

Does PCAOB Oversight of Broker-Dealer Audits Curb Executive Private Benefits?

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Abstract

We examine whether the Public Company Accounting Oversight Board's (PCAOB) oversight of broker-dealer (BD) audits curbs managerial self-dealing. Leveraging a regulatory transition that culminated in the heightened scrutiny over internal systems and procedures at a subset of BDs, we document a significant decline in executives' backdating of stock gifts executed through affected BDs. This reduction translates to approximately \$100,000 in forgone annual tax benefits per executive. The effect is more pronounced among BDs with weaker pre-existing internal controls, those providing more sophisticated financial services such as financial planning, and those with histories of misconduct. Our study underscores the importance of PCAOB's intermediary oversight in mitigating managerial extraction of private benefits, illustrating that enhanced regulation of financial intermediaries potentially complements direct enforcement actions targeting corporate insiders.

Keywords: *PCAOB, Dodd-Frank, investor protection, tax evasion*

JEL codes: G14, G18, G28, K22, M42

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1. Introduction

Broker-dealers (BDs) are key intermediaries in maintaining market integrity through their regulatory obligations. Section 17(a) of the Securities Exchange Act of 1934 (the Exchange Act) and Bank Secrecy Act require BDs to file suspicious activity reports (SARs) with the Financial Crimes Enforcement Network (FinCEN) when handling potentially unlawful transactions. For example, BDs are obligated to identify and report transactions indicative of financial misconduct, such as tax evasion or date manipulation. However, previous research has shown the widespread occurrence of manipulative practices like backdated insider transactions (Yermack 2009; Avci et al. 2016).¹ The apparent disconnect between BDs’ supposed oversight role and the empirical evidence on manipulative transactions leads one to question whether BDs can serve as an effective governance mechanism in the financial markets.

To examine this question, we exploit a BD-level variation that comes from a change in regulatory environment. This regulatory shift began in 2009 and culminated in 2011 with the Public Company Accounting Oversight Board (PCAOB) adopting the BD auditor inspection program. Before 2009, audits of *privately-held BDs* (i.e., “non-issuer BDs”) were not subject to the same level of scrutiny as publicly-traded BDs. As of January 1, 2009, the PCAOB assumed oversight of audits for *all BDs*, regardless of ownership structure. The PCAOB then began an inspection program for BD audits in 2011. BD audits provide reasonable assurance that BD internal controls, practices, and procedures meet those specified in the Securities and Exchange Commission (SEC) rules and regulations. The quality of BD internal systems and procedures would determine how BDs handle their client transactions (e.g., accurate and timely maintenance of trade records) and their ability to spot orders that could lead to the filing of SARs. The regulatory transition is of particular interest to our study as it effected variation in external scrutiny over BD internal systems and procedures.

Our study is conducted in a context important to the corporate finance literature. In particular, we focus on private benefits in the form of tax savings that executives obtain by backdating

¹Consider the following example: at the end of July 2020, Kodak’s director, George Karfunkel, and his wife reportedly donated 3 million in Kodak shares. At the time, Kodak’s share price was at a local maximum. The gift was nominally worth \$116.25 million, conferring a large probable tax deduction to the Karfunkels. Later, a discrepancy across two different regulatory filings on the donation prompted a discussion about the possibility of the gift transaction being backdated. For more on this, see the following article, <https://www.wsj.com/articles/kodak-director-makes-retroactive-cut-to-huge-charity-stock-gift-11610571219>.

their insider stock gift transactions. Backdating insider gift transactions undermine corporate governance by granting executives undue compensation unrelated to shareholder interests. Further, these tax savings may violate Internal Revenue Service (IRS) rules, rendering backdated transactions unlawful.² Insider stock gifts (and insider trading in general) also serve as an attractive empirical setting, as the data on these transactions allows one to identify executives (and their firms) and to approximate BDs through which the executives execute their trades.

A simple example illustrates our research design. Consider stock gift transactions initiated by executives at Firm A. Broker-Dealer B handles Firm A’s insider transactions. Since the regulatory transition that set off the PCAOB inspection program for BD audits, the probability that a failure in BD internal systems and procedures would be rectified when discovered increased. In the cross-section, privately-held BDs were relatively more exposed to the features of the regulatory transition as they had previously escaped the PCAOB oversight.³ We examine whether stock gift transactions executed through Broker-Dealer B, a privately-held intermediary, exhibit patterns consistent with a reduction in backdating practice *relative* to transactions put through BDs less exposed to the regulatory shift.

We find that tax savings for executives generated from backdating stock gift transactions decrease as the BD internal systems and procedures come under more stringent external scrutiny following the regulatory shift.⁴ The loss in tax savings is estimated to be worth a little more than \$100,000 on average. This finding shows that regulatory scrutiny on intermediaries can be an indirect but effective tool for mitigating executive self-dealing. Our main finding is not driven by insiders switching to different BDs, time-varying industry-level shocks, and factors that are found to be correlated with insider trading profitability in the literature (e.g., Lakonishok and Lee 2001; Skaife et al. 2013).⁵

What explains the BD effect on executive private benefits obtained through backdated stock gift transactions? We conduct additional tests to understand the mechanism(s). We find that

²See IRS Publication 561 for more details on IRS rules.

³For details of the specific rule proposed, see PCAOB Release No. 2011-001 June 14, 2011, PCAOB Rulemaking Docket Matter No. 32.

⁴Following prior literature, we define executives as CEO, CFO, COO, president, chairman of the board, vice chairman, executive vice president, senior vice president, and vice president (Avci et al. 2016; Yost and Yu 2023).

⁵We check the robustness of our main finding by (1) restricting the definition of executives to CEO, CFO, COO, president, and chairman of the board and (2) expanding the definition of executives to that used in Avci et al. (2016).

the loss in tax savings after the regulatory shift is greater in firm-BD pairs for which BDs also serve as registered investment advisory firms (RIAs). Investment advisor representatives (IARs) of RIAs are licensed to provide clients with financial planning and portfolio management services. As such, BDs that are dual-registered as RIAs could advise the sale or donation of insider shares to manage the risk exposure of executives whose financial wealth and human capital value are tied to their firms (Ofek and Yermack 2000).

While our analysis on BDs that are dual-registered as RIAs is informative, it does not suggest that the BDs are *actively* involved in the backdated stock gifts. To examine the possibility that some BDs may be more involved, we focus our next analysis on BDs with individual representatives who serve as certified financial planners (CFPs). CFPs provide financial advice on savings, investments, insurance, and retirement, as well as tax and estate planning services. We find that the reduction in backdating following the regulatory shift is concentrated in BDs that house a higher fraction of CFPs. This suggests that the presence of CFPs matters when executing trades that generate tax savings for executives.

The maintained hypothesis throughout our study is that the regulatory shift improves the quality of BD systems and procedures. Thus, a sufficient cross-sectional variation in the quality of such systems before the regulatory shift is necessary for generating the documented BD effect. We show that the loss in executive tax savings is concentrated in BDs whose representatives have a history of customer complaints and misconduct cases filed against them. Prior research shows that customer complaints and misconduct cases against BDs reflect the quality of financial advice and BD systems and procedures (Dimmock et al. 2018; Egan et al. 2019; Charoenwong et al. 2024). Accordingly, the interpretation of our finding is that the stringent scrutiny over BD internal systems and procedures brought about by the PCAOB led to the reduction in the practice of backdating stock gifts. Also, the BD effect on the loss in tax savings is stronger in BDs that house CFPs with histories of disciplinary action initiated by the CFP board. Finally, the reduction in the practice of backdating is pronounced in transactions executed through BDs whose auditors likely lack experience in BD audits. Altogether, the BD-level cross-sectional results provide insight into the underlying mechanism(s).

We supplement our main results with a series of additional tests designed to mitigate a variety of concerns. These include but are not limited to (1) pinning down the reduction in backdating practice as the driver of loss in tax savings for executives, (2) ruling out other

channels through which the Dodd-Frank Wall Street Reform and Consumer Protection Act (the Dodd-Frank Act) enacted in 2010 could have affected insider trading, and (3) addressing potential misclassification issue with respect to approximating BDs through which executives execute their insider transactions.

Rather than backdating their transactions to maximize tax savings, executives can achieve similar outcomes by timing stock gifts around corporate disclosure. For example, gifting stocks just before the release of adverse earnings news (bullet-dodging) would increase the donation size and tax savings. We document results consistent with our hypothesis that the lost tax savings are driven by the reduction in *backdated* trades, not information-driven trades. Specifically, the loss in tax savings is more pronounced in transactions with a longer time gap between the purported date of the gift and reporting of the transaction to the SEC (i.e., filing delay). Longer filing delays give executives a longer lookback period, during which they can better pick local stock price maxima. Our main finding is also stronger among firms with more volatile daily price paths, as daily price volatility could provide opportune dates for backdating. Furthermore, we fail to find a statistically significant role of BDs on the change in how firms release earnings news after stock gift events, suggesting perhaps that BD systems and procedures have limited influence on information-driven insider trades.

The Dodd-Frank Act effected confounding regulatory changes to the BD industry. For instance, it changed regulatory jurisdiction for “midsize” BDs dual-registered as RIAs from the SEC to state securities regulators. Charoenwong et al. (2019) find that such change in regulation affected the quality of services provided by midsize BDs. The same act also included provisions to minimize the risk of losses in customer assets under BD custody (Charoenwong et al. 2024). Our findings are robust to these potentially confounding changes that transpired around a similar time frame.

Another concern is related to how we determine BDs that handle insider trades. In our study, a “go-to” BD is defined as the intermediary that handles the most trades (in volume) for an insider’s firm during a particular year. We take this approach so that the constructed firm-BD pair represents an economically meaningful linkage, allowing us to empirically observe the BD effects of our interest.⁶ While there may be several sources of concern related to the constructed firm-BD pairs, many stem from the prospect of executives backdating stock gifts through a BD

⁶See Section 3.1.2 for more information on data construction.

