed: "HISTORICAL_MARKET_CAP". |
| adjusted (0) to (3) CARs | This is the cumulative abnormal returns (CAR) on the firm's shares for the window from the day of a penalty announcement until three days after the penalty announcement. It is then adjusted by adding the value of the fine divided by the firm's market capitalization from the day before the penalty announcement.<br>Penalties data is sourced from the Violation Tracker database maintained by the Corporate Research Project.<br>Data on market capitalization is sourced from the Bloomberg filed: "HISTORICAL_MARKET_CAP". |
| Tier1_cap_ratio | This variable represents the ratio of Tier 1 capital to risk-weighted assets.<br>Bloomberg field: "BS_TIER1_CAP_RATIO". |
| NPL_to_total Loans | This is the ratio of gross nonperforming loans, which are loans in default or close to default and do not accrue interest, to Total Loans, which includes commercial loans, consumer loans and other loans.<br>This corresponds to the quotient of the Bloomberg fields: "BS_NON_PERFORM_LOANS"/"BS_TOT_LOAN" |
| Bloomberg_score | This is a proprietary Bloomberg score based on the extent of a company's governance-related disclosures as part of ESG data. The score ranges from 0.1 for companies that disclose a minimum amount of ESG data related to governance to 100 for those that disclose every data point |

| | |
|---|---|
| | collected by Bloomberg related to the governance component of ESG. Bloomberg tailors the score to particular industries. In this way, each company is only evaluated in terms of the data that is relevant to its industry sector. This score measures the amount of governance data a company reports publicly and does not measure the company's performance on any data point. For ease of comparison in the regressions, this score is divided by 100. This corresponds to the quotient of the Bloomberg field: "GOVNCE_DISCLOSURE_SCORE" /100. |
| Sustainalytics_score | Sustainalytics assigns a rank for the company's management of its governance activities in relation to industry peers. Scores range from 0 to 100. For ease of comparison in the regressions, this score is divided by 100. This corresponds to the quotient of the Bloomberg field: "SUSTAINALYTICS_GOVERNANCE_PCT"/100. |
| Tobins Q | Tobin's Q is used to control for the level of a firm's intangible assets. It is the ratio of the market value of a firm to the replacement cost of the firm's assets. The ratio is computed by Bloomberg as: (Market Cap + Total Liabilities + Preferred Equity + Minority Interest) / Total Assets. Bloomberg field: "TOBIN_Q_RATIO" |
| Leverage | In order to control for leverage, the ratio of firm debt to total assets is calculated. This corresponds to the quotient of the Bloomberg fields "SHORT_AND_LONG_TERM_DEBT" / "BS_TOT_ASSET". |
| penalties_to_revenues | This field represents the sum of all penalties levied during the year divided by gross revenues from all operating activities.<br>Penalties data is sourced from the Violation Tracker database maintained by the Corporate Research Project.<br>The value for revenues is sourced from the Bloomberg field: “SALES_REV_TURN”. |
| Industry | In the regressions, industry group dummy variables based on the four-digit GICS industry group codes are used. Bloomberg field: “GICS_INDUSTRY_GROUP”. |
| cost of debt | This field is sourced directly from Bloomberg. It measures the after-tax weighted average cost of debt for the firm’s debt securities as a spread over the risk free rate |

| | |
|---|---|
| | (the country's long-term bond rate (10-year)); it is calculated using government bond rates of corresponding maturities, a debt adjustment factor, the proportions of short and long term debt to total debt, and the firm's effective tax rate. It corresponds to the Bloomberg field: "WACC_COST_DEBT" |
| cost of equity | This field is sourced directly from Bloomberg. It represents the return over the risk-free rate demanded by equity investors in the firm. It is derived using the Capital Asset Pricing Model (CAPM). The value for the risk-free rate is the country's long-term bond rate (10-year). It corresponds to the Bloomberg field: "WACC_COST_EQUITY" |

**Table 2—Summary Statistics of SAR Data**

This table reports summary statistics of SAR data. Panel A shows aggregate yearly SAR volume published by FinCEN. Panel B presents summary statistics on the SARs released by the ICIJ as part of the FinCEN leaks.

A. Summary SARs data published by FinCEN

| Year | Total SAR filings submitted to FinCEN |
|---|---|
| 2014 | 3,831,748 |
| 2015 | 4,100,105 |
| 2016 | 4,550,538 |
| 2017 | 4,477,514 |
| 2018 | 4,579,794 |
| 2019 | 4,942,512 |
| 2020 | 5,576,559 |
| 2021 | 6,985,542 |

B. Summary statistics of SARs released by ICIJ as part of the FinCEN leaks

| Year | Number of SARs released by FinCEN leaks | total USD of transactions covered by SARs | average USD transaction size per SAR |
|---|---|---|---|
| 2004 | 174 | 54,297,238 | 312,053 |
| 2005 | 31 | 29,211,844 | 942,318 |
| 2006 | 29 | 91,271,500 | 3,147,293 |
| 2007 | 646 | 1,430,334,818 | 2,214,141 |
| 2008 | 754 | 1,468,190,273 | 1,947,202 |
| 2009 | 354 | 218,842,377 | 618,199 |
| 2010 | 533 | 1,937,899,624 | 3,635,834 |
| 2011 | 1239 | 4,271,989,095 | 3,447,933 |
| 2012 | 2396 | 2,566,323,116 | 1,071,086 |
| 2013 | 4495 | 7,875,959,970 | 1,752,160 |
| 2014 | 3159 | 6,245,142,289 | 1,976,936 |
| 2015 | 2511 | 3,747,015,623 | 1,492,240 |
| 2016 | 1827 | 5,317,998,335 | 2,910,782 |
| 2017 | 92 | 420,797,312 | 4,573,884 |

**Table 3—Summary Statistics of Regulatory Penalties Data**

This table shows summary statistics of the regulatory fines in the dataset broken-down by year.

| year | total amount of fines (in USD millions) | number of fines | average size per fine (in USD millions) | Average size of penalty as a percentage of market capitalization |
|---|---|---|---|---|
| 2007 | 262.72 | 29 | 9.06 | 0.08% |
| 2008 | 21,168.00 | 31 | 682.84 | 1.04% |
| 2009 | 3,285.15 | 50 | 65.70 | 0.26% |
| 2010 | 5,914.94 | 44 | 134.43 | 0.58% |
| 2011 | 4,317.70 | 41 | 105.31 | 0.22% |
| 2012 | 28,650.94 | 50 | 573.02 | 1.85% |
| 2013 | 37,231.50 | 58 | 641.92 | 1.00% |
| 2014 | 41,553.70 | 57 | 729.01 | 0.60% |
| 2015 | 3,309.35 | 77 | 42.98 | 0.17% |
| 2016 | 9,641.84 | 54 | 178.55 | 0.42% |
| 2017 | 1,173.19 | 46 | 25.50 | 1.20% |

**Table 4—Univariate Statistics for All Variables**

This table presents univariate statistics for all variables used in the analyses with the exception of year and industry dummy variables (n=537 observations).

