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Keywords: Banks, Government Policy and Regulation, Enforcement, FinCEN Files

JEL Classifications: G21, G28, G38

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Abstract

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I

INTRODUCTION

Money laundering and other financial crimes have emerged in recent years as an important threat to capital markets. For example, the FATF-Egmont Group[1] estimates that trade-based money laundering and tax evasion accounted for about a $9 trillion loss for developing countries between 2008 and 2017. For this reason, The Bank Secrecy Act of 1970 requires financial institutions to collaborate with the US government to help identify and prevent money laundering 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 to state and federal authorities for violations in reporting suspicious activities, they are less incentivized to investigate suspicious activities of valued clients or large transactions. Moreover, while the type and magnitude of SARs filed may vary significantly across

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[1] *Trade-based Money Laundering: Trends and Developments*, FATF – EGMONT GROUP (Dec. 2020), https://www.fatf-gafi.org/media/fatf/content/Trade-Based-Money-Laundering-Trends-and-Developments.pdf [https://perma.cc/MUC6-E8Q6].

[2] Bank Secrecy Act, Pub. L. No. 991-508, 84 Stat. 1114 to 1124 (1970) (codified as amended in scattered sections of 12 U.S.C., 15 U.S.C., and 31 U.S.C.) (2006).

[3] *See*, *e.g.*, 31 U.S.C. § 5318 (2006).

countries, the number of SAR filings has almost doubled in the United States (US) over the last decade.[4] For example, the number of SARs filed in 2019 alone amounted to more than 2.7 million with approximately 85% filed by financial institutions.[5]

Incidents of financial sector misconduct, and the inability of regulators to discourage them, can negatively affect confidence in financial institutions. Therefore, it is important to document 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 are crucial to their investigation of potential misconduct and enforcement actions.[6] On the other hand, some scholars have questioned this argument, pointing out that the higher level of SARs volume is more consistent with a regulatory system which is built on a systemic cost-benefit analysis.[7] According to this view, banks may be incentivized to engage in the over-filing of SARs because of their preference to avoid penalties and willingness to engage with customers with greater potential for financial crime.[8] Only recently have scholars started to investigate the impact of financial penalties and potential reputational risks for banks likely to develop lax reporting standards. We consider this the financial penalties hypothesis.[9] Other relevant factors likely to affect banks' reporting of SARs, include the capital market reaction related to announcements of an unintended disclosures.

While articles in this 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' SARs disclosures. Two opposing views can be distinguished with respect to the relation between the disclosure of illicit activities and firm value. The first view holds that the effects of tax or illicit activities disclosure is positively associated with firm value. We call this the positive effects view. This view holds that the market reacts positively to news about the exposure a firm's tax information or planning structure. For

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[4] *See Agency Information Collection Activities; Proposed Renewal; Comment Request; Renewal Without Change of the Bank Secrecy Act Reports by Financial Institutions of Suspicious Transactions at 31 CFR 1020.320, 1021.320, 1022.320, 1023.320, 1024.320, 1025.320, 1026.320, and 1029.320, and FinCEN Report 111— Suspicious Activity Report*, FINCEN, DEPT. OF THE TREASURY, 85(101) FED. REG. 31598 (MAY 26, 2020), https://www.govinfo.gov/content/pkg/FR-2020-05-26/pdf/2020-11247.pdf [https://perma.cc/LWJ5-MCV8].

[5] *Id.* at 31599-600.

[6] Peter Schroeder, *U.S. Policymakers Seize on FinCEN Leaks to Press for Stepped Up Money-laundering Right,* REUTERS (Sept. 22, 2020), https://www.reuters.com/article/uk-global-banking-fincen-congress-idUKKCN26D001 [https://perma.cc/R9W7-UX2Z].

[7] Janet Gao, Joseph Pacelli, Jan Schneemeier & Yufeng Wu, *Dirty Money: How Banks Influence Financial Crime* (Working Paper, Jan. 25, 2022), https://ssrn.com/abstract=3722342 [https://perma.cc/L4DH-3H6M].

[8] Elod Takats, *A Theory of "Crying Wolf": The Economics of Money Laundering Enforcement*, 27(1) J.L. & ECON. ORG. 32 (2011).

[9] *See, e.g.*, Hannes Koster and Matthias Pelster, *Financial Penalties and Bank Performance*, 79 J. BANK. & FIN. 57 (2017); Birgit Huesecken, Michael Overesch & Alexander Tassius, *Effects of Disclosing Tax Avoidance: Capital Market Reaction to LuxLeaks*, (Working Paper, Mar. 4, 2018), https://ssrn.com/abstract=2848757 [https://perma.cc/ZW6R-WNVT]; James O'Donavan, Hannes F. Wagner & Stefan Zeume, *The Value of Offshore Secrets: Evidence from the Panama Papers*, 32(11) REV. FIN. STUD. 4117 (2019).

example, Huesecken, Overesch & Tassius find that the market reacts positively to news about the exposure of multinational firms to the leak of Luxembourg advanced tax rulings.[10] They argued that this was because capital markets are more likely to respond positively to the news about the 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. Consistent with view, O'Donovan, Wagner & Zeume find that firms connected to the use of secret offshore vehicles are more negatively affected, as evidenced by the Panama Papers leak.[11]

To address these two views, we investigate the effects of the disclosure of SARs on the capital market valuations of banks. We conduct 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. We find economically significant negative capital market reaction in the days after the database was made public. Our findings are consistent with the negative effects hypothesis. We also report, using wider windows (*i.e.*, from five days before until five days after the leak and from ten days before until ten days after the leak) the market value of the banks has more than recovered from any value changes associated with the FinCEN leaks.

To further examine the effect of the FinCEN leaks, we focus on whether the fines imposed on a financial institutional can have a negative impact on the market valuations. To identify these effects, we document an economically significant negative CARs after the event and in the seven-day window around the event. However, we provide evidence that the negative reaction to the fine announcement is already eroded in the 11-day event window [-5, 5]. Our findings highlight that there is little information from the leaks that can limit investors' confidence in the long-term value effects of the banks involved.