(or BDs) other than the go-to BDs, i.e., a measurement error issue. When the measurement error is uncorrelated with *actual* BDs through which executives trade, the matter boils down to the classical issue of attenuation bias. Despite the potential bias, our study provides an economically meaningful estimate, i.e., an average lost tax savings of \$100,000. If, however, a non-zero covariance between the measurement error and accurately identified BDs that execute backdated trades exists, the BD effect of our interest could be biased in either direction (Denteh and Kédagni 2022). For example, executives may trade through BDs that are not disclosed on the SEC forms when backdating stock gifts. We gauge the severity of the bias by setting the gift transactions without BD matches as an alternative control group. Our main coefficient estimate stays virtually the same in statistical and economic significance.

We conduct several supplementary tests. First, we employ a matched control sample of stock gifts to control for observable covariates that could be correlated with both the exposure to the regulatory shock and the outcome of our interest. Second, we examine whether a particular BD or a group of large BDs is driving our results; we do not find that such is the case. Third, including executive fixed effects yields a larger main coefficient estimate, suggesting an economically significant finding at the intensive margin. That is, the tax savings generated through insider stock gifts are lower in the post-regulatory shift period relative to the savings obtained in the pre-regulatory shift period for the same executive in our data. Also, executives with longer tenure incur larger losses in tax savings. As a part of the final set of tests, we examine implications for firm-level gift value and volume and show intensive margin results on both dimensions.

Our study has several implications and contributions. First, we contribute to the literature on the efficacy of auditor public oversight boards (Hanlon and Shroff 2022). Prior studies show that PCAOB inspections (or the threat of such) improve audit quality (Gramling et al. 2011; Lamoreaux 2016; DeFond and Lennox 2017). Others document that the PCAOB oversight generates both capital market consequences and real effects (Gipper et al. 2020; Shroff 2020; Aobdia et al. 2021). Our study uses the shift in public oversight of BD audits as a source of variation in BDs' internal systems and procedures. Our findings demonstrate that the PCAOB oversight translates into a reduction in executive private benefits, providing a novel channel through which the effects of public oversight manifest.

Second, our study offers broader insights into regulatory design and efficiency in curbing

abusive insider trading in particular and other forms of financial misconduct in general. Existing research provides that market abuse can potentially impose significant costs to securities market participants (e.g., Teall 2018). For instance, lack of trust in the stock market deters market participation and depresses trading activities (Guiso et al. 2008; Gurun et al. 2018). Illegal insider trading, in particular, is one such form of market abuse, and there are regulations around it to maintain the integrity and fairness in the stock market (Bris 2005; Bhattacharya 2014). Rule 10b-5 of the Exchange Act sets regulation against trading on material non-public information by insiders. Furthermore, the Sarbanes-Oxley Act of 2002 requires insider trades to be reported within two business days. Such a reporting rule significantly limited the previously documented practice of backdating insider trades (e.g., Avci et al. 2016; Cicero 2009; Collins et al. 2009; Heron and Lie 2007; Yost and Shu 2022). Nevertheless, abusive insider trading still persisted in the form of, for example, stealth trading (Betzer et al. 2015) and backdated stock gifts (Yermack 2009). In this study, we show evidence consistent with the idea that outsourcing securities market enforcement to well-informed private entities (e.g., financial intermediaries) can improve regulatory efficiency as long as direct regulation over individuals' actions that constitute financial misconduct is more costly. In fact, in April 2023, the SEC implemented the two-day reporting requirement for bona fide insider stock gifts to limit executives' discretion in backdating their trades. Our findings suggest that the practice of backdating stock gifts was reined in to a significant extent well before this change.

Finally, we add to the literature on the private benefits of control and external governance systems in a corporate setting. Executive private benefits and their relation to the development of financial markets and corporate finance have received much academic attention (e.g., Jensen and Meckling 1979; La Porta et al. 1997, 2000; Dyck and Zingales 2004). Prior literature shows that governance mechanisms external to corporations are important in determining market capitalization, cost of capital, ownership structure, and more (e.g., Claessens et al. 2002; Shleifer and Wolfenzon 2002; Desai et al. 2007). These findings are predicated on the notion that the external governance mechanisms help “suppliers of capital assure themselves a return on their investment” (Shleifer and Vishny 1997). Our study shows that regulation over financial intermediaries can limit managerial self-dealing and costly corporate-level consequences (e.g., litigation and reputational damage).

2. Broker-Dealer Oversight and Stock Gifts

2.1. *Broker-Dealers as a governance mechanism*

According to the Financial Industry Regulatory Authority (FINRA), there were 3,378 FINRA-registered BD entities represented by 620,882 registered securities professionals as of 2022, generating \$351 billion in revenue and \$42 billion in pre-tax profits. BDs provide a wide-ranging collection of products and services, such as market-making, institutional brokerage, custody of customer assets, and clearing and executing trades. As financial intermediaries with broad reach in the U.S. financial markets, BDs are often a key piece in regulatory developments and designs intended to protect the integrity and fairness in financial markets. In particular, BDs play an important role in *detecting* instances of market abuse, such as market manipulation and illegal insider trading, and in *assisting* regulators with enforcing regulatory compliance on securities market participants.

In particular, Section 17(a) of the Exchange Act and Bank Secrecy Act require BDs to report suspicious transactions to the Financial Crime Enforcement Network (FinCEN). This requirement is further reinforced by the FINRA rules (e.g., FINRA rule 3110) that require BDs and their representatives to comply with federal securities laws. Effectively, these regulatory mechanisms drive BDs to implement systems and procedures to red-flag trade orders suspected of being unlawful.⁷ Thus, under the current regulatory system, corporate insider transactions that violate relevant securities laws (i.e., Section 10(b) of the Exchange Act) could be picked up by the internal control systems and procedures of BDs and reported to regulatory authorities for further investigation and, ultimately, prosecution. Statistics provided by the FinCEN indicate insider trading cases comprising a non-negligible portion of the Suspicious Activity Reports (SARs) filed with the FinCEN. Broadly, the filings furnished by the securities/futures industry on cases related to potential violations of securities law and other federal regulations (e.g., tax evasion) that may pertain to backdated transactions ranked in the top-20 list of SAR types filed over 2014 to 2023. This is shown in Figure 1. SARs filed on insider trading cases totaled 18,280, making up about 2 percent of the total SARs filed over the same period.⁸ The information content of SARs

⁷See <https://www.finra.org/rules-guidance/key-topics/fintech/report/artificial-intelligence-in-the-securities-industry/key-challenges>.

⁸Please visit the following SARs Stats webpage for more information: <https://www.fincen.gov/reports/sar-stats>.

is also shared with various law enforcement agencies. For example, the Criminal Investigation Division of the IRS relies on SAR data to investigate and prosecute financial crimes, including tax fraud.⁹ Provided that BDs have in place well-functioning systems and procedures that render the SARs process effective, BDs can play an important role in limiting executives' consumption of private benefits obtained through implementing an aggressive tax planning strategy (e.g., backdated insider stock gifts).

2.2. *Regulatory shift in broker-dealer industry*

The effectiveness of the SARs process depends on the quality of internal systems and procedures that BDs maintain to comply with federal regulations and FINRA rules. The quality of BD systems and procedures could vary in the cross section for several reasons. For instance, resource constraints could preclude some BDs from investing in technologies and human capital required for setting up compliance systems. More pertinent to our study, BD internal systems and procedures undergo *external* scrutiny as a part of the audit process. Under Rule 17a-5 of the Exchange Act, BDs must file audited annual reports with the SEC. BD audits follow the generally accepted auditing standards (GAAS) and include a review process that provides “reasonable assurance that any material inadequacies in the accounting system, internal accounting controls, procedures for safeguarding securities, and the practices and procedures” of the BDs would be disclosed (SEC 1975). The variation in the quality of BD internal systems and procedures could come from the heterogeneity in strictness of the aforementioned BD audit process. In fact, in the past, a quirk in the regulatory process of BD audits potentially generated significant heterogeneity in the strictness of BD audits and, therefore, in the quality of BD systems and procedures.

With the enactment of SOX in 2002, BD audits came under the oversight of a quasi-governmental regulator, the Public Company Accounting Oversight Board (PCAOB). That is, auditors who conduct BD audits were required to register with the PCAOB. Before this requirement, BD audits were subject to self-regulation under the American Institute of Certified Public Accountants (AICPA) peer review program; this peer review program gave the audit firms the discretion to select their reviewers. Thus, the PCAOB registration requirement for

⁹Please see <https://www.irs.gov/compliance/criminal-investigation/irs-criminal-investigation-bsa-data-is-key-to-unlocking-financial-crimes>.

BD auditors signified a shift from self-regulation to public oversight of BD audits. The quirk in the regulatory process of BD audits that generated the heterogeneity in scrutiny of the BD audit process is the exemption of auditors of *privately* owned BDs from the PCAOB registration requirement. In turn, this difference in oversight of BD audits potentially created a quality gap in BD systems and procedures between privately- and publicly-held BDs as the internal systems of publicly-held BDs likely went under greater external scrutiny.

Our study exploits the regulatory transition that closed the oversight gap between privately- and publicly-held BD audits. Specifically, as of 2009 *all*, BD auditors are mandated to be registered with the PCAOB, effectively requiring all BD audits to come under the oversight of the PCAOB. Provided that relatively small portion of BDs in the cross section were affiliated with public company at the time, the regulatory change in 2009 marked a significant transition for the BD industry.¹⁰ This lifting of the exemption of auditors of privately-held BDs from the PCAOB registration requirement in 2009 heralded a period of regulatory transition in the BD industry. As part of the Dodd-Frank Act, beginning in 2010, the PCAOB was explicitly given the authority to conduct inspections, set standards, and enforce rules and regulations over BD audits. In the following year, the PCAOB implemented an inspection program over BD audits (PCAOB 2011).¹¹ This shift in oversight was not driven by concerns about insider trading or stock gifting practices, but rather by broader goals of strengthening financial market oversight following the 2008 financial crisis.