| Variable | Mean | Minimum | Maximum | Std. Dev. |
|---|---|---|---|---|
| Bloomberg_score | 0.6092 | 0.3036 | 0.8750 | 0.1060 |
| Sustainalytics_score | 0.4902 | 0.1166 | 0.9749 | 0.1903 |
| institutional_holdings | 0.6810 | 0.0001 | 0.9935 | 0.1719 |
| blockhldrs_holdings | 0.1253 | 0.0000 | 0.4691 | 0.1099 |
| top5_holdings | 0.2417 | 0.0001 | 0.5036 | 0.0817 |
| insider_holdings | 0.0099 | 0.0000 | 0.2366 | 0.0238 |
| log(board_size) | 2.5208 | 1.3863 | 3.0445 | 0.2318 |
| % independent directors | 0.8397 | 0.3750 | 0.9412 | 0.1018 |
| log(board meetings per year) | 2.4572 | 1.3863 | 3.5264 | 0.4585 |
| Board meetings attendance | 0.7839 | 0.7400 | 1.0000 | 0.0758 |
| CEO duality | 0.6673 | 0.0000 | 1.0000 | 0.4716 |
| Total exec comp to revenues | 0.0121 | 0.0007 | 0.0313 | 0.1154 |
| Percent stock comp | 0.5067 | 0.0000 | 0.8009 | 0.1570 |
| Percent options comp | 0.0171 | 0.0000 | 0.3182 | 0.0458 |
| Percent total variable comp | 0.6893 | 0.0557 | 0.9547 | 0.2217 |
| Percent cash bonuses | 0.1655 | 0.0000 | 0.7095 | 0.1573 |
| adjusted (-3) to (-1) CARs | -0.0004 | -0.2510 | 0.2200 | 0.0375 |
| adjusted (0) to (3) CARs | -0.0047 | -0.4040 | 0.1200 | 0.0427 |
| cost of debt | 2.0266 | 0.3214 | 5.2789 | 0.8943 |
| cost of equity | 12.1230 | 8.2514 | 18.8280 | 2.4187 |
| penalties_to_revenues | 0.0147 | 0.0000 | 0.0936 | 0.0400 |
| log(assets) | 12.2980 | 5.8256 | 14.7610 | 2.3539 |
| ROA | 0.0115 | -0.0067 | 0.0410 | 0.0284 |
| Tobins Q | 1.1013 | 0.9460 | 1.5640 | 0.4274 |
| leverage | 0.2732 | 0.0000 | 0.6134 | 0.1781 |
| Tier1_cap_ratio | 0.1367 | 0.0831 | 0.2060 | 0.0684 |
| NPL_to_total Loans | 0.0162 | 0.0000 | 0.0377 | 0.0145 |

**Table 5—Cumulative Abnormal Return (CARs) Statistics**

This table presents summary statistics of the CARs from the FinCEN SARs leaks (Panel A) and bank fine announcements (Panel B) for selected event windows. The CARs from the bank fine announcements (Panel B) are adjusted for the size of the fine as a percent of pre-event market capitalization. Column 1 provides the mean CAR for all firms; column 2 reports the t-statistic of the test of the null hypothesis that the mean CAR is equal to zero; column 3 displays the median CAR; column 4 shows the proportion of CARs less than zero; and column 5 shows the results of the nonparametric Wilcoxon signed-ranks test of the proportion of CARs less than zero being equal to 0.50. Statistical significance is denoted at the *10%, **5%, and ***1% levels.

Panel A. FinCEN Leaks CARs

| event window | mean CAR | t-statistic | median CAR | proportion negative CARs | sign test |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| [-30, 30] | 0.201379*** | 10.23 | 0.188790 | 0.09*** | -5.99 |
| [-10, 10] | 0.040379*** | 3.68 | 0.046343 | 0.29*** | -2.99 |
| [-5, 5] | -0.020698*** | -2.66 | -0.010431 | 0.65** | 2.18 |
| [-3, 3] | -0.002832 | -0.50 | 0.011481 | 0.35** | -2.17 |
| [-1, 1] | -0.038521*** | -7.75 | -0.036096 | 0.91*** | 5.99 |
| [-3, -1] | 0.027722*** | 7.51 | 0.028071 | 0.11*** | -5.72 |
| [0, 1] | -0.042977*** | -9.29 | -0.046613 | 0.94*** | 6.53 |
| [0, 3] | -0.024890*** | -5.80 | -0.026266 | 0.79*** | 4.35 |
| [0, 5] | -0.026070*** | -4.70 | -0.026280 | 0.81*** | 4.62 |
| [0, 10] | -0.002965 | -0.40 | 0.009039 | 0.43 | -1.08 |
| [0, 30] | 0.123774*** | 8.45 | 0.115520 | 0.12*** | -5.44 |

* significant at the 10 percent level; ** significant at the 5 percent level; *** significant at the 1 percent level

Panel B. Financial Fines adj. CARs

| event window | mean adj. CAR | t-statistic | median adj. CAR | proportion negative adj. CARs | sign test |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| [-30, 30] | 0.009276 | 0.92 | 0.005336 | 0.48 | -0.85 |
| [-10, 10] | 0.002230 | 0.42 | -0.003691 | 0.53 | 1.19 |
| [-5, 5] | 0.003199 | 0.87 | 0.000858 | 0.49 | -0.34 |
| [-3, 3] | -0.005058** | -2.11 | -0.00125 | 0.51 | 0.91 |
| [-1, 1] | 0.006857** | 2.73 | 0.002685 | 0.46* | -1.87 |
| [-3, -1] | -0.000400 | -0.25 | -0.000793 | 0.52 | 1.08 |
| [0, 1] | 0.007349*** | 3.39 | 0.00127 | 0.51 | 0.76 |
| [0, 3] | -0.004657*** | -2.51 | -0.00207 | 0.54** | 2.04 |
| [0, 5] | 0.005599** | 2.07 | 0.003216 | 0.45* | -1.95 |
| [0, 10] | -0.001562 | -0.50 | 0.000823 | 0.49 | -0.34 |
| [0, 30] | 0.011385* | 1.86 | 0.006252 | 0.46* | -1.87 |

* significant at the 10 percent level; ** significant at the 5 percent level; *** significant at the 1 percent level

**Table 6—Accounting data and CARs**

This table reports the results of regressions exclusively of accounting data on the adjusted Cumulative Abnormal Returns ("CARs") before (Panel A) and after (Panel B) the announcement of a fine. The CARs are adjusted by adding the amount of the fine as a proportion of the firm's market capitalization on the day prior to the announcement of the fine (day t=-1). The dependent variable in Panel A is the adjusted CARs for the pre-announcement window (day t=-3 to day t=-1), and the dependent variable in Panel B is the adjusted CARs for the post-announcement window (day t=0 to day t=3). Model 1 includes only the accounting variables used as controls in all other regressions on CARs in subsequent tables. Model 2 repeats this regression for the subset of companies for which data on the firm's tier one capital ratio and ratio of non-performing loans to total loans are available. Models 3–5 show the results of regressions including: only the tier one capital ratio (Model 3); only the ratio of non-performing loans to total loans (Model 4); and both the tier one capital ratio and ratio of non-performing loans to total loans (Model 5). All independent variables are lagged by one year. All models use dummy variables to control for year effects and industry group effects. Standard errors appear in parentheses below coefficients, and statistical significance is denoted at the *10%, **5%, and ***1% levels. Definitions of all variables along with relevant calculations appear in Table 1.