Next, we study how governance characteristics related to the board of directors, executive compensation and ownership characteristics as well as third party rankings of firm governance affect announcements pertaining to fines. In this analysis, we provide evidence that banks and financial institutions with better governance are more likely to have fewer regulatory fines and suffer less financial market effects from the announcements of these fines. In fact, consistent with the insider trading literature, we find 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.

[10] *See id.* Huesecken, Overesch & Tassius.
[11] O'Donovan, Wagner & Zeume, *supra* note 9.

We also study institutional holdings characteristics and the relationship with fines incurred and cost of capital. Surprisingly, this relation has not been explored in the literature until very recently.[12] In this analysis, we find evidence that institutional investors diversify holdings away from banks with larger fines. Our findings generally support the theoretical argument that the cost of capital is impacted as investors eschew more offending firms.

This article contributes to the literature in three key ways. First, our results help to explain the effect of shareholder holdings and governance on the level and 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.[13] Second, we contribute to an increasing literature that measures the extent to which financial penalties affects corporate decisions and investments. Third, by considering the stock price responses around announcements of regulatory fines, we contribute to the literature that stresses the impact of better governance on lower penalties and more muted market reactions to penalties imposed. Our results on large institutional investors diversifying away from more offending firms not only provides evidence on the cost of capital, but also contributes to the growing literature on reputational risks.[14]

The reminder of the article is organized as follows. In Section II, we review the institutional background of the SARs regime and relevant prior literature. Section III describes the data sources and research methodology. Section IV presents and analyzes the results. Section V concludes.

II

BACKGROUND

In this section, we discuss the institutional background on suspicious activity reporting and relevant prior research. Next, we describe the multiple datasets used for our study, and then present our empirical method to examine how the fines imposed on banks affects the company's abnormal returns.

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

[13] *See*, *e.g.*, 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).

[14] *See*, *e.g.*, 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 Mangers 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).

A. Institutional Background

Money laundering has increasingly become a major problem for regulators around the world. 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. Significantly, the passage of the Bank Secrecy Act of 1970 (BSA), which is the core of the regulatory framework, Congress introduced recordkeeping and reporting requirements for financial institutions and banks. The goal of the legislation is to assist with the federal government's anti-money laundering efforts.[15] The BSA originally required banks to report cash transactions over $5,000, which was subsequently increased to $10,000 in 1984. It is worth pointing out that much of the information obtained under the BSA consisted largely of routine and innocent transactions. In the meantime, however, Congress addressed these shortcomings by enacting the Money Laundering Control Act of 1986, which imposed liability on 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 that required financial institutions to report suspicious activities.[16] An important design feature of this legislation is that bank employees receive immunity from legal actions arising from the filing of SARs and that the reports are confidential. Without this feature, the SARs process would likely attract significant opposition from banks and financial institutions to file any meaningful reports of suspicious activity of clients relevant to a possible violation of federal law.

Currently under the SARs 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, can be identified based on employee suspicions, bank compliance and monitoring program or any supervisory investigations. To be sure, there is no requirement to file a SAR in transaction that is below $5,000. Finally, the Anti-Money Laundering Act of 2020 (AMLA)[17] lifted the cap on the FinCEN Whistleblower Reward Program and increased protections for employees to report on possible money laundering activities at their financial institution and company. The consequences of the FinCEN Whistle reforms are almost certainly to create significant incentives for bank employees to report violations of the BSA and thereby increasing 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 and creation of an expanded Whistleblower rewards program.

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[15] 31 U.S.C. 5311 (2021)
[16] 31 U.S.C. § 5318(g)(1) (2006).
[17] Pub. L. 116-283 Div. F §§ 6001-6003 (2021).

Although some suggest that the FinCEN enforcement actions have encouraged the filing of SARs, the program has been subject to considerable controversy in the empirical literature. There are a number of possible explanations. First, the imposition of electronic filings of SARs after 2012 and FinCEN's increased enforcement actions leading to greater fines might have been expected to increase the SARs filed annually. Second, the enormous compliance costs to the banking sector as well contributed to increase in the submission of SARs between 2012 and 2018. Third, SARs reporting levels seem not to be affected by enhanced regulatory environment, since there were no bigger or smaller number of SARs after the financial crisis. Thus, it appears that other factors, such as the upward trend in financial crime and BSA violations, may have affected the increase in the volume of SARs. Regardless of the competing explanations, presumably the high cost of regulatory fines, once reputation is established for banks, may be a good business reason to reinforce the compliance culture within large financial institutions.

B. Prior Literature

In this section, we introduce the three strands of the literature motivating our 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), literature on bank risks and performance (particularly with respect to governance), and event studies surrounding data leaks, financial fraud, and financial statements reporting.

A large 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.[18] Karpoff, Lee & Martin consider the effects of SEC enforcement actions on firms for fraudulent misreporting on financial statements.[19] Using an event study methodology, they estimate how firm market value is impacted by fraudulent misreporting on financial statements. Notably, they take into effect 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 magnitudes of the financial misstatements; they attribute these losses to decreased future revenues and increased borrowing costs as well as more stringent bond and loan covenants as the result of the reputational damage caused by the financial misreporting. Armour, Mayer & Polo document the announcement of an enforcement process for violations of financial regulations results in reputational losses nearly nine times the size of fines.[20]

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[18] Messod D. Beneish, *The Detection of Earnings Manipulation*, 55(5) FIN. ANAL. J. 24 (1999).
[19] Karpoff, Lee & Martin [*Cooking the Books*], *supra* note 14.
[20] John Armour, Colin Mayer and Andrea Polo, *Regulatory Sanctions and Reputational Damage in Financial Markets*, 52(4) J. FIN. & QUANT. ANAL. 1429 (2017).