A key milestone in this regulatory transition period was the adoption of the aforementioned inspection program over BD audits in 2011. This program was designed to assess the effectiveness of BD audits and inform the development of a permanent inspection regime. The initial findings from this program revealed widespread deficiencies, with audit deficiencies identified in 95 percent of the engagements reviewed. As a part of its process, the inspection program examined audit procedures designed to report any material inadequacy in BD systems and procedures that could ultimately violate the SEC rules and regulations (PCAOB 2012). In relation to our study, BD internal systems that handled transaction orders from clients likely came under greater scrutiny with the implementation of the inspection program. Figure 2 encapsulates the

¹⁰Only about 10 percent of BD audits were subject to the PCAOB oversight before 2009 (Schnader et al. 2019).

¹¹As the largest reform to the financial services sector since the Great Depression, along with these changes in BD audit regulation, some BDs may have been affected by other provisions of the Dodd-Frank Act. We will consider these major changes in our robustness analyses to pin down the effects of the BD audit regulatory changes.

above discussion on the change in the regulatory landscape for BDs.

The regulatory changes provide a useful setting to examine whether enhanced oversight of BD systems affects executive trading behavior. The implementation of these changes, coupled with the variation in BDs' pre-existing exposure to PCAOB oversight, allows us to identify the effects of improved internal controls on executive stock gift practices.

2.3. Private benefits and insider stock gifts

Executives who give away their insider holdings as bona fide gifts can obtain two attractive tax benefits. First, the gift's fair market value is tax deductible for the donating executive. Second, the donor escapes capital gains tax on unrealized capital gains; capital gains tax on unrealized gains would be owed, however, if the insider holdings were sold instead. The value of these tax benefits depends on several factors. Under the assumption that insider holdings have accumulated unrealized capital gains, the value of tax benefits would be increasing in both the capital gains tax rate and the spread between the original cost basis and fair market value of the holdings at the time of the gift. Furthermore, the size of the tax deduction would increase in both the executive's marginal tax rate and the fair market value of insider holdings at the time of the gift.

Existing literature documents at least one way to increase the value of tax benefits from gifting insider holdings. Executives can obtain tax benefits that would otherwise not be available by retroactively dating stock gift transactions to dates associated with local maximum points in their corporations' stock price histories (Yermack 2009; Avci et al. 2016). This practice of backdating stock gift transactions to garner greater tax benefits is in clear violation of IRS rules on determining the value of donation. IRS rules specify that the value of share donation should equal the average of the highest and lowest quoted ask on the *actual* date of the transfer of shares.¹² In sum, reaping tax savings from backdated insider gift transactions could constitute fraud under federal tax laws as it would involve falsifying the date of stock gifts and the associated value of the donation.

What contributed to the widespread practice of backdating stock gift transactions is the rather soft insider trading regulation around it. Under Section 16(a) of the Exchange Act, cor-

¹²See IRS Publication 561 for more details on determining the value of the donated property at <https://www.irs.gov/pub/irs-pdf/p561.pdf>.

porate insiders and 10 percent shareholders must publicly disclose insider transactions (including stock gifts). SOX further required that open market sales and purchases of corporate insider holdings be reported on Form 4 within two business days from the transaction date. Stock gift transactions, however, were exempted from this two-day reporting rule. Until April of 2023, stock gift transaction was to be recorded on Form 5 (with the option to be reported on Form 4) within 45 days after the end of the fiscal year.¹³ This meant that a stock gift transaction could be reported more than a year after the purported date of transfer. Effectively, this less stringent reporting rule gave corporate executives a longer lookback period, which would have facilitated the practice of backdating.¹⁴

Our study proxies for private benefits of corporate executives using stock gift transactions suspected to have been backdated for several reasons. First, tax benefits from backdating stock gift transactions effectively increase compensation for corporate executives. These tax savings are awarded to executives without commensurate increases in corporate performance, as backdating entails the current stock price being relatively lower than what it had been in the past. As such, backdating stock gift transactions could amount to “pay-for-no-performance,” i.e., a corporate governance failure. Second, if caught by either tax authorities or securities market regulators, executives and their firms could be criticized for the potentially fraudulent tax savings strategy. Any litigation and/or reputational costs related to the practice of backdating would then be borne by shareholders.

2.4. *Hypothesis Development*

We posit that the regulatory transition that began in 2009 in the BD industry likely affected stock gift transactions by corporate executives through several channels. First, the PCAOB registration requirement for all BD auditors effective from fiscal year 2009 was an initial signal of impending heightened scrutiny of BD systems and procedures. This registration requirement was especially relevant for auditors of privately held BDs, as SOX had previously exempted these auditors from the PCAOB registration requirement. Second, in 2010, the Dodd-Frank Act

¹³The SEC now requires the two-day reporting rule for corporate insiders making stock gifts. This change became effective on April 1, 2023. Please see <https://www.sec.gov/newsroom/press-releases/2022-222>.

¹⁴See Avci et al. (2016) and Avci et al. (2021) for a more discussion on the value of tax deduction on charitable donations (e.g., adjusted gross income limitations) and for a taxonomy of aggressive tax saving strategies with respect to corporate insider stock gifts.

gave the PCAOB explicit authority over BD auditors to conduct inspections, standards-setting, investigations, and disciplinary actions. Together with the PCAOB registration requirement, the Dodd-Frank amendments to SOX with respect to the oversight of BD audits served as an indicator of revamping the existing BD audit process for the years to come. Finally, the launch of the PCAOB inspection program in 2011 would have prompted both BDs and their auditors to remediate weaknesses in BD systems and procedures, effectively demarcating the beginning of a period with more regulatory scrutiny in the BD industry. In sum, we hypothesize that the regulatory reforms and their associated effects on BD systems and procedures limited the extent to which corporate executives consume private benefits through backdated insider stock gifts.

3. Data and Methodology

3.1. Data

Our main sample for analyses comes from merging across (1) insider stock gift transactions, (2) BD data, (3) auditors of BDs, and (4) other sources for stock and company characteristics.

3.1.1. Insider stock gift transactions

We construct our sample from the insider trading data in the Thomson Reuters Insider Filing Data Feed ("Insiders Database"). This database provides information on all insider trades reported to the SEC on Forms 3, 4, 5, and 144.¹⁵ The sample for our study includes common stock dispositions by way of gift (i.e., dispositions with transaction code "G") by the Chairman of the Board (CB), Vice Chairman (VC), Chief Executive Officer (CEO), Chief Financial Officer (CFO), Chief Operating Officer (CO), President (P), Executive Vice President (EVP), Senior Vice President (SVP), and Vice President (VP).¹⁶ Our study covers insider stock gift transactions from January 2005 to December 2015. We treat insider stock gift transactions reported on the same day by the same individual as a single observation (i.e., a single incidence of gift transaction). To ensure the accuracy of the reported insider stock gift transactions, we follow the prior studies on insider trading and limit our sample to transactions with cleanse

¹⁵The federal securities laws require corporate officers and directors and individuals that hold more than 10% of any class of a company's securities to report dispositions and acquisitions of their insider holdings by filing Forms 3, 4, 5, and 144.

¹⁶We explore alternative definitions of corporate executives as robustness tests later.

codes “R” or “H” (Bebchuk et al. 2010; Avci et al. 2021; Yost and Shu 2022). Finally, we exclude gifts not directly owned by the insider, with missing transaction dates or SEC report dates and no match to stock return information from the Center for Research in Security Prices (CRSP) database.

3.1.2. *Broker-Dealers*

We obtain the identity of BDs that executives trade through on Form 144; information on Form 144 is available in the aforementioned Insiders Database.¹⁷ Rule 144 of the Securities Act of 1933 requires executives to file Form 144 with the SEC when disposing of unregistered shares. This process involves indicating the identity of a corporate executive, disposition date, quantity of shares, and the identity of BD that will execute the disposition.¹⁸ BDs are identified by their names on Form 144. We manually process the BD names, hand-match the BD names to those on the BrokerCheck database, and assign to each BD its Central Registration Depository (CRD) number, the BD identifier maintained by FINRA. Using the identities of corporate executives on the Insiders Database, we match the BDs to firms that corporate executives work for. We identify a firm’s “go-to” BD by pinning down the BD that handles the most insider trades (in volumes) for the firm during a particular year. This approach allows us to capture economically meaningful firm-BD pairs/relationships in our sample; it also helps us approximate the identity of the BD through which executives at a particular firm trade when executing their stock gift transactions during the year.

Some insider transactions lack BD matches in Form 144 due to potential filing errors or omissions, and it is possible that the “go-to” BD classification is noisy if a firm’s executives work with more than one BD to execute their insider trades. More importantly, executives could strategically choose different BDs for different types of transactions - potentially using one BD for routine trades and another for backdated gifts. However, if executives systematically avoid disclosing BDs for backdated transactions, choose BDs with weaker internal controls in the pre-period, or strategically report different BDs for gift versus non-gift transactions, this selective

¹⁷Li et al. (2021) is another paper that makes use of Form 144 to identify BDs that work with firms.

¹⁸Specifically, Form 144 is filed before disposing of unregistered shares. Rule 144 requires filing Form 144 when the proposed sale of shares during any three-month window exceeds 5,000 shares or \$50,000. Please see the following for more information on Rule 144: <https://www.investor.gov/introduction-investing/investing-basics/glossary/form-144>.

reporting would bias against finding our hypothesized effect, because such strategic behavior would weaken the connection between our BD treatment classification and actual backdating activity. To validate that our results are not driven by BD matching procedures, we conduct robustness tests later in Section 4.3 using the unmatched insider transactions as an alternative control group and also evaluate whether there is any systematic misclassification by evaluating the unmatched group’s post-gift stock performance (Supplementary Appendix Table 12).¹⁹

3.1.3. Auditors of broker-dealers

The data on BD auditors comes from Audit Analytics (AA), which provides comprehensive coverage of audit firms and their clients. We use the SEC file number to link auditors to the set of BDs identified in Form 144, i.e., a unique identifier for BD in both BrokerCheck and AA database. The AA database is especially important for our study as we use this database to identify BDs that are relatively more exposed to the regulatory transition. Specifically, with the AA database, we define BDs as relatively more exposed if their auditors only had privately held clients as of 2008, i.e., before the regulatory transition period.