A. Dependent variable: adjusted (-3) to (-1) CARs

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| const | 0.031143 | 0.027073 | 0.005114 | 0.031279 | 0.01718 |
| | (0.020387) | (0.041102) | (0.035827) | (0.041179) | (0.039946) |
| log(assets) | -0.002703** | -0.003476** | -0.002649 | -0.002592 | -0.002806 |
| | (0.001110) | (0.001683) | (0.001714) | (0.001810) | (0.001921) |
| leverage | 0.030601** | 0.041515 | 0.013871 | 0.020585 | 0.0239 |
| | (0.013768) | (0.025786) | (0.025207) | (0.030242) | (0.033775) |
| ROA | -0.197258* | -0.742241** | -0.670648** | -0.607948* | -0.486976 |
| | (0.108336) | (0.341099) | (0.320198) | (0.355566) | (0.357460) |
| Tobins Q | 0.009753 | 0.013168 | 0.018277 | 0.000932 | 0.010124 |
| | (0.008197) | (0.029972) | (0.029990) | (0.031340) | (0.034358) |
| Tier1_cap_ratio | | | -0.00468 | | -0.027281 |
| | | | (0.053003) | | (0.079055) |
| NPL_to_total Loans | | | | 0.414523 | 0.858689** |
| | | | | (0.313860) | (0.399770) |
| year effects | yes | yes | yes | yes | yes |
| industry group effects | yes | yes | yes | yes | yes |
| n | 537 | 348 | 348 | 348 | 348 |
| Adj. R2 | 0.028052 | 0.08644 | 0.03617 | 0.047301 | 0.037244 |

Standard errors appear in parentheses below coefficients

* significant at the 10 percent level; ** significant at the 5 percent level; *** significant at the 1 percent level

B. Dependent variable: adjusted (0) to (3) CARs

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| const | -0.036090* | -0.086006* | -0.099300** | -0.093336** | -0.098620** |
| | (0.021663) | (0.046988) | (0.043285) | (0.046912) | (0.048098) |
| log(assets) | -0.002789** | 0.004148** | 0.004238** | 0.002607 | 0.004114* |
| | (0.001273) | (0.001924) | (0.002071) | (0.002062) | (0.002313) |
| leverage | 0.000645 | -0.00183 | -0.016677 | 0.034644 | 0.004795 |
| | (0.014629) | (0.029479) | (0.030455) | (0.034452) | (0.040668) |
| ROA | -0.254900** | -0.502765 | -0.58767 | -0.736800* | -0.879172** |
| | (0.124279) | (0.389944) | (0.386856) | (0.405063) | (0.430413) |
| Tobins Q | 0.000223 | 0.047374 | 0.052608 | 0.068698* | 0.051725 |
| | (0.008711) | (0.034264) | (0.036234) | (0.035702) | (0.041370) |
| Tier1_cap_ratio | | | 0.011555 | | 0.06525 |
| | | | (0.064038) | | (0.095189) |
| NPL_to_total Loans | | | | -0.722394** | -1.248265*** |
| | | | | (0.357550) | (0.481357) |
| year effects | yes | yes | yes | yes | yes |
| industry group effects | yes | yes | yes | yes | yes |
| n | 537 | 348 | 348 | 348 | 348 |
| Adj. R2 | 0.020667 | 0.050764 | 0.007279 | 0.017002 | 0.022938 |

Standard errors appear in parentheses below coefficients

* significant at the 10 percent level; ** significant at the 5 percent level; *** significant at the 1 percent level

**Table 7—Ownership Characteristics and CARs**

This table reports the results of regressions of firm ownership characteristics on the adjusted Cumulative Abnormal Returns ("CARs") before (Panel A) and after (Panel B) the announcement of a fine. The CARs are adjusted by adding the amount of the fine as a proportion of the firm's market capitalization on the day prior to the announcement of the fine (day t=-1). The dependent variable in Panel A is the adjusted CARs for the pre-announcement window (day t=-3 to day t=-1), and the dependent variable in Panel B is the adjusted CARs for the post-announcement window (day t=0 to day t=3). Models 1–4 regress each ownership characteristic individually. Models 5 and 6 demonstrate the interaction effects among the three measures of institutional holdings (total percent insider holdings; percentage held by institutional blockholders; and percentage held by the five largest institutional investors). Model 7 is a combined model with all ownership characteristics together. All independent variables are lagged by one year. All models use dummy variables to control for year effects and industry group effects. Standard errors appear in parentheses below coefficients, and statistical significance is denoted at the *10%, **5%, and ***1% levels. Definitions of all variables along with relevant calculations appear in Table 1.

A. Dependent variable: adjusted (-3) to (-1) CARs

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| const | 0.048391** | 0.048749** | 0.035771 | 0.047485* | 0.056412** | 0.056405** | 0.071186** |
| | (0.022727) | (0.023656) | (0.026404) | (0.027313) | (0.027810) | (0.027857) | (0.030798) |
| log(assets) | -0.003764*** | -0.001453 | -0.002026* | -0.001975* | -0.001716 | -0.001712 | -0.002479* |
| | (0.001269) | (0.001156) | (0.001161) | (0.001154) | (0.001163) | (0.001242) | (0.001400) |
| leverage | 0.030912** | 0.031088** | 0.033221** | 0.034791** | 0.039406*** | 0.039370*** | 0.037377** |
| | (0.014234) | (0.013464) | (0.013825) | (0.013763) | (0.014028) | (0.014851) | (0.015391) |
| ROA | -0.193655* | -0.167063 | -0.325153* | -0.326428* | -0.292764 | -0.292655 | -0.237898 |
| | (0.109690) | (0.117029) | (0.188234) | (0.187098) | (0.187896) | (0.188670) | (0.197043) |
| Tobins Q | 0.008662 | 0.005507 | 0.012087 | 0.011915 | 0.009382 | 0.009386 | 0.008981 |
| | (0.008306) | (0.010439) | (0.014015) | (0.013939) | (0.014000) | (0.014023) | (0.014321) |
| insider_holdings | -0.449132* | | | | | | -0.129629 |
| | (0.271591) | | | | | | (0.111976) |
| institutional_holdings | | 0.022584* | | | | -0.000149 | -0.007626 |
| | | (0.013467) | | | | (0.019901) | (0.021286) |
| blockhldrs_holdings | | | -0.022369 | | 0.088911 | 0.088753 | 0.069691 |
| | | | (0.024382) | | (0.054718) | (0.058690) | (0.061495) |
| top5_holdings | | | | 0.055336* | 0.154498** | 0.154102* | 0.131584 |
| | | | | (0.030254) | (0.068090) | (0.086222) | (0.090057) |
| year effects | yes | yes | yes | yes | yes | yes | yes |
| industry group effects | yes | yes | yes | yes | yes | yes | yes |
| n | 537 | 537 | 537 | 537 | 537 | 537 | 537 |
| Adj. R2 | 0.031513 | 0.021612 | 0.017956 | 0.023502 | 0.027129 | 0.024908 | 0.023569 |

Standard errors appear in parentheses below coefficients

* significant at the 10 percent level; ** significant at the 5 percent level; *** significant at the 1 percent level

B. Dependent variable: adjusted (0) to (3) CARs

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| const | 0.010369 | 0.027063 | 0.018199 | 0.029831 | 0.03896 | 0.038532 | 0.043518 |
| | (0.027762) | (0.033702) | (0.033413) | (0.034602) | (0.035269) | (0.035323) | (0.038889) |
| log(assets) | -0.002890* | -0.001745 | -0.002468* | -0.002422* | -0.002156 | -0.001954 | -0.002275 |
| | (0.001495) | (0.001521) | (0.001469) | (0.001462) | (0.001475) | (0.001575) | (0.001767) |
| leverage | 0.023021 | 0.021583 | 0.025353 | 0.026854 | 0.031574* | 0.029305 | 0.031386 |
| | (0.016464) | (0.017665) | (0.017495) | (0.017436) | (0.017790) | (0.018831) | (0.019435) |
| ROA | -0.470878*** | -0.469376** | -0.502642** | -0.504493** | -0.470066** | -0.463247* | -0.464268* |
| | (0.171972) | (0.236878) | (0.238206) | (0.237031) | (0.238291) | (0.239235) | (0.248811) |
| Tobins Q | 0.024437** | 0.023962 | 0.02455 | 0.02442 | 0.02183 | 0.022029 | 0.022415 |
| | (0.011757) | (0.017643) | (0.017736) | (0.017659) | (0.017755) | (0.017781) | (0.018083) |
| insider_holdings | 0.100733 | | | | | | 0.049363 |
| | (0.149100) | | | | | | (0.145423) |
| institutional_holdings | | 0.050377*** | | | | -0.030507 | -0.027167 |
| | | (0.018268) | | | | (0.026344) | (0.027644) |
| blockhldrs_holdings | | | 0.020312 | | -0.180492** | -0.148207* | -0.149590* |
| | | | (0.032485) | | (0.072545) | (0.077692) | (0.079864) |
| top5_holdings | | | | 0.077490* | 0.278791*** | 0.197858* | 0.209474* |
| | | | | (0.040272) | (0.090272) | (0.114138) | (0.116957) |
| year effects | yes | yes | yes | yes | yes | yes | yes |
| industry group effects | yes | yes | yes | yes | yes | yes | yes |
| n | 537 | 537 | 537 | 537 | 537 | 537 | 537 |
| Adj. R2 | 0.040789 | 0.066129 | 0.050832 | 0.057916 | 0.068899 | 0.069621 | 0.06218 |