Other studies focus on the impact that misreporting can on borrowing costs. Graham, Li & Qui consider the aftermath 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.[21] 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 consider governance-related aspects except to note that internally identified and initiated refilings do not impact the increased borrowing costs as a result of the misreporting; they conjecture that this is evidence of minimal if any governance-related effects. However, their analysis is ex-post (*i.e.*, after the misreportings have been identified), and therefore this does not preclude the possibility that governance may impact the number and amount of misreporting *ex ante*.

Chava, Huang & Johnson also examine the reputational effects of financial misreporting on firm borrowing costs and consider the duration of these effects as well as the efficacy of firm efforts to improve reputations and lower borrowing costs in the aftermath of a misreporting.[22] They find that increased loan spreads persist for at least six years after restatement. They also consider several governance changes firms make after misreporting, and 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 does not consider the role better *a priori* governance can play in mitigating reputational damages, *ceteris parabis*, nor the relationship better a priori governance can play in reducing the occurrence of future events which could cause reputational damage. Also, Gu, Hasan & 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. While 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.[23]

In relation to the spillover effects on the cost of equity, Cao *et al.* consider the relationship between firm reputation and cost of equity.[24] While 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.

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[21] Graham, Li & Qiu, *supra* note 14.
[22] Chava, Huang & Johnson, s*upra* note 14.
[23] Xian Gu, Iftekhar Hasan & Haitian Lu, *Institutions and Corporate Reputation: Evidence from Public Debt Markets*, J. BUS. ETHICS (2022).
[24] Ying Cao, James N. Myers, Linda A Myers & Thomas C. Omer, *Company Reputation and the Cost of Equity Capital*, 20 REV. ACCT. STUD. 42 (2015).

For managers linked with financial misrepresentation, they suffer reputational damages as well in the form of reduced future earnings, diminished job prospects, and in some cases criminal penalties.[25] Making matters worse, 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 damages.

In recent years, a small literature has emerged that focuses on the relationship between fraudulent events and governance shows some evidence that strong governance reduces the occurrence of firm financial fraud. Beasley found that firms with higher percentages of independent directors and longer average director tenures were less likely to be involved in financial fraud.[26] Similarly, Agrawal & Chadha found evidence that the presence of independent directors and audit committee characteristics are correlated with reduce occurrence of earnings restatements.[27] These studies employed small sample sizes and were limited in focus on investigating specific board of directors and auditor characteristics.

In their analysis of the Panama Papers leak, O'Donovan, Wagner & Zeume estimate reputational damages to firms named as using secretive offshore vehicles.[28] Using an event study they calculated 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. While they find evidence of an inverse relationship between governance quality and the financial impact of the leaks, this is because the offshore vehicles of poorly governed firms were used by some shareholders 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.[29] Berger, Imbierowicz & Rauch find that certain characteristics were related to lower probabilities of bank failure during the financial crisis. Peni & 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. [30] Both of these studies were limited to the years surrounding the financial crisis and did not consider the aspects of governance and firm behavior that would result in regulatory penalties and fines. In the realm of European banks, Migliardo & Forgione find that certain ownership

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[25] Karpoff, Lee & Martin [*Consequences*], *supra* note 14.
[26] Beasley, *supra* note 13.
[27] Agrawal & Chadha, *supra* note 13.
[28] O'Donavan, Wagner & Zeume, *supra* note 9.
[29] Allen N. Berger, Björn Imbierowicz & Christian Rauch, *The Roles of Corporate Governance in Bank Failures During the Recent Financial Crisis*, 48(4) J. MONEY & CREDIT BANK. 729 (2016).
[30] Emilia Peni & Sami Vèahèamaa, *Did Good Corporate Governance Improve Bank Performance During the Financial Crisis?*, 41(2) J. FIN. SERVS. RSCH. 19 (2012).

characteristics have positive effects on banks' profitability and risk profiles. [31] Azar, Raina & Schmalz examine the relationship between bank ownership and competition and pricing.[32] They find that common ownership of shareholders across banks in the US result in decreased competition and increased pricing.

III

RESEARCH METHODOLOGY

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

A. Data

While the FinCEN provides some descriptive statistics on SAR reports submitted by banks operating in the United States, the data is only very high level and lacks any granular detail.[33] However, in September 2020, BuzzFeed News in cooperation with the International Consortium of Investigative Journalists (ICIJ) published several news articles using leaked SARs data.[34] The ICIJ also published a portion of this data showing certain information on a selection of over 18,000 SARs filed by US based banks over the years 2004-2017.[35] This data contains the names of the originating and destination banks as well as the countries of origin and destination, the date and amounts of the transactions, and the US-based correspondent bank which cleared the transactions.

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[31] Carlo Migliardo & Antonio Fabio Forgione, *Ownership Structure and Bank Performance in EU-15 Countries*, 18(3) CORP. GOVERNANCE: INT'L J. BUS. SOC'Y. 509 (2018).
[32] José Azar, Sahil Raina & Martin C. Schmalz, *Ultimate Ownership and Bank Competition*, 51(1) FIN. MGMT. 227 (2022).
[33] FINCEN, *SAR Stats*, https://www.fincen.gov/reports/sar-stats [https://perma.cc/W3HX-AU8Z] (last accessed 26 January 2022).
[34] *See, e.g.*, Jason Leopold, Anthony Cormier, John Templon, Tom Warren, Jeremy Singer-Vine, Scott Pham, Richard Holmes, Azeen Ghorayshi, Michael Sallah, Tanya Kozyreva & Emma Loop, *The FinCEN files*, (Sept. 20, 2020), https://www.buzzfeednews.com/article/jasonleopold/fincen-files-financial-scandal-criminal-networks [https://perma.cc/GQ7G-RQ8T]; Alicia Tatone, *FinCEN Files: Global Banks Defy U.S. Crackdowns by Serving Oligarchs, Criminals and Terrorists*, (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/B63Z-M5J6]
[35] INTERNATIONAL CONSORTIUM OF INVESTIGATIVE JOURNALISTS (ICIJ), *Explore the FinCEN Files Data*, (Sept. 20, 2020), https://www.icij.org/investigations/fincen-files/explore-the-fincen-files-data/ [https://perma.cc/T93A-KADP].