3.1.4. Other data

We obtain firm- and security-level information from several data sources. Firm size, book-to-market, return on assets, sales growth, and research and development expenditures come from Compustat. Governance-related measures come from Refinitiv Fundamentals. Cumulative abnormal returns, stock price, volatility, and past return information are obtained from CRSP. We also access the Thomson Reuters Institutional Ownership database to compute firm-level institutional ownership. In addition to the CRD number unique to each BD in our data, the BrokerCheck database provides information on customer complaints filed against BDs and other BD-level characteristics explored in our study.

¹⁹The stability of our main coefficient estimates across this alternative control group and null results on changes in post-gift returns for the unmatched sample suggests that the classification procedure does not appear to be driving our main findings.

3.2. Empirical design

Our workhorse variable is the cumulative abnormal stock return (CAR). Following Yermack (2009), CAR is the difference between a stock’s raw return and the CRSP equal-weighted market return, and it is measured over 20 days following each insider stock gift event by an executive (i.e., $CAR_{[t+1,t+20]}$). As discussed, backdated insider stock gift transactions follow run-ups and precede a steep decline in stock prices. We focus on the post-gift stock price decline precisely because this is one of the distinguishing features of backdated insider stock gifts. Retroactively documenting insider gift transactions to maximize tax deductions entails the gift transactions transpiring at peaks in stock prices. This pattern is not like that of charitable contributions in general. Charitable contributions (in dollars) follow past run-ups in broad market indices but do *not* necessarily precede declines in value (List 2011).

We examine the change in post-gift 20-day CAR following the regulatory transition in the BD industry using the empirical model below:

$$CAR_{h,i,t}^{[t+1,t+20]} = \alpha_{i,j} + \alpha_{k,t} + \beta Treated_i \times Post_t + \Gamma' X_{h,i,t} + \varepsilon_{h,i,t} \quad (1)$$

where h indexes individual stock gifts, i indexes firms, j indexes BDs, k indexes industry, and t indexes years. The term $Treated_i$ is an indicator variable that equals one for insider stock gift transactions at firm i whose BD was subject to audit procedures free of PCAOB oversight before the regulatory shift in the BD industry. $Post_t$ is an indicator variable that equals one for 2011 and the subsequent years in our sample. 2011 was the year during which the PCAOB implemented its interim inspection program to assess the effectiveness of BD audits. As BD internal systems and procedures that previously escaped the PCAOB oversight likely came under greater scrutiny with the implementation of the inspection program, we set 2011 as the year that demarcates pre- and post-regulatory shifts in the BD industry. $X_{h,i,t}$ is a vector of control variables, including the log gift value, past one-year stock return, stock return volatility, log market capitalization, book-to-market, return on assets, sales growth, R&D indicator, and institutional ownership percentage. Many of these variables are documented to be correlated with insider trading profitability (e.g., Lakonishok and Lee 2001; Skaife et al. 2013). $\alpha_{i,j}$ and $\alpha_{k,t}$ represent firm-BD pair and industry-year fixed effects, respectively. Firm-BD pair fixed effects account for firm-BD pair time-invariant heterogeneity. Industry-year fixed effects account for

industry-specific trends for the firms in our sample. We cluster standard errors two ways by firm and BD as these two dimensions determine the level of treatment assignment (Abadie et al. 2023). The coefficient of interest, β , reflects the difference in post-gift 20-day CAR changes for transactions executed through treated and control BDs around the regulatory change. For example, if backdating stock gift transactions are affected by the stricter scrutiny placed on BD systems and procedures due to the regulatory change, then β would be positive.

An identification concern is the endogenous matching between firms and broker-dealers. Firms and BDs likely form relationships based on unobservable characteristics that could be correlated with both backdating propensity and exposure to regulatory oversight. For instance, firms with weaker corporate governance may systematically match with BDs that have less stringent internal controls. The firm-BD pair fixed effects mitigate this concern by absorbing time-invariant factors that drive the matching between firms and BDs, including unobservable firm and BD characteristics that influenced the initial formation of their relationship. As the identification comes solely from within-pair variation over time, we are comparing how the same firm-BD relationships change after the regulatory shift. This approach effectively controls for selection on both observable and unobservable time-invariant characteristics that determine firm-BD matching.

Absent the regulatory shift, the average change in post-gift 20-day CAR for insider stock gift transactions executed through treated BDs would have been the same as that for transactions executed through control BDs. The key identifying assumption in our design is that, conditional on the fixed effects, the timing of the regulatory change is exogenous to any time-varying factors that might simultaneously affect both the firm-BD matching and backdating behavior. While we cannot completely rule out time-varying confounders, our evidence on the stability of firm-BD relationships throughout the sample period (as shown in Figure 10) suggests that firms rarely change BDs and there does not seem to be a spike around the transition period. Later in our study, we examine the plausibility of the identifying assumption by performing a multitude of cross-sectional analyses and tests that are standard in the literature (e.g., parallel trends plot).

3.3. Descriptive statistics

Table 1 reports descriptive statistics. Our sample covers insider stock gift transactions from January 2005 to December 2015. Panel A of Figure 3 depicts the value of insider stock gifts over our sample period. In dollars, executives in our sample seem to be giving away at least \$100 million every calendar quarter. A seasonal pattern in the aggregate value of insider stock gifts is also observable. Executives give away their insider holdings the most in the fourth quarter of every year. Specifically, Panel B of Figure 3 shows that insider stock gift transactions are concentrated yearly in December. Panel A of Table 1 reports transaction-level characteristics. The average incidence of insider stock gift transactions is worth approximately \$1 million. The average gift transaction takes about 65 days to be reported to the SEC. The *pre*-gift 20-day CAR is, on average, a little more than 2 percent. This average run-up in stock price precedes the post-gift stock price decline of about -0.6 percent—measured in post-gift 20-day CAR. In total, our sample consists of 14,243 insider stock gift transactions. About 12 percent of the insider transactions in our sample are initiated by executives within firms whose go-to BDs escaped the PCAOB oversight before the regulatory shift.

Panel B reports the characteristics of firms from which the insider gift transactions transpire. The average firm exhibits a past stock return of 21.3 percent and 10.4 percent in return volatility. Market capitalization and return on assets are around \$1.8 billion and 4.3 percent on average. The documented descriptive statistics for other firm characteristics (i.e., book-to-market, sales growth, and research and development expenditures) are all in line with those found in the literature (Skaife et al. 2013). For the average firm, institutional ownership is 63.5 percent. Finally, Panel C reports BD characteristics. On average, 52.3 percent of BD employees are dually registered as investment advisors, and 7.7 percent of BD employees have a complaint on their record.²⁰

²⁰All variables are defined in Appendix A.

4. Results

4.1. Graphical evidence

Figure 4 provides CARs around the dates of the stock gift transactions completed before and after the implementation of PCAOB’s interim inspection program. For each gifted stock i , we obtain abnormal returns over $[-20,+20]$ event window around the date of the gift transaction. Abnormal return, $AR_{i,d}$, for stock i on day d is defined as daily stock return, $r_{i,d}$, minus the return on CRSP equal-weighted market index, $r_{market,d}$. We then compute the average abnormal return for each day d over the $[-20,+20]$ event window for transactions transpiring in 2005-2010 (pre-period) and 2011-2015 (post-period). CARs for insider stock gift transactions in pre- and post-periods show a clear difference in pattern. Gift transactions in both periods follow stock price run-ups on average. Gift transactions placed in the pre-period precede negative returns, whereas post-gift returns for gift transactions placed in the post-period remain flat on average. This change in the shape of the return pattern is suggestive of the regulatory shift in the BD industry affecting how executives choose the date of stock gift transactions.

Hidden behind the change in stock price path for the average gift transaction is a cross-sectional factor that seems to be driving the phenomenon. The effects of regulatory reform on BD systems and procedures are likely pronounced for those BDs whose audit processes had previously escaped public oversight. We group the insider stock gift transactions executed through these BDs (i.e., *Treated* transactions) and compare the change in stock price paths for these transactions to those executed through the rest of the BDs in our sample (i.e., *Control* transactions). Figure 5 depicts CARs for *Treated* (Panel A) and *Control* (Panel B) transactions before and after the implementation of PCAOB’s interim inspection program. A clear pattern emerges. The stock price paths for insider stock gift transactions executed through BDs that escaped the public oversight on their audits exhibit a marked, inverted V-shape. This pattern flattens out for the *Treated* transactions placed after the implementation of the inspection program. As seen in Panel B, the change, if any, in stock price paths for *Control* transactions over pre- and post-period is minor.

CARs shown in Table 2 echo the graphical evidence presented in Figure 5. The average stock price rally and decline are more pronounced in magnitude for *Treated* transactions before the arrival of PCAOB interim inspections on BD audits. Generally, the rally in stock prices

before insider stock gift transactions applies to both *Treated* and *Control* transactions in pre- and post-periods. However, the decline in stock prices after the gift completely disappears for *Treated* transactions placed in the post-period period. The descriptive evidence documented across Figures 4 and 5 and Table 2 altogether suggests that the practice of backdating insider stock gifts may have been limited by the stringent external scrutiny placed on BD systems and procedures.

4.2. Main results

We report our main results in Table 3. Recall that the key milestone during the regulatory transition in the BD industry was the adoption of the PCAOB’s interim inspection program over BD audits in 2011. We find that the practice of backdating insider stock gift transactions declined as the external scrutiny on BD systems and procedures became more stringent in the years starting from 2011. The coefficient estimate of interest, β , in column (1) implies that $CAR_{h,i,t}^{[t+1,t+20]}$ increases by 1.6 percentage points on average. The coefficient estimate is statistically significant at the 5 percent level. The increase in post-gift 20-day CAR by 1.6 percentage points reverses the average price decline shown in Table 2 for the *Treated* transactions executed before 2011.