Standard errors appear in parentheses below coefficients

* significant at the 10 percent level; ** significant at the 5 percent level; *** significant at the 1 percent level

**Table 8—Governance rankings and CARs**

This table reports the results of regressions of third-party ratings of firm governance on the adjusted Cumulative Abnormal Returns ("CARs") before (Panel A) and after (Panel B) the announcement of a fine. The CARs are adjusted by adding the amount of the fine as a proportion of the firm's market capitalization on the day prior to the announcement of the fine (day t=-1). The dependent variable in Panel A is the adjusted CARs for the pre-announcement window (day t=-3 to day t=-1), and the dependent variable in Panel B is the adjusted CARs for the post-announcement window (day t=0 to day t=3). The Sustainalytics rating of firm governance quality and the Bloomberg rating of firm governance-related disclosure are used. Whereas the Sustainalytics rating aims to measure governance quality, the Bloomberg rating simply measures the quantity of governance-related data disclosed by the firm. Models 1–2 regress each rating individually, and Model 3 is a combined model with both characteristics together. All independent variables are lagged by one year. All models use dummy variables to control for year effects and industry group effects. Standard errors appear in parentheses below coefficients, and statistical significance is denoted at the *10%, **5%, and ***1% levels. Definitions of all variables along with relevant calculations appear in Table 1.

A. Dependent variable: adjusted (-3) to (-1) CARs

| | 1 | 2 | 3 |
|---|---|---|---|
| const | -0.003903 | -0.054035 | -0.053701 |
| | (0.021591) | (0.036056) | (0.036290) |
| log(assets) | -0.004092* | -0.005504*** | -0.004272* |
| | (0.002238) | (0.001988) | (0.002266) |
| leverage | 0.011704 | -0.008739 | -0.008821 |
| | (0.013956) | (0.014060) | (0.014107) |
| ROA | -0.749047** | -0.752838** | -0.832529** |
| | (0.328470) | (0.355869) | (0.362541) |
| Tobins Q | 0.005845 | 0.031239 | 0.031501 |
| | (0.008530) | (0.021252) | (0.021475) |
| Bloomberg Score | 0.028793 | | -0.003744 |
| | (0.033208) | | (0.041314) |
| Sustainalytics Score | | 0.052188** | 0.053869* |
| | | (0.023902) | (0.030278) |
| year effects | yes | yes | yes |
| industry group effects | yes | yes | yes |
| n | 537 | 537 | 537 |
| Adj. R2 | 0.072826 | 0.067952 | 0.06933 |

Standard errors appear in parentheses below coefficients

* significant at the 10 percent level; ** significant at the 5 percent level; *** significant at the 1 percent level

B. Dependent variable: adjusted (0) to (3) CARs

| | 1 | 2 | 3 |
|---|---|---|---|
| const | -0.057145** | -0.00992 | -0.022158 |
| | (0.023860) | (0.042494) | (0.048492) |
| log(assets) | 0.001733 | 0.000805 | -0.000643 |
| | (0.001746) | (0.002451) | (0.002937) |
| leverage | 0.037127* | 0.037352* | 0.038676* |
| | (0.021593) | (0.020272) | (0.021742) |
| ROA | 0.127413 | -0.146334 | -0.28057 |
| | (0.121787) | (0.286043) | (0.334176) |
| Tobins Q | -0.005776 | 0.006784 | 0.01126 |
| | (0.009426) | (0.023903) | (0.028696) |
| Bloomberg Score | 0.076414** | | 0.024484** |
| | (0.036697) | | (0.011587) |
| Sustainalytics Score | | 0.002013 | 0.007944 |
| | | (0.018395) | (0.022752) |
| year effects | yes | yes | yes |
| industry group effects | yes | yes | yes |
| n | 537 | 537 | 537 |
| Adj. R2 | 0.009803 | 0.004174 | 0.00783 |

Standard errors appear in parentheses below coefficients

* significant at the 10 percent level; ** significant at the 5 percent level; *** significant at the 1 percent level

**Table 9—Board Characteristics and CARs**

This table reports the results of regressions of various board characteristics on the adjusted Cumulative Abnormal Returns ("CARs") before (Panel A) and after (Panel B) the announcement of a fine. The CARs are adjusted by adding the amount of the fine as a proportion of the firm's market capitalization on the day prior to the announcement of the fine (day t=-1). The dependent variable in Panel A is the adjusted CARs for the pre-announcement window (day t=-3 to day t=-1), and the dependent variable in Panel B is the adjusted CARs for the post-announcement window (day t=0 to day t=3). Models 1–5 regress each board characteristic individually, and Model 6 is a combined model with all characteristics together. All independent variables are lagged by one year. All models use dummy variables to control for year effects and industry group effects. Standard errors appear in parentheses below coefficients, and statistical significance is denoted at the *10%, **5%, and ***1% levels. Definitions of all variables along with relevant calculations appear in Table 1.

A. Dependent variable: adjusted (-3) to (-1) CARs

| | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| const | 0.033962 | 0.031001 | 0.033642 | 0.039706 | 0.062094** | 0.085631* |
| | (0.022260) | (0.024465) | (0.035243) | (0.031065) | (0.027731) | (0.047670) |
| log(assets) | -0.002928** | -0.002999** | -0.003205** | -0.002675* | -0.001847 | -0.001405 |
| | (0.001214) | (0.001290) | (0.001272) | (0.001373) | (0.001353) | (0.001758) |
| leverage | 0.027301* | 0.028929* | 0.032489** | 0.029118* | 0.024776* | 0.017549 |
| | (0.015015) | (0.016142) | (0.015589) | (0.015020) | (0.015029) | (0.018014) |
| ROA | -0.199635* | -0.205122* | -0.205466* | -0.209386* | -0.216152* | -0.228599* |
| | (0.117053) | (0.117506) | (0.121972) | (0.117654) | (0.117513) | (0.123690) |
| Tobins Q | 0.009193 | 0.009185 | 0.008151 | 0.009763 | 0.01104 | 0.011694 |
| | (0.009008) | (0.009184) | (0.009502) | (0.009050) | (0.009100) | (0.009758) |
| CEO duality | -0.000999 | | | | | 0.00089 |
| | (0.005097) | | | | | (0.005548) |
| log(board meetings per year) | | 0.001425 | | | | 0.002908 |
| | | (0.006649) | | | | (0.007114) |
| board meetings attendance | | | 0.006456 | | | 0.017167 |
| | | | (0.031694) | | | (0.032927) |
| log(board_size) | | | | -0.003921 | | -0.013961 |
| | | | | (0.012128) | | (0.013516) |
| % independent directors | | | | | -0.047261* | -0.062999** |
| | | | | | (0.026951) | (0.031039) |
| year effects | yes | yes | yes | yes | yes | yes |
| industry group effects | yes | yes | yes | yes | yes | yes |
| n | 537 | 537 | 537 | 537 | 537 | 537 |
| Adj. R2 | 0.026749 | 0.025743 | 0.024892 | 0.025891 | 0.031162 | 0.026141 |