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 the FinCEN. The FinCEN only provides high-level summary data beginning in 2014. However, as we can see by comparing the annual summary statistics, the number of SARs covered by the FinCEN leaks data is only a small fraction (less than 1%) of the total SARs filed by financial institutions over this overlapping four-year period (2014-2017). 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, we have no definitive information about which if any of the SARs published by the FinCEN leaks ultimately resulted in fines. The FinCEN leaks data sheds interesting light on the actions of regulators in response to fines. Journalists have used the data to show patterns over time of repeated transactions involving sanctioned individuals and entities.[36] While this perhaps opens-up banking regulators to scrutiny, it should be of no surprise to banks and of little more than fleeting interest to the market. The FinCEN leaks data is not broad enough to statistically analyze the financial effects on financial institutions or investigate relationships with other firm variables. While 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 had already submitted these SARs to regulators; fines have already been assessed and paid.

We take a deeper and broader approach to analyzing the involvement of financial services firms in fraudulent activities, and that is to begin by looking at fines levied against banks and related financial institutions for financial and banking-related offenses. In order to consider the effect of market reactions to the announcement of regulatory fines and related violations and the connection with corporate governance and holdings data, we employ 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.[37] The Violation Tracker dataset contains information on a wide range of fine categories levied by US federal and state authorities on companies.

To compile our dataset, we start by using the Violation Tracker database and 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 us the amount of the penalties, the dates they were announced, and information on the assessing agency or agencies, and details on the

[36] *See* sources cited *supra* note 34.

[37] *See Violation Tracker,* GOOD JOBS FIRST, https://www.goodjobsfirst.org/violation-tracker [https://perma.cc/L36W-XYJK] (last accessed May 1, 2022); CORPORATE RESEARCH PROJECT, https://www.corp-research.org/home-page [https://perma.cc/6NQH-AKQE] (last accessed May 1, 2022).

type of offense and fine being levied. We screen this data for complete records and remove any incomplete records; we also combine any entries which include fines levied by different regulators together for the same offense.[38] Summary statistics on the penalties data used in our dataset are shown in Table 3.

We then merge this dataset with data from the Bloomberg Financial terminal and from Refinitiv (formerly Thomson Reuters). From Bloomberg, we take 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, we use the sum of the percentage of shares held by executives and by non-employee directors.[39]

Characteristics of institutional investor holdings are calculated from data accessed via summary SEC 13F filings data available through the Refinitiv Database on Institutional Holdings. [40] Any investment manager with at least $100 million in assets under management is required to file form 13F with the SEC, listing their equity ownership stakes.[41] For our calculations, we are careful 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, we avoid double-counting the number of investors holding the company's shares and ensure each total holdings are properly attributed to each 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.

We include the following executive compensation data in our 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.

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[38] *See* sources cited *id.*
[39] Bloomberg Financial Terminal (last accessed June 12, 2021).
[40] Refinitiv Institutional Holdings Data (last accessed June 15, 2021).
[41] 17 CFR § 240.13f-1 (2006).

The following characteristics of firm boards of directors are included in our data: the percentage of independent directors on the board, the size of the board of directors, the number of board meetings per year, and the percentage of board meeting attendance in each year.

In addition to insider and institutional investor holdings data, executive compensation data, and board characteristics, we use third-party ratings of firm governance published by Bloomberg and Sustainalytics 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 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".[42] 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".[43] The ranking ranges from 0 for the poorest-governance-quality companies to 100 for the best. The Sustainalytics governance ranking is rank for the company's management of its governance activities in relation to industry peers.

The use of both the Sustainalytics and Bloomberg governance ratings allow us to use 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

We next employ an event study methodology to calculate abnormal returns around announcement dates related to the FinCEN leaks and regulatory fines in our 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),[44] 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:

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[42] Bloomberg Financial Terminal (last accessed June 12, 2021).
[43] *Id.*
[44] *See* William F. Sharpe, *Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk*, 19 J. FIN. 425 (1964); John Lintner, *The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets*, 47(1) REV. ECON. STAT. 13 (1969).

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). This is calculated as the difference between the predicted daily return in relation to general market movements according to the CAPM and the actual security returns. We 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 summing all daily ARs for that time window. 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 of 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 our dataset).

To calculate the terms for the CAPM model for expected return calculations for each security, we use an estimation window of 100 days, starting 130 days before the event date (day *t*=0). 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 or speculation of the event. We use the returns on the S&P 500 index for market returns and the yield on the 30-day US 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.

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

D. Calculating Adjusted CARs

From the event study conducted on the events in our fines database, we 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 to be conducted. We therefore consider 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, we are able 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 & Martin make a similar adjustment in calculating the effects on firm value in their event study.[45] We calculate 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).

Afterall, 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 in terms of reputational losses from decreased revenues, increased borrowing costs, or future related regulatory fines. If there is an excessively negative reaction (*i.e.*, an adjusted CAR<0), this may be because investors believe there are potentially more fines to come, were under-anticipating the risk of the fine being assessed, or are 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 market cap before the fine was announced (*i.e.*, an adjusted CAR>0), this would indicate that investors are less concerned about the value impact of the fine on the firm – perhaps they over-estimated the risk of the fine being assessed or the amount of the fine ultimately assessed, or investors are 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 believe there will be any lasting reputational effects on firm value.

By considering pre- and post-announcement windows we are able 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 to be announced and if 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

[45] Karpoff, Lee & Martin [*Cooking the Books*], *supra* note 14.

announcement of the fine or leakage of non-public information from firm insiders. Regardless of the specific reasons causing them, significant negative adjusted CARs would indicate that the market is over-punishing the firm, either 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, we would similarly expect weaker governance to lead to more significant negative adjusted CARs in the pre-announcement window as well as the post-announcement window, albeit for potentially different reasons.