Our finding in column (1) is economically meaningful. If we assume that the timing of insider stock gift transactions is random, then the distribution of $CAR_{h,i,t}^{[t+1,t+20]}$ across gift transactions would be symmetric with a mean of zero. The data suggests otherwise. $CAR_{h,i,t}^{[t+1,t+20]}$ is negative for about 55 percent of gift transactions completed before 2011, implying that roughly 10 percent of the transactions could be backdated. It would require about a 16.5 percent decline in the value of stocks associated with backdating to generate the average price decline of 1.7 percent (shown in Table 2) for the *Treated* transactions placed before 2011. Tax savings from backdating stock gift transactions can be approximated by calculating the value of tax deductions that would have been lost if the transactions were not completed at price peaks. This translates to tax savings of 40 percent of 16.5 percent when combining federal and state tax rates.²¹ In dollars, backdating insider stock gift transactions confer close to \$103,000, provided that the average annual gift value is about \$1.56 million for executives in our sample. This tax savings figure is

²¹We assume executives face a federal tax rate of 37 percent and a state tax rate of 3 percent. We acknowledge that the state-level tax benefit from charitable contributions could be either higher or lower in practice.

likely a conservative estimate as we do not account for capital gains tax savings from donating insider holdings.

Across columns (2) and (3) of Table 3, we examine whether the time between the purported date of the gift transaction and the date of reporting to the SEC (i.e., filing delay) matters. A long filing delay is associated with a broader range of dates to which an executive may backdate gift transactions. We re-estimate equation 1 after partitioning our sample into two groups of insider stock gift transactions: (1) gifts transpiring in firms with the pre-2009 average filing delay of more than 10 days and (2) remaining gifts. The coefficient estimate in column (2) suggests an increase of 3.0 percentage points of $CAR_{h,i,t}^{[t+1,t+20]}$ after the adoption of the PCAOB’s interim inspection program. The economic magnitude is nearly double that of the full sample finding in column (1). As shown in column (3), we fail to find any meaningful change in post-gift 20-day CAR for stock gift transactions that are reported to the SEC in a relatively timely manner.

Overall, the estimates presented in Table 3 are consistent with BDs playing an important role in executives’ consumption of private benefits. Our results show that the heightened regulatory scrutiny of BD systems starting in 2011 significantly curtailed executives’ ability to exploit stock gift backdating, resulting in lower tax-related private benefits.

Dynamic effects. A potential threat to our empirical design is that the regulatory transition in the BD industry is an endogenous outcome of a pre-existing shock to financial misconduct for executives that trade through the *Treated* BDs in our data. If such were the case, we would observe an “effect” just prior to the start of the regulatory shift. To investigate this concern, we estimate the following empirical model:

$$CAR_{h,i,t}^{[t+1,t+20]} = \alpha_{i,j} + \alpha_{k,t} + \sum_{\tau=2005}^{2008} \beta_{\tau} Treated_i^{\tau} + \sum_{\tau=2010}^{2015} \beta_{\tau} Treated_i^{\tau} + \Gamma' X_{h,i,t} + \varepsilon_{h,i,t} \quad (2)$$

where we fully interact $Treated_i$ variable with time dummies and set 2009 as the base year. Definitions for the subscripts and variables follow those defined in Section 3.2. The coefficient estimates of interest, β_{τ} , are plotted in Figure 6.

The difference in post-gift 20-day CARs for *Treated* and *Control* transactions do not seem systematically statistically significant before 2009. It becomes statistically and economically significant *after* the start of the regulatory shift, particularly with the beginning of the BD auditor

inspection program in 2011, and stays that way in the following years. More importantly, β_{2008} is small and statistically insignificant. This helps alleviate the potential endogeneity concern and gives us the confidence that we are identifying a unique and persistent effect on the post-gift downward drift in stock price at the time of the regulatory shift in the BD industry. That is, the documented BD effect can be attributed to the change in scrutiny placed on BD systems and procedures.

4.3. *Robustness*

Not finding a systematic pattern in our outcome variable prior to the regulatory shift mitigates potential concerns about inferences based on our empirical design. However, there still are several remaining concerns. In the following sections, we discuss and address them.

Backdated or informed stock gifts. The proposed explanation behind the empirical findings thus far is that the documented BD effect is driven by the reduction in the practice of backdating insider stock gift transactions. This explanation is premised on the idea that adequate BD systems and procedures (e.g., maintenance of accurate and timely transaction records) can limit the manipulation of transaction-level specifics. Nevertheless, another potential explanation remains. Insiders could execute well-timed gift transactions relying on their information advantage, e.g., executing gift transactions just before firm-level adverse news releases (“bullet-dodging”). Up to this point, our maintained assumption is that any change in BD systems and procedures due to the regulatory shift would have limited effect in “policing” insider transactions that rely on non-public, material information. This is because BDs are presumably at an information disadvantage *until* the corresponding insider trades are placed through them.

Table 4 provides three tests to corroborate the proposed explanation and help validate the maintained assumption. First, we partition our sample of transactions into those associated with the above and below the median value of firm-level daily return volatility, measured in the reported year of gift transactions. After accounting for this firm-level heterogeneity, We re-estimate equation (1). Since backdating stock gifts involves picking a local maximum point in the stock price path, the documented BD effect should be more pronounced for transactions from firms with relatively more volatile price paths. Column (1) shows findings consistent with

the idea. The economic magnitude is more than double that of the main finding in Table 3, and the coefficient estimate is statistically significant.

In the remaining two tests reported in columns (2) and (3) of Table 4, we replace the outcome with two variants of $\mathbb{1}(EarningsAnn.)$. Specifically, we examine whether there is any change in the pattern of earnings announcements made within 20 or 60 calendar days from the reported date of gift transactions. If the regulatory shift in the BD industry affected informed, as opposed to backdated, insider stock gift transactions, we would expect fewer earnings news releases following gift transactions in the post-regulatory shift periods. We do not find a statistically significant change in the timing of post-gift earnings announcements. This suggests that the documented BD effect, if any, is muted for informed insider stock gift transactions.

Confounding regulatory changes. Our results are robust to several other potentially confounding regulatory shifts due to the Dodd-Frank Act. For example, to free up resources at the SEC to better regulate “private funds,” the Dodd-Frank Act shifted regulatory jurisdiction over “midsize” registered investment advisors (RIAs) from the SEC to state oversight. Charoenwong et al. (2019) find that this event led to a decline in the quality of services provided by those RIAs that transitioned into the state oversight regime. In regards to our study, BDs dual-registered as RIAs in our data could be systematically affected by the shift in regulatory jurisdiction over RIAs. Subsequently, trades placed through the dual-registered BDs may have reflected changes that are difficult to identify and control for in the data. As a robustness check, we identify the “midsize” BDs (i.e., BDs with assets under management of \$100 million or less) and drop them from our sample. Column (1) of Table 5 shows that our coefficient estimate of interest remains qualitatively the same, and the standard error actually becomes more precise.

Another is the amendments made to SEC Rule 17a-5 in 2014 that required BDs to furnish “compliance reports” to attest to the adequacy of internal controls over compliance with the Financial Responsibility Rules (e.g., Rule 15c3-1 or Net Capital Rule). This regulatory change applied to BDs holding assets on their customers’ behalf (i.e., carrying BDs). The introduction of the amendments presents another channel through which internal systems and procedures of BDs may have been affected. To address the concern that the amendments could potentially drive the difference in our outcome variable between *Treated* and *Control* transactions, we retain a sample of carrying BDs; the idea is that all BDs in this sample are affected by the amendments

similarly. We identify the carrying BDs following Charoenwong et al. (2024). Column (2) of Table 5 shows our findings from re-estimating equation (1). The findings are qualitatively similar to our main results.

There are also other parts of the Dodd-Frank Act of 2010 that came into effect in 2014, touching on myriad aspects of the financial system. For example, it affected regulatory topics covering financial stability, consumer protection, proprietary trading by banks, investor protection, and so forth. As a regulation that was meant to generally improve governance in financial markets through a variety of mechanisms, it could bias our documented BD effect in ways that are difficult to account for. We take a “catch-all” approach and drop those transactions transpiring in 2014 and after to check the robustness of our main findings. As shown in Column (3) of Table 5, the results remain qualitatively similar to our main results.

Other confounding factors and persistence. Broad market conditions began to improve in the first quarter of 2009 after the Great Recession of 2007-2008. It is possible for some executives in the cross-section to backdate their stock gift transactions more heavily following the economic recovery. This strategy would be especially valuable for those executives realizing greater ordinary income during the economic upturn. A potential concern regarding our empirical design is that our main finding on $CAR_{h,i,t}^{[t+1,t+20]}$ is just a reflection of the change in when and how executives gave away their insider holdings as macro factors took a positive turn. We re-estimate equation 1 after dropping years 2009 and 2010 to ensure that our main finding is driven by the fundamental change in BD regulation, not the potential temporary change in the trading behavior of executives. As shown in column (1) of Table 6, our sample size declines by 13.9 percent. The coefficient estimate of interest, β , becomes larger in economic magnitude while retaining statistical significance.

According to our discussion throughout this study, the BD effect we document should be (1) persistent long after the start of the regulatory shift and, (2) immune to temporary developments in macro factors that would change the gifting behavior of executives. Specifically, a persistent BD effect on private benefits consumed by executives through backdating would mean that post-gift 20-day CAR would remain flat well beyond our sample period. We carry out a descriptive analysis using COVID-19 as a potential shock to insider stock gifting. In Figure 7, we see that the average post-gift 20-day CARs for gift transactions in both the 2016-2019 and

2020-2023 periods are flat. Furthermore, COVID-19, an event that likely changed gifting behavior in general, does not systematically alter the shape of the average stock price path for gifts. Finally, in untabulated analyses, we explore whether other measures of corporate governance correlate with the treatment effect and find that companies with more board member meetings tend to have lower treatment effects, suggesting the broker mechanism is indeed complementary to other mechanisms.

Alternative definitions of corporate insiders. We also show that our findings are robust when considering different definitions of corporate executives. Our findings should not be sensitive to how we define executives. Nevertheless, a potential concern could be that a time-varying unobservable factor drives the observed BD effect at the executive level for the set of executives we defined earlier. If such is the case, we would expect our main coefficient estimate of interest, β , to be unstable when we define executives in different ways. Columns (2) and (3) of Table 6 present the results using two different definitions of executives. In column (2), we set the Chairman of the Board, CEO, CFO, COO, and President as executives. The coefficient estimate gets slightly larger in economic magnitude from the estimate in column (1) of Table 3. In column (3), we follow Avci et al. (2016) and cast a wider net to define executives.²² The economic magnitude of the coefficient estimate of interest again remains qualitatively similar.