Standard errors appear in parentheses below coefficients

* significant at the 10 percent level; ** significant at the 5 percent level; *** significant at the 1 percent level

B. Dependent variable: adjusted (0) to (3) CARs

| | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| const | -0.046877** | -0.049737* | -0.055696 | -0.051016 | -0.049674* | -0.096925* |
| | (0.022998) | (0.025541) | (0.037016) | (0.032443) | (0.029052) | (0.049701) |
| log(assets) | 0.004915*** | 0.003945*** | 0.004334*** | 0.004020*** | 0.003950*** | 0.004078** |
| | (0.001254) | (0.001346) | (0.001336) | (0.001434) | (0.001417) | (0.001833) |
| leverage | -0.001812 | -0.003177 | 0.00273 | 0.002363 | 0.002086 | 0.003003 |
| | (0.015512) | (0.016853) | (0.016374) | (0.015686) | (0.015745) | (0.018782) |
| ROA | 0.112376 | 0.132016 | 0.122763 | 0.131561 | 0.127906 | 0.117919 |
| | (0.120929) | (0.122676) | (0.128110) | (0.122873) | (0.123109) | (0.128959) |
| Tobins Q | -0.002909 | -0.003534 | -0.002671 | -0.003691 | -0.004092 | -0.003825 |
| | (0.009306) | (0.009588) | (0.009981) | (0.009451) | (0.009534) | (0.010174) |
| CEO duality | -0.013697*** | | | | | -0.015240*** |
| | (0.005266) | | | | | (0.005784) |
| log(board meetings per year) | | 0.004609 | | | | 0.000386 |
| | | (0.006941) | | | | (0.007417) |
| board meetings attendance | | | 0.015291 | | | 0.020876 |
| | | | (0.033289) | | | (0.034329) |
| log(board_size) | | | | 0.00453 | | 0.01011 |
| | | | | (0.012666) | | (0.014092) |
| % independent directors | | | | | 0.012091 | 0.021164 |
| | | | | | (0.028234) | (0.032362) |
| year effects | yes | yes | yes | yes | yes | yes |
| industry group effects | yes | yes | yes | yes | yes | yes |
| n | 537 | 537 | 537 | 537 | 537 | 537 |
| Adj. R2 | 0.038563 | 0.027259 | 0.0255 | 0.026882 | 0.026454 | 0.031177 |

Standard errors appear in parentheses below coefficients

* significant at the 10 percent level; ** significant at the 5 percent level; *** significant at the 1 percent level

**Table 10—Executive compensation and CARs**

This table reports the results of regressions of various executive compensation characteristics on the adjusted Cumulative Abnormal Returns ("CARs") before (Panel A) and after (Panel B) the announcement of a fine. The CARs are adjusted by adding the amount of the fine as a proportion of the firm's market capitalization on the day prior to the announcement of the fine (day t=-1). The dependent variable in Panel A is the adjusted CARs for the pre-announcement window (day t=-3 to day t=-1), and the dependent variable in Panel B is the adjusted CARs for the post-announcement window (day t=0 to day t=3). Models 1–5 regress each compensation characteristic individually, and Model 6 is a combined model considering the ratio of total executive compensation to revenues along with the ratio of variable compensation to total compensation. All independent variables are lagged by one year. All models use dummy variables to control for year effects and industry group effects. Standard errors appear in parentheses below coefficients, and statistical significance is denoted at the *10%, **5%, and ***1% levels. Definitions of all variables along with relevant calculations appear in Table 1.

A. Dependent variable: adjusted (-3) to (-1) CARs

| | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| const | 0.023773 | 0.028456 | 0.035233 | 0.031285 | 0.034762 | 0.027703 |
| | (0.022443) | (0.021004) | (0.021968) | (0.020466) | (0.021275) | (0.023438) |
| log(assets) | -0.002021 | -0.002716** | -0.003295** | -0.002726** | -0.003364** | -0.002726 |
| | (0.001343) | (0.001111) | (0.001619) | (0.001139) | (0.001564) | (0.001803) |
| leverage | 0.030746** | 0.032861** | 0.032016** | 0.030170** | 0.029832** | 0.029728** |
| | (0.013964) | (0.014404) | (0.014063) | (0.014564) | (0.013836) | (0.014081) |
| ROA | -0.184596* | -0.192134* | -0.191894* | -0.199194* | -0.203108* | -0.191756* |
| | (0.110112) | (0.108828) | (0.108939) | (0.110488) | (0.108842) | (0.110858) |
| Tobins Q | 0.008732 | 0.009675 | 0.008669 | 0.009898 | 0.009696 | 0.008795 |
| | (0.008379) | (0.008204) | (0.008483) | (0.008359) | (0.008203) | (0.008385) |
| total exec comp to revenues | 0.183371 | | | | | 0.17701 |
| | (0.186960) | | | | | (0.187394) |
| percent options comp | | 0.029604 | | | | |
| | | (0.055051) | | | | |
| percent stock comp | | | 0.010393 | | | |
| | | | (0.020695) | | | |
| percent cash bonuses | | | | 0.001447 | | |
| | | | | (0.015827) | | |
| percent total variable comp | | | | | 0.009017 | 0.009142 |
| | | | | | (0.015048) | (0.015602) |
| year effects | yes | yes | yes | yes | yes | yes |
| industry group effects | yes | yes | yes | yes | yes | yes |
| n | 537 | 537 | 537 | 537 | 537 | 537 |
| Adj. R2 | 0.026588 | 0.026722 | 0.026653 | 0.026195 | 0.026853 | 0.058322 |

Standard errors appear in parentheses below coefficients

* significant at the 10 percent level; ** significant at the 5 percent level; *** significant at the 1 percent level

B. Dependent variable: adjusted (0) to (3) CARs

| | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| const | -0.007187 | 0.016612 | 0.015541 | 0.017114 | 0.014674 | -0.011462 |
| | (0.025568) | (0.024101) | (0.025205) | (0.023475) | (0.024410) | (0.026702) |
| log(assets) | -0.000602 | -0.002795** | -0.002474 | -0.002692** | -0.002233 | 0.000165 |
| | (0.001530) | (0.001275) | (0.001858) | (0.001306) | (0.001795) | (0.002054) |
| leverage | 0.02454 | 0.024499 | 0.02281 | 0.025401 | 0.024212 | 0.025648 |
| | (0.015908) | (0.016528) | (0.016135) | (0.016706) | (0.015874) | (0.016042) |
| ROA | -0.235034* | -0.252783** | -0.257760** | -0.246648* | -0.249972** | -0.227247* |
| | (0.125443) | (0.124873) | (0.124994) | (0.126734) | (0.124879) | (0.126296) |
| Tobins Q | 0.011666 | 0.013857 | 0.014467 | 0.013268 | 0.013937 | 0.011598 |
| | (0.009546) | (0.009414) | (0.009733) | (0.009588) | (0.009412) | (0.009553) |
| total exec comp to revenues | 0.668919*** | | | | | 0.669209*** |
| | (0.239418) | | | | | (0.239621) |
| percent options comp | | 0.012229 | | | | |
| | | (0.063167) | | | | |
| percent stock comp | | | -0.005541 | | | |
| | | | (0.023745) | | | |
| percent cash bonuses | | | | -0.006167 | | |
| | | | | (0.018154) | | |
| percent total variable comp | | | | | -0.007594 | -0.009944 |
| | | | | | (0.017265) | (0.017775) |
| year effects | yes | yes | yes | yes | yes | yes |
| industry group effects | yes | yes | yes | yes | yes | yes |
| n | 537 | 537 | 537 | 537 | 537 | 537 |
| Adj. R2 | 0.030554 | 0.015274 | 0.015306 | 0.015422 | 0.01557 | 0.062104 |