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

E. Regressions

We use regression analysis to study 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 cost of capital.

1. Control Variables

In all our regression models, we employ the following control variables. To control for size, we use the natural logarithm of total assets. To control for leverage we use the ratio of total debt to total assets. 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. We generate dummy variables for each four-digit GICS industry group classification (within the GICS financial sector) in order to control for industry group effects, and we generate dummy variables for each year in order to control for year effects. All control variables are lagged by one-year in our regressions.

2. Market Reaction Analysis (*ex post*)

By regressing on the adjusted CARs, we are able to test to what extent certain governance characteristics are related to market reactions in excess of the amount of the penalties imposed. Karpoff, Lee & Martin use this excess to estimate the reputational losses incurred by firms.[46] Thus, this analysis allows us to examine which governance characteristics are related to reduced reputational losses from imposed fines. This *ex post* analysis allows us to test if governance and ownership characteristics can mitigate the value consequences and reputational risks incurred by firms from the imposition of

[46] Karpoff, Lee & Martin [*Cooking the Books*], *supra* note 14.

regulatory fines. As our literature review has discussed, previous authors have found that some aspects of governance can have a mitigating effect on reputational damages.[47] We therefore expect that less negative (*i.e.*, more positive) adjusted CARs would be correlated with better firm governance.

3. Firm Behavior Analysis (*ex ante*)

We then examine 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, we regress on the sum of all fines incurred by a firm in a particular year. In order to consider the firm-perspective and how firm behavior in incurring fines may be related to corporate governance factors, we calculate the amount of the fine 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 cash-flows of the firm. Chava, Huang & Johnson have found that firm improvements in governance made after financial misreporting have little impact on reducing reputational costs.[48] Our *ex ante* perspective examines what role governance can play in mitigating risk taking behavior with firms with respect to regulatory risks before fines are imposed. As some prior literature has found that better governance can lead to less risk of bank failure[49] and better financial performance for banks,[50] we expect better governance to also lead to less risk taking by firms and therefore a lower total amount of fines being imposed.

4. Cost of Capital Effects

Finally, we consider the effect of the penalties on cost of capital along with the governance and ownership characteristics our previous analyses found most significant. This way we can compare the reputational impact of penalties on firm financing costs along with corporate governance factors. For cost of capital, we use the Bloomberg reported estimates of a firm's cost of debt and cost of equity. The cost of debt calculation considers the after-tax weighted average spread of a firm's debt securities over long-term (10-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 derived using the Capital Asset Pricing Model (CAPM).[51] It represents the premium over the risk-free rate demanded by equity investors in the firm.

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[47] Chava, Huang & Johnson, s*upra* note 14; Karpoff, Lee & Martin [*Consequences*], *supra* note 14; Beasley, *supra* note 13; Agrawal & Chadha, *supra* note 13.
[48] Chava, Huang & Johnson, *supra* note 14.
[49] Berger, Imbierowicz & Rauch, *supra* note 18.
[50] Peni & Vèahèamaa, *supra* note 19; Migliardo & Forgione, *supra* note 20; Azar, Raina & Schmalz, *supra* note 32.
[51] *See* Sharpe, *supra* note 33; Lintner, *supra* note 33.

IV

RESULTS AND ANALYSIS

This section discusses the results of our analyses in connection with previous literature and our conjectures.

A. Event Study Results

1. FinCEN Leaks Event Study Results

Table 5 panel A examines the CARs surrounding the FinCEN leaks for several selected event windows. While ther negative market reaction in the days after the FinCEN leaks (from the day of the leak until three days after the leak), this is tampered when we look at the wider seven-day window around the leak (*i.e.*, from three days before until three days after the leak) where the mean CAR is not even statistically different from zero. Once we look at wider windows (*i.e.*, from five days before until five days after the leak and from ten days before until 10 days after the leak), we find statistically significant positive CARs indicating 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 and surrounding press.

Our results are in line with our expectations that there is little information from the leaks with which investors can infer any long-term value effects on the banks involved. The results are in contrast with the O'Donovan, Wagner & Zeume finding of long-term negative value implications for firms implicated in the Panama Papers leaks.[52] However, the Panama Papers leaks uncovered ongoing and previously secretive actions by some firms to aggressively evade taxes, and sometimes to expropriate value, pay bribes, or engage in other fraudulent or criminal activities. The leaked SARs as part of the FinCEN leak were already filed with regulators and any relevant fines related to the activities would have been assessed by regulators and the impact of the fines absorbed by the market at the time of the assessments.

2. Penalty Announcement Event Study Results

[52] O'Donovan, Wagner, & Zeume, *supra* note 9.

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, we see 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 is a statistically significant negative adjusted CARs after the event and in the seven-day window around the event (*i.e.*, from three days before until three days after the day of the fine announcement). This indicates that there is on average a statistically significant decrease of firm value (in terms of market capitalization) in excess of the amount of the fines imposed. However, by the 11-day window (*i.e.*, 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.

B. Regression Results

The event study of the penalty announcements is informative as to the average reaction of firms to penalties and shows with statistical significance the additional reputational costs firms incur in addition to the announcement of the fines. These reputational costs are consistent with what has already been well-established in the previous literature. However, we go further and examine how governance characteristics of individual firms are related to the magnitude of reaction beyond the penalty amounts imposed; we do this by regressing governance characteristics onto the adjusted CARs. We consider governance characteristics related to board of directors, executive compensation, and ownership characteristics as well as third-party rankings of firm governance.