Charitable solicitation and pre-gift return. Charitable solicitation is a common, regulated phenomenon.²³ While charitable solicitation alone would not muddle our inferences, charitable solicitation with lax governance in the non-profit sector could. For example, non-profit organizations could have the incentives to open themselves up as tax shelters and be willing to accept as contributions the assets that fell in value soon after the receipt of those assets. Having the donors (directly or indirectly) linked to the non-profits could serve as one source of such an incentive (Yermack 2009). If the broader regulatory shift in the financial markets around the early 2010s also affected how the non-profit sector screened contributions, our main findings could be driven by the charitable sector and its governance system.

²²Following individuals are defined as corporate executives in Avci et al. (2016): CEO, CFO, CIO, COO, CTO, Chairman of the Board, Vice Chairman, Director, Officer, President, Senior Vice President, Vice President, and members of the various board committees.

²³See the following: Charitable solicitation state requirements.

We exploit a feature in our data to address this concern. The seasonality in insider stock gifts observed in Panels A and B of Figure 3 suggests that the solicitation activities by the charitable sector could be concentrated in December of every year. The charitable sector is likely aware that December is the month during which taxpayers obtain a clearer picture of their tax burden and execute year-end tax planning. With the assumption that non-December stock gifts are less affected by the demand for contributions from the charitable sector, we re-estimate equation 1 after accounting for stock gift transactions made in December. Column (4) of Table 6 reports our findings. We fail to find any economic and statistical difference in our outcome variable across December and non-December stock gift transactions.

Next, we substitute our outcome variable with $CAR_{h,i,t}^{[t-20,t-1]}$. Donors are generally incentivized to give away appreciated assets, and increasing tax benefits while making charitable contributions does not necessarily entail backdating donations. Thus, the pre-gift 20-day return between *Treated* and *Control* gift transactions is not likely affected by the regulatory shift in the BD industry. If anything, the BD effect we document for *post-gift 20-day* return should be muted for pre-gift 20-day return on average. As shown in column (5) of Table 6, we fail to find a statistical difference in the change in $CAR_{h,i,t}^{[t-20,t-1]}$ between *Treated* and *Control* transactions around the implementation of PCAOB’s interim inspection program.

Miscellaneous robustness checks. In the Supplementary Appendix to our study, we carry out several robustness checks to address remaining issues. First, *Treated* and *Control* transactions could originate from and be executed through firms and BDs that have different observable characteristics. A potential concern is that the difference in firm- and BD-level characteristics could be correlated with omitted factor(s) driving the observed BD effect in our main findings. To mitigate this concern, we conduct a matched sample analysis and find that our results are robust. Second, the way in which firm-BD pairs are constructed could introduce measurement errors. The classical measurement error issue of attenuation bias would only mean that the economic significance of our main estimate, an average lost tax savings of \$100,000, could be larger in magnitude. However, the underlying bias could go in either direction. Since the source and magnitude of the bias is unclear, we gauge the sensitivity of our main coefficient estimate by bringing in an alternative control group. The idea is that a measurement-error induced bias, if severe, should render our main coefficient estimate sensitive to how we define *Control* transac-

tions. Introducing the gift transactions without BD matches as an alternative control group does *not* qualitatively alter our main findings. Third, we examine whether there exists any structural break in the average post-gift 20-day CAR for gift transactions without BD matches around the regulatory shift. Firm-BD pairs in our sample could be misclassified significantly to a point where the BD effect of our interest is observable even in unmatched insider gift transactions. We fail to find that such is the case.

In the next set of robustness tests, we document that our results are not over-represented by transactions executed through a single BD or BDs affiliated with large financial institutions. Some of the specifics of the regulatory actions in the early 2010s could have been in response to the unraveling of the Madoff Ponzi scheme (and other schemes similar in spirit) in the late 2000s. A few BDs (or even one) involved in such schemes may have played an outsized role in accommodating backdated gift transactions. Further, the regulatory actions could have been tailored to target systemically important, large financial institutions (e.g., Standard Chartered Securities) as well. Finally, we re-estimate equation (1) after excluding firms in the financial services industry based on 1-digit SIC code and find that the BD effect increases in economic magnitude. One possible explanation is that the relatively high regulatory burden and scrutiny on financial institutions could have already placed higher costs on their executives in backdating gift transactions. Figures and tables on the discussed robustness tests can be found in the Supplementary Appendix.

5. Mechanisms

This section studies the underlying mechanisms through which BDs affect corporate executives' gifting of their shares. We focus on the following non-exclusive potential mechanisms: (1) BD involvement, (2) weak BD internal systems and procedures, (3) the firm-BD relationship, and (4) BD auditor expertise.

5.1. *Broker-Dealer characteristics*

Broker-Dealer involvement. Besides executing trade orders, BDs provide clients services in different shades. We examine two similar, but different in scope, BD roles that could plausibly affect the extent of BD "involvement" in the practice of backdating. We first examine BDs that

also serve as RIAs whose representatives, investment advisor representatives (IARs), advise clients on matters regarding security selection and financial portfolio management. While the IARs are unlikely to be directly involved in backdated trades, the representatives may help executives diversify their investment portfolios. In the process, the executives could sell or gift their insider holdings to reduce risk exposure to their firms. For each BD in our sample, we calculate the fraction of BD representatives that are dual-registered as IARs. We then identify BDs with the dual-registration fraction in the top quartile and re-estimate equation (1) after accounting for the cross-BD difference. Our prediction is that the tighter external scrutiny on BD systems and procedures will have stronger effects when gift transactions originate from executives more likely to receive portfolio management recommendations from their BDs. In column (1) of Table 7, we find that the BD effect is driven by those trades executed through dual-registered BDs.

Second, we examine BDs with representatives who serve as certified financial planners (CFPs). BD representatives dual-registered as CFPs can provide services covering a broader scope than IARs can. These include financial advice on savings, investments, retirement, and tax and estate planning services. As such, CFPs could advise executives about timing stock gifts that would maximize tax benefits. Conditional on having decided to gift their inside holdings, the executives could then choose to manipulate transaction dates to obtain greater tax savings. We re-estimate equation (1) after introducing an indicator for BDs with the fraction of CFPs in the top quartile. We expect the effect of the regulatory shift on stock gift backdating to be mostly concentrated in those transactions executed through BDs with a high fraction of CFPs. Column (2) of Table 7 shows findings consistent with our expectation.

Weak broker-dealer internal systems and procedures. In order for the regulatory shift of our interest to have an economically meaningful effect on executives' consumption of private benefits, a cross-sectional variation in the quality of BD systems and procedures *prior* to the regulatory shift is necessary. To proxy for the cross-BD variation, we rely on prior research that shows that incidences of customer complaints and misconduct at BDs are correlated with the quality of BD internal systems and procedures (Charoenwong et al. 2024). Columns (3)-(5) of Table 7 present our findings. The results across all three columns are similar. That is, the BD effect in the years after the regulatory shift is driven by transactions executed through BDs with

(1) customer complaints, (2) the fraction of representatives with customer complaint history in the top quartile, and (3) the fraction of CFPs with a history of disciplinary action in the top quartile. In terms of economic magnitude, the coefficient estimates are at least 150 percent more than our main estimate reported in Table 3.

5.2. *Firm and broker-dealer relationship and auditor expertise*

The effects of tighter external scrutiny on BD systems and procedures would be stronger for firm-BD relationships that remain intact during and after the regulatory transition period. This is because if some executives (and their firms) looked to continue to reap tax benefits by engaging in manipulative trades, then the executives could have done so by switching/escaping those BDs relatively more affected by the regulatory change. We re-estimate equation (1) after identifying firms that changed their go-to BDs in either 2009 or 2010. In column (1) of Table 8, we find that the effect of external scrutiny on BD systems and procedures is muted and statistically insignificant for those trades launched from firms switching their BDs. While this finding raises a potential concern that the documented BD effect on executive private benefits may not be binding for some BDs, the rather low and stable fraction of firms change their BDs, as shown in Figure SA3, suggests that the majority of firms do not actively change their BDs during our sample period.

Column (2) of Table 8 tabulates findings from examining the importance of auditor experience in BD audits—measured as auditors with an above-median number of BD clients as of 2008. Since the source of BD-level variation of interest is from the public oversight of BD auditors, the main finding of our study should be stronger for transactions executed through BDs whose auditors are more likely to rectify their audit processes under PCAOB oversight. While not a perfect measure for the cross-BD auditor variation in exposure to the regulatory change of our interest, auditor experience with BDs reasonably approximates the quality of BD audits and any room for improvement in the audit processes. We find results consistent with our expectations in column (2). The decline in backdating stock gifts in the post-regulatory shift period mainly manifests in trades executed through BDs whose auditors lacked experience in BD audits.

6. Additional Results

6.1. *Within-executive estimation and executive tenure*

We next conduct analyses that account for executive fixed effects and executive tenure and present the results in Table 9. First, column (1) includes executive fixed effects to control for time-invariant executive characteristics. The main coefficient estimate obtained in Table 3 could either be driven by executives terminating stock gifts or the decrease in tax savings generated from backdated trades, or both. The within-executive estimation exercise is informative because it provides us with a point estimate of intensive margin effect. In column (1), we find that for an executive initiating gift transactions in both the pre- and post-regulatory shift periods, the tax savings garnered by the executive is *lower* in the regime in which BDs systems and procedures are potentially scrutinized to a greater extent.

Column (2) shows that the loss in tax savings is concentrated in executives with longer tenure. There are several candidate explanations for this finding. On average, longer-tenured executives may have accumulated larger insider stock positions, offering more flexibility in selling/donating their positions without potentially sending either negative signals to investors or violating policies that require them to maintain some level of minimum ownership. Longer-tenured executives may also be relatively more entrenched and, therefore, take actions that are, perhaps, not shareholder-value maximizing (Berger et al. 1997). Such entrenched executives could also hold more sway in appointing BDs that are more quick to serve the executives' self-interest.