Standard errors appear in parentheses below coefficients

* significant at the 10 percent level; ** significant at the 5 percent level; *** significant at the 1 percent level

**Table 11—Accounting data and regulatory penalties**

This table reports the results of regressions exclusively of accounting data on the total annual financial-related penalties imposed on a firm as a proportion of total annual firm revenues ("penalties to revenues"). Model 1 includes only the accounting variables used as controls in all other regressions on penalties to revenues in subsequent tables. Model 2 repeats this regression for the subset of companies for which data on the firm's tier one capital ratio and ratio of non-performing loans to total loans are available. Models 3–5 show the results of regressions including: only the tier 1 capital ratio (Model 3), only the ratio of non-performing loans to total loans (Model 4), and both the tier one capital ratio and ratio of non-performing loans to total loans (Model 5). All independent variables are lagged by one year. All models use dummy variables to control for year effects and industry group effects. Standard errors appear in parentheses below coefficients, and statistical significance is denoted at the *10%, **5%, and ***1% levels. Definitions of all variables along with relevant calculations appear in Table 1.

Generally, these results show that more leveraged firms and less profitable firms (in terms of ROA) tend to incur higher levels of penalties. Higher levels of intangible assets (as measured by Tobin's Q) appear to have only a minimal positive correlation with higher fines.

Dependent variable: penalties_to_reveneus

| | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| const | -0.020816 | -0.039642 | -0.058012** | -0.039484 | -0.047768* |
| | (0.019226) | (0.028826) | (0.026023) | (0.028919) | (0.028680) |
| Tobins Q | 0.016046* | 0.011944 | 0.015288 | 0.012941 | -0.003349 |
| | (0.008555) | (0.018908) | (0.018968) | (0.019191) | (0.023285) |
| leverage | 0.052611*** | 0.062532*** | 0.033856* | 0.062510*** | 0.064372** |
| | (0.012980) | (0.019450) | (0.019939) | (0.019510) | (0.027532) |
| ROA | -0.232608* | -0.377455* | -0.313077 | -0.399026* | -0.468905** |
| | (0.123338) | (0.215389) | (0.204075) | (0.225169) | (0.235931) |
| log(assets) | 0.000561 | 0.002363* | 0.002758** | 0.002267* | 0.002532* |
| | (0.001034) | (0.001286) | (0.001277) | (0.001321) | (0.001491) |
| Tier1_cap_ratio | | | 0.012684 | | 0.097937 |
| | | | (0.026368) | | (0.061267) |
| NPL_to_total Loans | | | | -0.103576 | -0.130227 |
| | | | | (0.304589) | (0.305137) |
| year effects | yes | yes | yes | yes | yes |
| industry group effects | yes | yes | yes | yes | yes |
| n | 279 | 156 | 156 | 156 | 156 |
| Adj. R2 | 0.067754 | 0.229457 | 0.114714 | 0.144528 | 0.14542 |

Standard errors appear in parentheses below coefficients

* significant at the 10 percent level; ** significant at the 5 percent level; *** significant at the 1 percent level

**Table 12—Ownership characteristics and regulatory penalties**

This table reports the results of regressions of firm ownership characteristics on the total annual financial-related penalties imposed on a firm as a proportion of total annual firm revenues ("penalties to revenues"). Models 1–4 regress each ownership characteristic individually. Models 5 and 6 demonstrate the interaction effects among the three measures of institutional holdings (total percent of insider holdings, percentage held by institutional blockholders, and percentage held by the five largest institutional investors). Model 7 is a combined model with all ownership characteristics together. All independent variables are lagged by one year. All models use dummy variables to control for year effects and industry group effects. Standard errors appear in parentheses below coefficients, and statistical significance is denoted at the *10%, **5%, and ***1% levels. Definitions of all variables along with relevant calculations appear in Table 1.

Dependent variable: penalties_to_reveneus

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| const | -0.021368 | -0.002775 | -0.006749 | 0.013735 | 0.025674 | 0.027592 | 0.016398 |
| | (0.022444) | (0.026961) | (0.027303) | (0.027732) | (0.027681) | (0.027841) | (0.029940) |
| Tobins Q | 0.018345** | 0.027125** | 0.027446** | 0.027005** | 0.023190* | 0.022452* | 0.024626* |
| | (0.009074) | (0.012708) | (0.012837) | (0.012568) | (0.012464) | (0.012520) | (0.012519) |
| leverage | 0.055739*** | 0.062193*** | 0.063649*** | 0.065665*** | 0.071502*** | 0.073506*** | 0.070297*** |
| | (0.014361) | (0.015481) | (0.015583) | (0.015276) | (0.015206) | (0.015476) | (0.015707) |
| ROA | -0.304469** | -0.352189** | -0.394902** | -0.390309** | -0.339061** | -0.345295** | -0.426536** |
| | (0.130481) | (0.169418) | (0.171222) | (0.167603) | (0.166226) | (0.166645) | (0.170881) |
| log(assets) | 0.000442 | 0.000857 | -0.000359 | -0.000139 | 0.000539 | 0.000192 | 0.000481 |
| | (0.001265) | (0.001348) | (0.001298) | (0.001270) | (0.001277) | (0.001366) | (0.001461) |
| insider_holdings | 0.07077 | | | | | | 0.042889 |
| | (0.086294) | | | | | | (0.095806) |
| institutional_holdings | | -0.035769** | | | | 0.014982 | 0.016265 |
| | | (0.014251) | | | | (0.020799) | (0.021907) |
| blockhldrs_holdings | | | -0.046206* | | 0.155734*** | 0.173244*** | 0.158314** |
| | | | (0.026913) | | (0.057867) | (0.062828) | (0.064888) |
| top5_holdings | | | | -0.108015*** | -0.280654*** | -0.324054*** | -0.297441*** |
| | | | | (0.032794) | (0.071827) | (0.093815) | (0.096819) |
| year effects | yes | yes | yes | yes | yes | yes | yes |
| industry group effects | yes | yes | yes | yes | yes | yes | yes |
| n | 279 | 279 | 279 | 279 | 279 | 279 | 279 |
| Adj. R2 | 0.085095 | 0.112483 | 0.098313 | 0.131015 | 0.156455 | 0.15448 | 0.150189 |

Standard errors appear in parentheses below coefficients

* significant at the 10 percent level; ** significant at the 5 percent level; *** significant at the 1 percent level

**Table 13—Governance rankings and regulatory penalties**

This table reports the results of regressions of third-party ratings of firm governance on the total annual financial-related penalties imposed on a firm as a proportion of total annual firm revenues ("penalties to revenues"). The Sustainalytics rating of firm governance quality and the Bloomberg rating of firm governance-related disclosure are used. Whereas the Sustainalytics rating aims to measure governance quality, the Bloomberg rating simply measures the quantity of governance-related data disclosed by the firm. Models 1–2 regress each rating individually, and Model 3 is a combined model with both characteristics together. All independent variables are lagged by one year. All models use dummy variables to control for year effects and industry group effects. Standard errors appear in parentheses below coefficients, and statistical significance is denoted at the *10%, **5%, and ***1% levels. Definitions of all variables along with relevant calculations appear in Table 1.