1. Board Characteristics

We find 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 1996, Agrawal and Chadha 2005 (when independent directors bring additional expertise) and by de Andreas and Vallelado 2008 (as long as boards are not excessively large).[53]

We also find that higher percentages of independent directors are correlated with more negative pre-announcement adjusted CARs; a result potentially indicative of insider trading, the leakage of information and resulting trading on non-public information, or a combination of both. This result is

[53] *See*, *e.g.*, Beasley, *supra* note 13; Agrawal & Chadra, *supra* note 13; Pablo de Andres, P. & Eleuterio Vallelado, *Corporate Governance in Banking: The Role of the Board of Directors*, 32(12) J. BANK. & FIN. 2570 (2008).

consistent with the Ravina and Sapienza finding that independent directors often sell stock prior to official announcements of news that negatively affects firm share prices.[54]

We find a negative relationship between CEO duality and fines: firms where the CEO and chairman of the board positions are occupied by the same individual have lower fines. We also find that CEO duality is correlated with more negative adjusted CARs after fine announcements. The beneficial and negative impacts of CEO duality in our results are consistent with the prior literature.

While there is conflicting evidence regarding whether CEO duality has a beneficial or harmful effect on firm performance[55], Berger, Imbierowicz & Rauch find that CEO duality lowers the probability of bank failure.[56] They conjecture this may be because of 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 & Martin showing that along with firms, managers suffer personal reputational costs, in terms of diminished job prospects and reduced future earnings potential.[57] This is particularly the case with more senior managers and chairmen of the board; combining those two roles would mean the individual would likely bear an even greater reputational effect in the event of firm fines. This effect is likely amplified for executives in the financial services sector since the financial crisis of 2007-8 brought failures of financial institutions into the spotlight and attached an even greater stigma to being involved in such failures.

Our findings 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*, we see that firms with CEO duality suffer greater reputational damage as they are punished more severely by markets after the announcement of a fine. It would make sense that this would be particularly notable in the case when the same executive occupies the CEO and chairman position.

2. Compensation Characteristics

We find a positive relationship between fines and executive compensation, both total compensation and the ratio of variable compensation to total compensation. We also find a positive relationship between executive compensation and adjusted CARs after the announcements of fines, indicating higher compensation may have a slight mitigating effect on market reactions in the wake of fine announcements.

The literature supports our conjecture and findings that higher compensation results in greater risk seeking behavior and more fines. Banks and other financial institutions are highly leveraged and

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[54] Enrichetta Ravina & Paola Sapienza, *What Do Independent Directors Know? Evidence from Their Trading*, 23(3) REV. FIN. STUD. 962 (2010).
[55] *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(1) J. ECON. LIT. 58 (2010).
[56] Berger, Imbierowicz & Rauch, *supra* note 29.
[57] Karpoff, Lee & Martin [*Consequences*], *supra* note 14.

managerial incentives are therefore more aligned with common shareholders and less so with debtholders, meaning less attention is given to downside risks.[58] This situation is obviously intensified when there is a greater component of variable compensation. Our results are consistent with the analyses of executive compensation at banks by Fahlenbrach & Stulz and Berger, Imbierowicz & Rauch.[59] Though their analyses considered compensation to different levels of executives which give a more nuanced set of results, our results are consistent with the overall conclusions.

With regard to the positive relationship between executive compensation levels and adjusted CARs after fines are announced, we consider the results of Karpoff, Lee & Martin which demonstrates the negative personal reputational costs (in terms of diminished future employment prospects and earnings potential) that accrue to managers when firms misreport financial statements.[60] Our results 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*. This motivation increases with compensation levels as higher paid executives have more to lose (in terms of present discounted value of future earnings) when risky behavior is identified and punished by regulators.

3. Ownership Characteristics

We find that higher holdings by firm insiders is 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 & Sweeny evidencing insider trading activity amid misstated financial statements and Ravina & Sapienza demonstrating insider trading by directors before negative company announcements. [61] Taking our results more broadly as general evidence of poor governance, this would be consistent with findings by McConnell & Servaes, who have shown that as insider holdings increase, firm value declines; and by Berger, Imbierowicz & Rauch, who show that higher shareholdings of insiders increases the likelihood of bank failure.[62]

With respect to institutional ownership characteristics and *ex ante* risk-seeking firm behavior, we 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 firms avoid

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[58] Lucian A. Bebchuk & Holger Spamann, *Regulating Bankers' Pay*, 98(2) GEO. L.J. 247 (2010).
[59] Rüdiger Fahlenbrach & René Stulz, *Bank CEO Incentives and the Credit Crisis*, 99(1) J. FIN. ECON. 11(2011); Berger, Imbierowicz & Rauch, *supra* note 29.
[60] Karpoff, Lee & Martin [*Consequences*], *supra* note 14.
[61] Scott L. Summers & John T. Sweeny, *Fraudulently Misstated Financial Statements and Insider Trading: An Empirical Analysis*, 73(1) ACCT. REV. 131 (1998); Ravina & Sapienza, *supra* note 42.
[62] John J. McConnell & Henri Servaes, *Additional Evidence on Equity Ownership and Corporate Value*, 27 J. FIN. ECON. 595 (1990); Berger, Imbierowicz & Rauch, *supra* note 29.

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 creating a failure of collective action. Similarly, when we examine the influence of ownership concentration and large blockholders, we must also consider two competing effects. Concentrated ownership can result in blockholders using their influence to pursue private benefits to the detriment of total firm value. On the other hand, high ownership concentration can lead to more efficient monitoring which can benefit all shareholders, not just blockholders.[63]

Particularly in the case of financial institutions, Erkens, Hung & Matos argue that with more concentrated shareholders, the interests of common shareholders and managers are more closely aligned resulting in higher risk taking behavior 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 2007-8.[64] However their study focuses on the risk of bank failure during an exceptional period: The 2007-8 Financial Crisis. More broadly speaking, the evidence seems to support our conjecture that higher institutional ownership has a positive effect on the risk-return profile of firms.[65] Additionally, newer studies focusing on the banking sector after the Financial Crisis of 2007-8, such as Azar, Raina & Schmalz and Migliardo & Forgione, find that concentrated ownership and large levels of institutional investors lead to improved performance metrics.[66] Consider also that due to extensive common ownership among larger institutional investors across the US banking sector, a trend which has continued to increase notably since the Financial Crisis of 2007-8, competition among financial institutions has decreased resulting in increased profitability and therefore less pressure on individual firms to seek-out riskier strategies to improve profitability.[67]