6.2. *Insider Stock Gift Incidence, Value, and Volume*

In the final set of tests, we examine the impact of the regulatory shift in the BD industry on stock gift incidence, value, and volume. If the regulatory shift deters the practice of backdating insider stock gifts, then gift incidence, value, and volume could decline due to the reduced tax savings. Recall that our back-of-the-envelope estimate for the lost tax savings for executives in a given year is about \$100,000.

As insider stock gifts can be rather sparsely populated for some executives over time in our data, we aggregate executive-level gift value and volume at the firm-year level and estimate two

variants of the following empirical model:

$$y_{i,t} = \alpha_i + \alpha_t + \beta Treated_i \times Post_t + \Gamma' X_{i,t} + \varepsilon_{i,t} \quad (3)$$

where i indexes firms and t indexes years. The term $Treated_i$ is one for firm i whose BD was subject to audit procedures free of PCAOB oversight prior to the regulatory shift. $Post_t$ is an indicator variable that equals one for 2011 and the subsequent years. $y_{i,t}$ is one of the following variables: (1) $\mathbb{1}(Gifting)$, (2) firm-year level gift value, and (3) firm-year level gift volume (in number of shares). $X_{h,i,t}$ is the same vector of control variables in equation (1) without the log gift value. For $\mathbb{1}(Gifting)$, we estimate equation (3) as is (i.e., OLS). For gift value and volume, we run Poisson regressions.

Table 10 reports our findings. We fail to find a statistically significant response in the incidence of stock gifts to the greater external scrutiny placed on BD systems and procedures. This extensive margin result, however, does not translate to the intensive margin findings presented in columns (2) and (3). Across both columns, gift value and volume decrease for *Treated* firms in the post-regulatory shift period. The findings in Table 10 collectively suggest that tightening BD (audit) oversight may have yielded unintended spillover effects. To a certain extent, the incidence of regulatory change in the BD industry likely fell on charities that relied on stock gifts from corporate executives.

7. Discussion and Conclusion

This paper provides evidence on how the public oversight of audits of financial market intermediaries influence corporate executives' consumption of private benefits. Exploiting a regulatory change from 2009 through 2011 that enhanced oversight of broker-dealer audits, we show that improvements in BD internal systems and procedures significantly reduced executives' ability to backdate stock gifts for tax advantages. Following the regulatory change, we document a 2 percent increase in post-gift cumulative abnormal returns for BDs newly subject to PCAOB oversight compared to those already under supervision. This effect translates to a meaningful reduction in tax benefits obtained by backdating insider stock gift transactions.

Our cross-sectional analyses reveal that the deterrence effect is particularly pronounced for

BDs that (1) offer more complex services, including certified financial planning; (2) have a higher fraction of employees with customer complaints, suggesting weaker pre-existing internal controls; and (3) undergo audits conducted by less experienced auditors. These findings highlight how BD characteristics and regulatory scrutiny influence executive self-dealing.

The results have implications for policymakers and regulators: First, they demonstrate that financial intermediary oversight can be an effective tool for curbing managerial self-dealing, complementing direct regulation of corporate insiders. Second, our findings suggest that strengthening BD internal systems and procedures through the PCAOB’s oversight of BD audits generates positive spillover effects for tax compliance. Third, the economic magnitude of our results—an estimated \$100,000 in additional tax revenue per executive in a year—indicates that improved BD oversight may offer a cost-effective mechanism for reducing tax avoidance.

In 2023, the SEC implemented a two-day reporting requirement for stock gifts to remedy “...problematic practices involving gifts of equity securities, such as making stock gifts while in possession of material nonpublic information or backdating stock gifts to maximize the tax benefits associated with such gifts.”²⁴ Our findings show that backdated stock gifts had declined to a large extent due to the regulatory interventions in the BD industry in the early 2010s. Our study demonstrates how intermediary oversight complements direct regulation of corporate insiders.

More broadly, our study contributes to the ongoing debate about the role of financial intermediaries in corporate governance. Although prior literature has focused primarily on direct monitoring by boards, auditors, and institutional investors, we show that market intermediaries such as broker-dealers play a crucial, previously undocumented, role in constraining executive private benefits. Future research might explore how other financial intermediaries influence managerial behavior and corporate outcomes.

²⁴See: <https://www.sec.gov/files/rules/final/2022/33-11138.pdf>. Accessed November 2024.

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Appendix A.

Variables	Definition
Transaction-level characteristics	
<i>Stock Gift Value (millions)</i>	The total value of shares gifted during the fiscal year by executives at firm i , expressed in millions of U.S. dollars.
<i>Stock Gift Volume (thousands)</i>	The total volume of shares gifted during the fiscal year by executives at firm i , expressed in thousands.
$CAR[t-20, t-1]$	Cumulative daily abnormal return (daily stock returns adjusted for the CRSP equal-weighted index return) for the 20 trading days leading up to the date of insider stock gift.
$CAR[t+1, t+20]$	Cumulative daily abnormal returns (daily stock returns adjusted for the CRSP equal-weighted index return) for the 20 trading days following the date of insider stock gift.
<i>Filing Delay</i>	Insider stock gift transaction is classified as having delayed reporting if more than 10 trading days elapse between the transaction date and the date the transaction is reported to the SEC.
Firm-level characteristics	
<i>Past Stock Return</i>	The firm's cumulative monthly returns during the prior fiscal year.
<i>Stock Return Volatility</i>	The standard deviation of the firm's monthly returns for the current fiscal year.
<i>Size ($\ln(MVE)$)</i>	The firm's market value of equity at the prior fiscal year-end.
<i>Book-to-Market (BTM)</i>	The firm's book value of common equity scaled by the firm's market value of equity at the prior fiscal year-end.
<i>Return on Assets (ROA)</i>	The firm's income before extraordinary items for the current fiscal year scaled by total assets at the prior fiscal year-end.
<i>Sales Growth</i>	Growth rate in sales.
<i>Research & Development (R&D)</i>	An indicator variable equal to one if the firm reports non-zero R&D expenditures in the current fiscal year, and zero otherwise.
<i>Institutional Ownership (%) (InstOwn)</i>	Percentage of common shares outstanding held by institutional investors.
Broker-Dealer-level characteristics	
<i>Dual-Registered Employees</i>	Fraction of employees dually registered as brokers and investment advisor representatives.
<i>Employees with Complaint History</i>	Fraction of employees with history of complaints from customers

Fig. 1. Number of suspicious activity reports (SARs) filed by type from the securities/futures industry over 2014-2023. This figure shows the number of top 20 types of SARs filed by entities from the securities/futures industry over 2014-2023. SARs are filed with FinCEN Form 111. SAR filing types that could pertain to backdated insider trades are shaded. According to FinCEN, each SAR filing could contain a list of multiple suspicious activities. The top 20 types relate to the following issues: (1) Automated Clearing House (ACH), (2) Identity Theft, (3) Wire, (4) Transactions with no apparent economic, business, or lawful purpose, (5) Check, (6) Suspicion Concerning the Source of Funds, (7) Suspicious EFT/Wire Transfers, (8) Account Takeover, (9) Fraud - Other, (10) Embezzlement/Theft/Disappearance of Funds, (11) Securities/Futures/Options - Other, (12) Suspicious Use of Multiple Accounts, (13) Other Suspicious Activities - Other, (14) Credit/Debit Card, (15) Elder Financial Exploitation, (16) Two or More individuals Working Together, (17) Insider Trading, (18) Against Financial Institution Customer(s), (19) Transaction Out of Pattern for Customer(s), and (20) Securities Fraud. For more information, please visit FinCEN’s SARs Stats webpage.

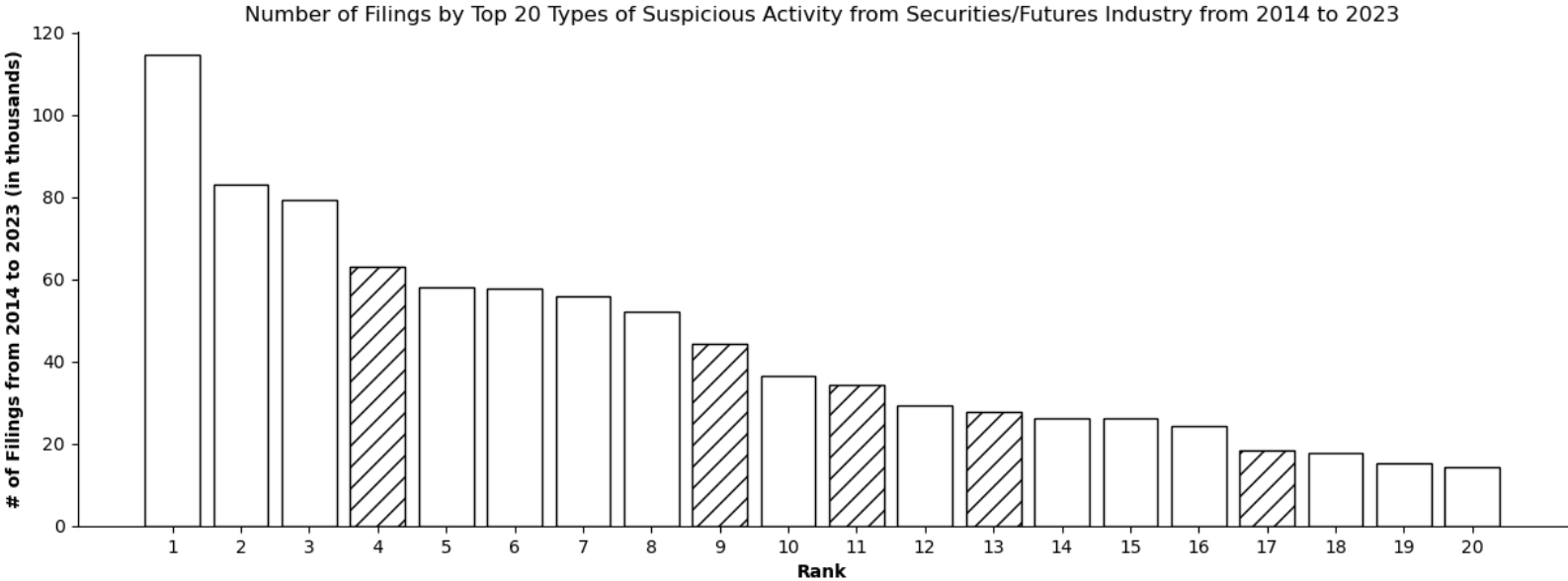


Fig. 2. Regulatory transition in the broker-dealer industry. This figure depicts the changing regulatory landscape for the broker-dealer industry. The change in the regulatory environment for the broker-dealer industry began in 2009 and culminated in 2011 with the broker-dealer auditor inspection program adopted by the PCAOB. Before 2009, the PCAOB oversight covered publicly-held broker-dealers or privately-held broker-dealers, with their auditors having publicly-held broker-dealers in client portfolios. Starting in 2009, all broker-dealer audits came under the oversight of the PCAOB. Then, the PCAOB began an interim inspection program for broker-dealer audits in 2011. This regulatory transition culminating in 2011 likely affected the systems and procedures of privately held broker-dealers.