Dependent variable: penalties_to_reveneus

| | 1 | 2 | 3 |
|---|---|---|---|
| const | -0.031377 | -0.042626* | -0.053572 |
| | (0.036220) | (0.022181) | (0.037297) |
| Tobins Q | 0.048089** | 0.022005** | 0.053721*** |
| | (0.018492) | (0.009723) | (0.019442) |
| leverage | 0.043949*** | 0.051910*** | 0.037213** |
| | (0.015486) | (0.013945) | (0.015491) |
| ROA | -0.605815** | -0.343770** | -0.726332*** |
| | (0.233265) | (0.138415) | (0.227179) |
| log(assets) | -0.001777 | -0.000746 | -0.003265 |
| | (0.002131) | (0.001535) | (0.002496) |
| Bloomberg score | -0.027358* | | -0.033061** |
| | (0.015979) | | (0.016523) |
| Sustainalytics score | | 0.050469 | 0.051521 |
| | | (0.036323) | (0.043553) |
| year effects | yes | yes | yes |
| industry group effects | yes | yes | yes |
| n | 279 | 279 | 279 |
| Adj. R2 | 0.093238 | 0.082184 | 0.134366 |

Standard errors appear in parentheses below coefficients

* significant at the 10 percent level; ** significant at the 5 percent level; *** significant at the 1 percent level

**Table 14—Board Characteristics and Regulatory Penalties**

This table reports the results of regressions of board characteristics on the total annual financial-related penalties imposed on firm as a proportion of total annual firm revenues ("penalties to revenues"). Models 1–5 regress each board characteristic individually, and Model 6 is a combined model with all characteristics together. All independent variables are lagged by one year. All models use dummy variables to control for year effects and industry group effects. Standard errors appear in parentheses below coefficients, and statistical significance is denoted at the *10%, **5%, and ***1% levels. Definitions of all variables along with relevant calculations appear in Table 1.

Dependent variable: penalties_to_reveneus

| | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| const | -0.036119 | 0.008445 | -0.026054 | -0.022125 | -0.029469 | 0.008363 |
| | (0.029669) | (0.025372) | (0.022879) | (0.033374) | (0.021177) | (0.044543) |
| Tobins Q | 0.020704** | 0.024081** | 0.020938** | 0.021783** | 0.020411** | 0.025261** |
| | (0.010017) | (0.010021) | (0.010029) | (0.010120) | (0.009980) | (0.010252) |
| leverage | 0.058100*** | 0.049334*** | 0.057600*** | 0.057488*** | 0.053312*** | 0.048135*** |
| | (0.015043) | (0.014517) | (0.015340) | (0.014433) | (0.014493) | (0.016740) |
| ROA | -0.298748** | -0.332584** | -0.301034** | -0.311814** | -0.289259** | -0.345298** |
| | (0.142619) | (0.142126) | (0.142961) | (0.143795) | (0.142241) | (0.145172) |
| log(assets) | 0.000309 | 0.00198 | 0.000677 | 0.00033 | 0.00101 | 0.002361 |
| | (0.001328) | (0.001268) | (0.001235) | (0.001157) | (0.001177) | (0.001624) |
| log(board_size) | 0.004519 | | | | | -0.004097 |
| | (0.011578) | | | | | (0.012354) |
| % independent directors | | -0.061988** | | | | -0.061393** |
| | | (0.024126) | | | | (0.025210) |
| log(board meetings per year) | | | -0.001486 | | | -0.001144 |
| | | | (0.006505) | | | (0.006784) |
| board meetings attendance | | | | -0.004188 | | 0.011724 |
| | | | | (0.030818) | | (0.032232) |
| CEO duality | | | | | -0.008873* | -0.005632 |
| | | | | | (0.005334) | (0.005557) |
| year effects | yes | yes | yes | yes | yes | yes |
| industry group effects | yes | yes | yes | yes | yes | yes |
| n | 279 | 279 | 279 | 279 | 279 | 279 |
| Adj. R2 | 0.065096 | 0.091297 | 0.064704 | 0.061202 | 0.071641 | 0.072682 |

Standard errors appear in parentheses below coefficients

* significant at the 10 percent level; ** significant at the 5 percent level; *** significant at the 1 percent level

**Table 15—Executive Compensation and Regulatory Penalties**

This table reports the results of regressions of executive compensation characteristics on the total annual financial-related penalties imposed on firm as a proportion of total annual firm revenues ("penalties to revenues"). Models 1–5 regress each compensation characteristic individually, and Model 6 is a combined model considering the ratio of total executive compensation to revenues along with the ratio of total variable compensation to total compensation. All independent variables are lagged by one year. All models use dummy variables to control for year effects and industry group effects. Standard errors appear in parentheses below coefficients, and statistical significance is denoted at the *10%, **5%, and ***1% levels. Definitions of all variables along with relevant calculations appear in Table 1.

Dependent variable: penalties_to_reveneus

| | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| const | -0.051513** | -0.019455 | -0.015784 | -0.017306 | -0.008898 | -0.036566* |
| | (0.020689) | (0.019582) | (0.020363) | (0.019247) | (0.019801) | (0.022100) |
| Tobins Q | 0.016209* | 0.016850* | 0.016244* | 0.018127** | 0.016476* | 0.015075* |
| | (0.008409) | (0.008647) | (0.008665) | (0.008599) | (0.008551) | (0.008759) |
| leverage | 0.052669*** | 0.054013*** | 0.055379*** | 0.047998*** | 0.052022*** | 0.057514*** |
| | (0.012785) | (0.013421) | (0.013213) | (0.013451) | (0.013036) | (0.013866) |
| ROA | -0.217542* | -0.251548** | -0.253194** | -0.263267** | -0.264086** | -0.230708* |
| | (0.121961) | (0.125413) | (0.124818) | (0.124177) | (0.123864) | (0.126252) |
| log(assets) | 0.003070** | 0.000392 | -0.000263 | 0.000033 | -0.001684 | 0.000862 |
| | (0.001252) | (0.001050) | (0.001477) | (0.001058) | (0.001408) | (0.001646) |
| total exec comp to revenues | 0.513982*** | | | | | 0.558680*** |
| | (0.138512) | | | | | (0.143939) |
| percent options comp | | -0.004845 | | | | |
| | | (0.045847) | | | | |
| percent stock comp | | | 0.011235 | | | |
| | | | (0.018087) | | | |
| percent cash bonuses | | | | 0.026606* | | |
| | | | | (0.014175) | | |
| percent total variable comp | | | | | 0.028561** | 0.026529* |
| | | | | | (0.013133) | (0.014159) |
| year effects | yes | yes | yes | yes | yes | yes |
| industry group effects | yes | yes | yes | yes | yes | yes |
| n | 279 | 279 | 279 | 279 | 279 | 279 |
| R2 | 0.169828 | 0.125900 | 0.127158 | 0.137548 | 0.141479 | 0.20132 |

Standard errors appear in parentheses below coefficients

* significant at the 10 percent level; ** significant at the 5 percent level; *** significant at the 1 percent level

**Table 16—Cost of Capital**

This table reports the results of regressions of governance and ownership characteristics along with penalties data on firm cost of capital. The dependent variable in Panel A is cost of debt, and the dependent variable in Panel B is cost of equity. Model 1 is a base case with only control variables. Models 2 contains firm annual penalties data. Models 3–6 incorporate ownership and governance data along with penalties data. All independent variables are lagged by one year. All models use dummy variables to control for year effects and industry group effects. Standard errors appear in parentheses below coefficients, and statistical significance is denoted at the *10%, **5%, and ***1% levels. Definitions of all variables along with relevant calculations appear in Table 1.