To support the positive benefits of institutional ownership, our combined regressions demonstrate that controlling for the same level of ownership among the top five largest investors, we see a positive relationship between blockholders and fines. We only see a negative relationship between

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[63] *See*, *e.g.*, Michael J. Barclay & Clifford G. Holderness, *Private Benefits from Control of Public Corporations*, 25 J. FIN. ECON. 371 (1989); Andrei Shleifer & Robert W. Vishny, *Large Shareholders and Corporate Control*, 94 J. POL. ECON. 461 (1986); Bernard Black, *Shareholder Passivity Reexamined*, 89 MICH. L. REV. 520 (1990); Jonathan M. Karpoff, Paul H. Malatesta, P. & Ralph A. Walking, *Corporate Governance and Shareholder Initiatives: Empirical Evidence*, 42 J. FIN. ECON. 365 (1996); Anup Agrawal & Charles R. Knoeber, *Firm Performance and Mechanisms to Control Agency Problems between Managers and Shareholders,* 31 J. FIN. QUANT. ANAL. 377 (1996); Steven Huddart, *The Effect of a Large Shareholder on Corporate Value*, 39 MGMT. SCI. 1407 (1993); Ernst Maug, *Large Shareholders as Monitors: Is There a Tradeoff Between Liquidity and Control?*, 53 J. FIN. 65 (1998).

[64] 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 (2012).

[65] *See*, *e.g.*, McConnell & Servaes, *supra* note 51*;* Stuart L. Gillan & Laura T. Starks, *Corporate Governance Proposals and Shareholder Activism: The Role of Institutional Investors*, 57 J. FIN. ECON. 275 (2000).

[66] Azar, Raina & Schmalz, *supra* note 32; Migliardo & Forgione, *supra* note 20.

[67] Azar, Raina & Schmalz, *supra* note 32.

blockholders and fines when it the holdings of blockholders is regressed alone (*i.e.*, 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 of blockholders, holding the combined ownership of the top five constant, leads to riskier behavior. It is only when very large investors have larger stakes (*i.e.*, the holdings of the top five increases), while controlling for constant levels of blockholders, that we see firms start to adapt less risky behavior, thus the increased presence of very large institutional investors reigns-in the risk-seeking motives of average blockholders. This illustrates the overriding influence from the very largest institutional investors. This influence is likely because of a combination of the decreased competition that comes with common ownership, strong voice to shape managerial behavior[68], and reputational concerns as these large investors would disproportionately face a reputational cost due to excessive risk taking, particularly in the financial services sector after the Financial Crisis of 2007-8 brought about a greater stigma of being attached to bank failures. Our *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 large the influence is from the very largest institutional investors.

Our *ex post* analysis similarly shows that greater holdings by institutional investors generally, and among the top 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[69], 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 meaning that the large institutional investors in these firms are motivated to mitigate any long term reputational damages from what fines are levied through their strong influence on management (*i.e.*, voice channels).[70] However, given a constant level of holdings among the top five largest investors, firms with larger blockholdings overall are punished more severely by the market with more negative adjusted CARs after the announcement of fines (*i.e.*, decreases in market value beyond the dollar value of the fines). Similarly, the presence of larger blockholdings outside of the top five largest institutional investors suggests that such smaller blockholders are more likely to exercise exit and sell shares in reaction to negative news. Again, this mirrors the *ex ante* relationships we found between blockholders and risk-seeking behavior.

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[68] *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 (2017).
[69] *Id.*
[70] For a discussion of the influence of large shareholders on management, *see id.*

4. Governance Rankings

The results of our analyses using third party governance rankings is confirmatory of our findings that better governance is associated with *ex ante* less risky firm behavior as measured by lower fines as well as *ex post* less extreme market reactions to the announcement of fines.

This part of our analysis has a parallel in the approach taken by Peni & Vèahèamaa who used the Gov-Score governance index to test the relationship between bank governance and financial performance during the Financial Crisis of 2007-8.[71] However we use two third party ratings popular with professional investors: Sustainalytics and Bloomberg. Ultimately, our results are not inconsistent with Peni & 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.[72]

We note that, while the Bloomberg rating is not meant to be a ranking of governance quality but rather the extent of disclosure of governance-related data, we nonetheless see that it is statistically significantly related to less fines in our *ex ante* analysis of total firm fines and a more muted market reaction in our *ex post* analysis of adjusted CARs after the announcement of fines. This evidences the importance of disclosure allowing markets to monitor firm behavior and punish transgressions. This illustrates how 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 & Karpoff.[73]

5. Cost of Capital Analysis

Finally, we consider the effects of fines and governance on costs of capital. We consider the most statistically significant governance variables in our prior analyses and examine the resulting relationship with firm cost of debt and firm cost of equity. The results we find are consistent with the relationships we have found in our previous analysis – firms with better governance enjoy lower costs of capital even with the same level of fines. This applies to both cost of debt and cost of equity. Our results are more significant on cost of debt where we find that penalties are a strong predictor of higher cost of debt,[74] and better governance can help to mitigate this impact. While not as large in magnitude or as statistically significant, we still do find governance to have a beneficial impact on cost of equity even controlling for the level of fines.

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[71] Peni & Vèahèamaa, *supra* note 19.
[72] *Id.*
[73] Quentin Dupont & Jonathan M. Karpoff, *The Trust Triangle: Laws, Reputation, and Culture in Empirical Finance Research*, 163 J. BUS. ETHICS 217 (2020).
[74] This is consistent with the reputational effects on borrowing costs found by Graham, Li & Qiu, *supra* note 14; Chava, Huang & Johnson, *supra* note 14; Gu, Hasan & Lu, *supra* note 23.

V

CONCLUSION

In this article, we examine the role of governance on the risk-taking behavior of financial institutions and explore how governance can mitigate market reactions and reputational costs incurred by firms. We provide evidence on the market reaction to the FinCEN leaks and the announcement of regulatory penalties for financial and banking-related offenses. Then, we regress 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, we consider 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, we compare the impact of fines on a firm's cost of capital 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 examine if governance can lessen the market reactions and reputational losses firms suffer. Additionally, while the prior literature is largely focused on examining ex post effects of fines on reputational costs and increased financing costs, we also consider the *ex ante* relationship with governance and ownership to examine to what extent corporate governance might discourage risk taking behavior in regard to regulatory risk and help to foster an 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, we add to the banking literature which has previously focused on the financial and corporate governance drivers of bank failures and bank financial performance because we consider the corporate governance and ownership characteristics on firm behavior by examining imposed penalties and the reputational impacts by examining the market reaction to fines for financial related offenses and the connection with firm cost of capital. Here we also complement the literature by using both *ex ante* and *ex post* perspectives. Furthermore, our dataset is focused on the period after the financial crisis of 2007-8. This is important due to the changing dynamics of the banking sector. Large institutional investors have increased their holdings significantly since 2008.[75] This has resulted in significant common ownership where a small subset of very large institutional investors control large shareholdings across many industries. Azar, Raina & Schmalz have found that this trend has resulted

[75] Fichtner, Heemskerk & Garcia-Bernardo, *supra* note 68.

in decreased competition in the US banking sector.[76] Additionally, the financial crisis of 2007-8 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 earlier bank literature examining corporate governance of banks.

In all, our study also helps to uncover important aspects of what Dupont & Karpoff refer to as the *Trust Triangle* whereby, in addition to legal and regulatory frameworks as well as cultural norms and values, markets also play a significant role in cultivating trust in economic activities.[77] The market does this by punishing economic actors who violate trust and rewarding those with positive reputations. Our research 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.

[76] Azar, Raina & Schmalz, *supra* note 32.
[77] Dupont & Karpoff, *supra* note 73.

Appendix

Table 1 - Variable definitions

This table provides definitions of the variables used in our 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 (i.e. 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. 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)	We use the natural logarithm of a company's assets in order to control for relative size in our 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, we use return on total assets. 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.

	Penalties data is sourced from the Violation Tracker database maintained by the Corporate Research Project. 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. Penalties data is sourced from the Violation Tracker database maintained by the Corporate Research Project. 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. 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. 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 our regressions, we divide this score 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 our regressions, we divide this score by 100. This corresponds to the quotient of the Bloomberg field: "SUSTAINALYTICS_GOVERNANCE_PCT"/100.
Tobins Q	We use Tobin's Q 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, we calculate the ratio of firm debt to total assets. 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. Penalties data is sourced from the Violation Tracker database maintained by the Corporate Research Project. The value for revenues is sourced from the Bloomberg field: “SALES_REV_TURN”.
industry	In our regressions, we use industry group dummies based on the four-digit GICS industry group codes. 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 SARs data

This table reports summary statistics of SARs data. Panel A shows aggregate yearly SARs 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 our 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 percent, **5 percent, and ***1 percent levels.

Panel A. FinCEN Leaks CARs

event window	mean CAR	t-statistic	median CAR	proportion negative CARs	sign test
	1	2	3	4	5
[-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
[-3, -1]	0.027722***	7.51	0.028071	0.11***	-5.72
[0, 3]	-0.02489***	-5.80	-0.026266	0.79***	4.35

* 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
[-5, 5]	0.003199	0.87	0.000858	0.49	-0.34
[-3, 3]	-0.005058**	-2.11	-0.00125	0.51	0.91
[-3, -1]	-0.000400	-0.25	-0.000793	0.52	1.08
[0, 3]	-0.004657***	-2.51	-0.00207	0.54**	2.04

* 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 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 1 capital ratio and ratio of non-performing loans to total loans is 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 1 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 percent, **5 percent, and ***1 percent 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 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 between the three measures of institutional holdings (total percent insider holdings, percentage held by institutional blockholders, and percentage held by the top 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 percent, **5 percent, and ***1 percent 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 dependent variable in Panel B is the adjusted CARs for the post-announcement window (day t=0 to day t=3). We use the Sustainalytics rating of firm governance quality and the Bloomberg rating of firm governance-related disclosure. While 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 percent, **5 percent, and ***1 percent 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 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 percent, **5 percent, and ***1 percent 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 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 percent, **5 percent, and ***1 percent 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 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 1 capital ratio and ratio of non-performing loans to total loans is 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 1 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 percent, **5 percent, and ***1 percent 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 to 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 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 between the three measures of institutional holdings (total percent insider holdings, percentage held by institutional blcokholders, and percentage held by the top 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 percent, **5 percent, and ***1 percent 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 firm as a proportion of total annual firm revenues ("penalties to revenues"). We use the Sustainalytics rating of firm governance quality and the Bloomberg rating of firm governance-related disclosure. While 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 percent, **5 percent, and ***1 percent 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 percent, **5 percent, and ***1 percent 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 percent, **5 percent, and ***1 percent 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 percent, **5 percent, and ***1 percent 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. We consider 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. We then divide the firms into thirds and for the top and bottom third calculate the mean ownership statistics for the first and last years in our 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 percent, **5 percent, and ***1 percent levels.

While all ownership measures increased over the time period 2006-2017, the increase is greater for the highest fines companies for total blockholder ownership. Conversely, we see that the increases are less for the highest fine companies for total institutional ownership and the ownership percentage of the top five largest institutional ownership. This is consistent with our previous results showing that blockholder ownership is associated with greater fines and total institutional ownership and ownership of the top 5 largest investors is 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 top 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

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