A. Dependent variable: cost of debt

| | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| const | 2.514248*** | 2.505559*** | 2.111263*** | 1.757556*** | 2.621442*** | 3.460349*** |
| | (0.378694) | (0.378845) | (0.491604) | (0.479104) | (0.405679) | (0.646626) |
| Tobins Q | 0.339204* | 0.364903* | 0.480153** | 0.379207 | 0.311518 | 0.238223 |
| | (0.195284) | (0.195327) | (0.214191) | (0.256525) | (0.193703) | (0.379553) |
| leverage | -0.02798 | 0.077484 | 0.096258 | 0.115025 | 0.104826 | 0.139736 |
| | (0.234414) | (0.242815) | (0.276509) | (0.257691) | (0.240750) | (0.268823) |
| ROA | -2.986151 | -3.442318 | -5.008084* | -2.804723 | -2.666265 | -1.273822 |
| | (2.540665) | (2.546073) | (2.886614) | (2.983727) | (2.545573) | (4.378295) |
| log(assets) | -0.034352* | -0.034695* | -0.003186 | -0.050262** | -0.009395 | -0.067496 |
| | (0.018812) | (0.018788) | (0.023957) | (0.022453) | (0.027128) | (0.041243) |
| penalties_to_revenues | | 1.824529* | 2.22462* | 1.354246 | 1.011457 | 1.35381 |
| | | (1.024407) | (1.133420) | (1.026429) | (1.060186) | (1.321221) |
| insider_holdings | | | 0.330071 | | | |
| | | | (1.585790) | | | |
| institutional_holdings | | | -0.116253 | | | |
| | | | (0.359648) | | | |
| blockhldrs_holdings | | | 1.853086* | | | |
| | | | (1.114555) | | | |
| top5_holdings | | | -0.554936** | | | |
| | | | (0.274923) | | | |
| CEO duality | | | | 0.099042 | | |
| | | | | (0.088323) | | |
| % independent directors | | | | -1.072001*** | | |
| | | | | (0.398374) | | |
| total exec comp to revenues | | | | | 4.313309 | |
| | | | | | (2.660060) | |
| percent total variable comp | | | | | 0.573543** | |
| | | | | | (0.233587) | |
| Bloomberg Score | | | | | | -0.895519 |
| | | | | | | (0.734146) |
| Sustainalytics Score | | | | | | -0.630927** |
| | | | | | | (0.288388) |
| year effects | yes | yes | yes | yes | yes | yes |
| industry group effects | yes | yes | yes | yes | yes | yes |
| n | 279 | 279 | 279 | 279 | 279 | 279 |
| Adj. R2 | 0.527461 | 0.531642 | 0.556395 | 0.46055 | 0.544251 | 0.535883 |

Standard errors appear in parentheses below coefficients

* significant at the 10 percent level; ** significant at the 5 percent level; *** significant at the 1 percent level

B. Dependent variable: cost of equity

| | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| const | 7.840490*** | 7.720159*** | 7.759335*** | 9.748089*** | 8.274900*** | 7.910217*** |
| | (1.168522) | (1.174950) | (1.773355) | (1.466262) | (1.303446) | (2.361245) |
| Tobins Q | 0.456638 | 0.507127 | 0.244643 | 0.454081 | 0.511686 | -0.982622 |
| | (0.508508) | (0.512557) | (0.754969) | (0.587774) | (0.513827) | (1.261657) |
| leverage | 0.246066 | 0.461528 | 0.279407 | -0.02532 | 0.404518 | 0.104352 |
| | (0.815046) | (0.846128) | (1.006791) | (0.907293) | (0.851071) | (0.994563) |
| ROA | -10.457875 | -11.143445 | -14.331196 | -11.926906 | -11.551472 | -9.391483 |
| | (7.292082) | (7.359861) | (10.275184) | (8.246322) | (7.411596) | (14.866807) |
| log(assets) | 0.328595*** | 0.328673*** | 0.365736*** | 0.367223*** | 0.281995*** | 0.257808 |
| | (0.064048) | (0.064136) | (0.086471) | (0.078451) | (0.095868) | (0.158028) |
| penalties_to_revenues | | -2.689074 | -4.960476 | -5.307226 | -1.673622 | -6.035991 |
| | | (3.604314) | (4.233184) | (3.729395) | (3.755250) | (5.042028) |
| insider_holdings | | | 9.356287 | | | |
| | | | (5.838315) | | | |
| institutional_holdings | | | -0.169465 | | | |
| | | | (1.324610) | | | |
| blockhldrs_holdings | | | 0.998248* | | | |
| | | | (0.543447) | | | |
| top5_holdings | | | -0.635747** | | | |
| | | | (0.274698) | | | |
| CEO duality | | | | -0.366762 | | |
| | | | | (0.319909) | | |
| % independent directors | | | | -2.502553* | | |
| | | | | (1.458492) | | |
| total exec comp to revenues | | | | | -9.451502 | |
| | | | | | (8.630890) | |
| percent total variable comp | | | | | 0.002236 | |
| | | | | | (0.830477) | |
| Bloomberg Score | | | | | | -2.04803** |
| | | | | | | (0.882299) |
| Sustainalytics Score | | | | | | 0.446056 |
| | | | | | | (1.088881) |
| year effects | yes | yes | yes | yes | yes | yes |
| industry group effects | yes | yes | yes | yes | yes | yes |
| n | 279 | 279 | 279 | 279 | 279 | 279 |
| Adj. R2 | 0.587508 | 0.58789 | 0.582045 | 0.599105 | 0.586512 | 0.63632 |

Standard errors appear in parentheses below coefficients

* significant at the 10 percent level; ** significant at the 5 percent level; *** significant at the 1 percent level

**Table 17—Robustness Checks**

This table reports the results of robustness checks. It considers the total cumulative fines levied against firms over the 2006–2008 time period. As this encompasses the time of the financial crisis, it serves as a shock to the financial services sector. The firms are then segmented into thirds and for the top and bottom third calculate the mean ownership statistics for the first and last years in the dataset (2006 and 2017). The differences in means are calculated and the statistical significance of the differences is indicated based on the results of a two-sided t-test; statistical significance is denoted at the *10%, **5%, and ***1% levels.

Although all ownership measures increased over the time period 2006–2017, the increase was greater for the highest-fined companies for total blockholder ownership. Conversely, the increases are less for the highest-fined companies for total institutional ownership and the ownership percentage of the five largest institutional ownership. This is consistent with the previous results showing that blockholder ownership is associated with greater fines and total institutional ownership, and ownership of the five largest investors are associated with lower levels of fines. This robustness check also provides additional evidence that the effect changes over time: blockholders increase their stakes more significantly in more offending firms with higher levels of fines, while the five largest investors and institutional investors more broadly increase stakes to a greater extent in less offending firms with lower levels of fines.

| | 2006-2008 cummulative fines | 2006 mean | 2017 mean | diff in means (2017-2006) |
|---|---|---|---|---|
| total institutional ownership | highest fines third: | 0.645 | 0.751 | 0.106** |
| | lowest fines third: | 0.676 | 0.809 | 0.133** |
| total blockholder ownership | highest fines third: | 0.118 | 0.280 | 0.162*** |
| | lowest fines third: | 0.127 | 0.232 | 0.105*** |
| top5 ownership | highest fines third: | 0.239 | 0.317 | 0.077** |
| | lowest fines third: | 0.218 | 0.345 | 0.127** |

* significant at the 10 percent level; ** significant at the 5 percent level; *** significant at the 1 percent level