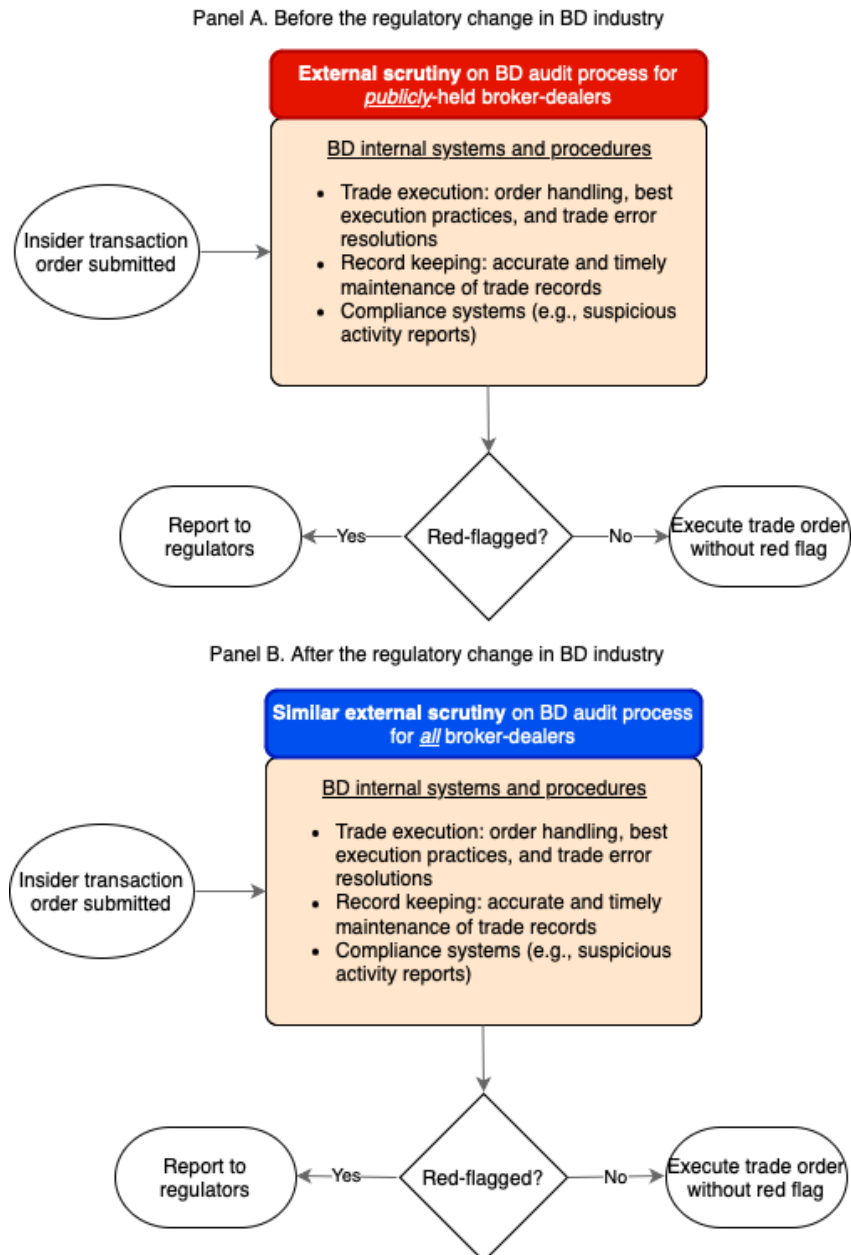


Fig. 3. Aggregate insider stock gift value and seasonality Panels A and B show (1) the value of aggregate insider stock gifts in million USD and (2) stock gift seasonality, respectively. Our sample of insider gift transactions (i.e., 14,636 observations) are aggregated at calendar-quarter level. The sample is obtained from the SEC filings on bona fide gifts reported on the Thomson Reuters Insider Filing Data Feed. We produce this aggregate descriptive figure using stock gifts made by the following executives: CEO, CFO, COO, president, chairman of the board, vice chairman, executive vice president, senior vice president, and vice president. For most calendar quarters in our sample, the value of insider stock gifts exceeds \$100 million. Insider stock gift transactions are concentrated in December of every year.

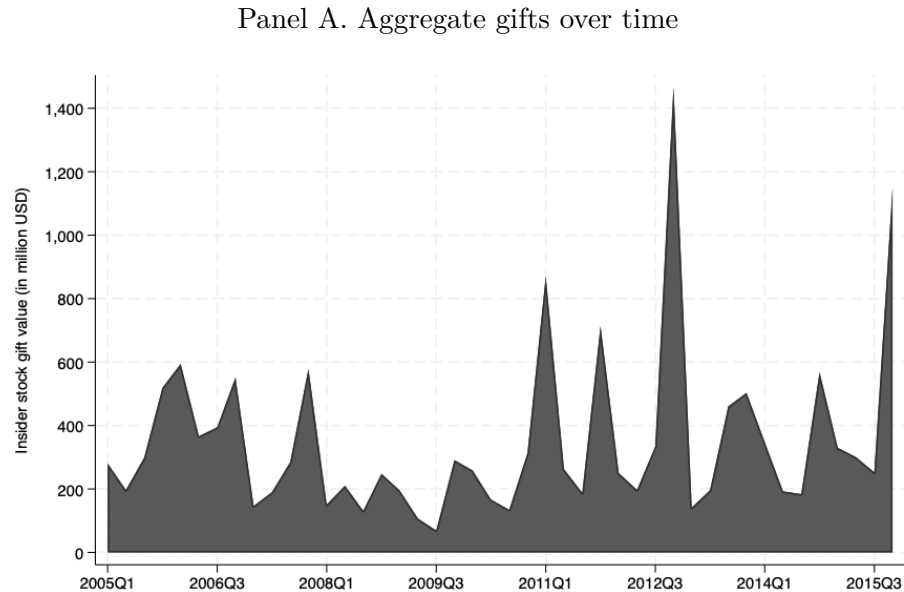


Fig. 4. CARs around stock gift dates in the pre-and post-regulatory transition. This figure plots cumulative abnormal returns (CARs) around the dates of insider stock gift transactions in our sample. For each gift transaction, we calculate abnormal return for the underlying stock i on day d in the following way: $AR_{i,d} = r_{i,d} - r_{market,d}$. Daily market return is the return on CRSP equal-weighted market index on day d . For each day d over $[-20,+20]$ window around the reported bona fide gift date, we calculate the cross-sectional average value of $AR_{i,d}$. We then calculate the following: $CAR_D = \sum_{d=-20}^D averageAR_d$. These CARs are plotted over the $[-20,+20]$ window, where $d = 0$ corresponds to the reported dates of insider stock gifts. The pre-(post-) period is from 2005 to 2010 (2011 to 2015).

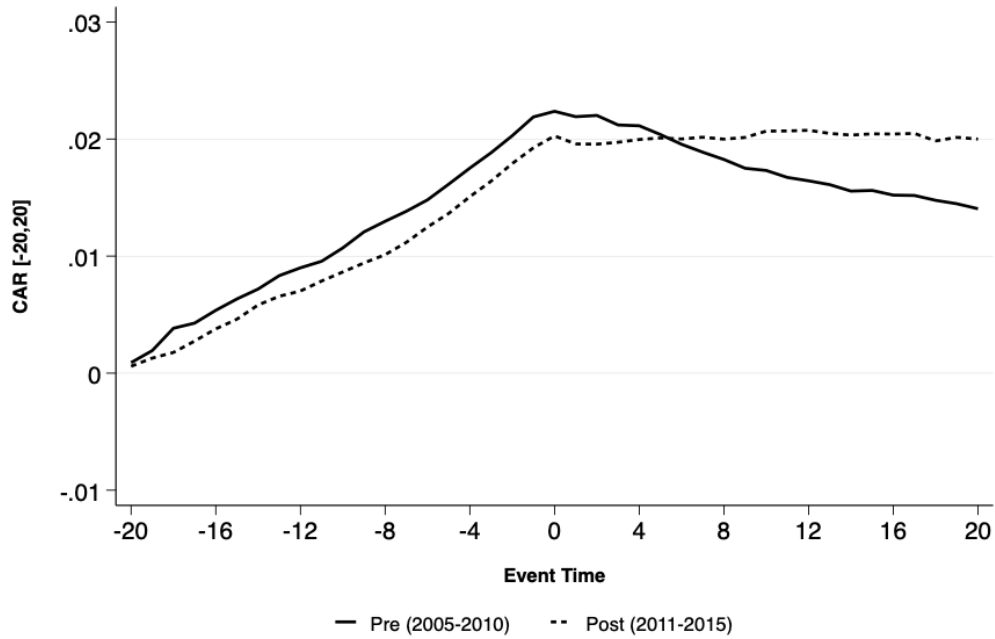
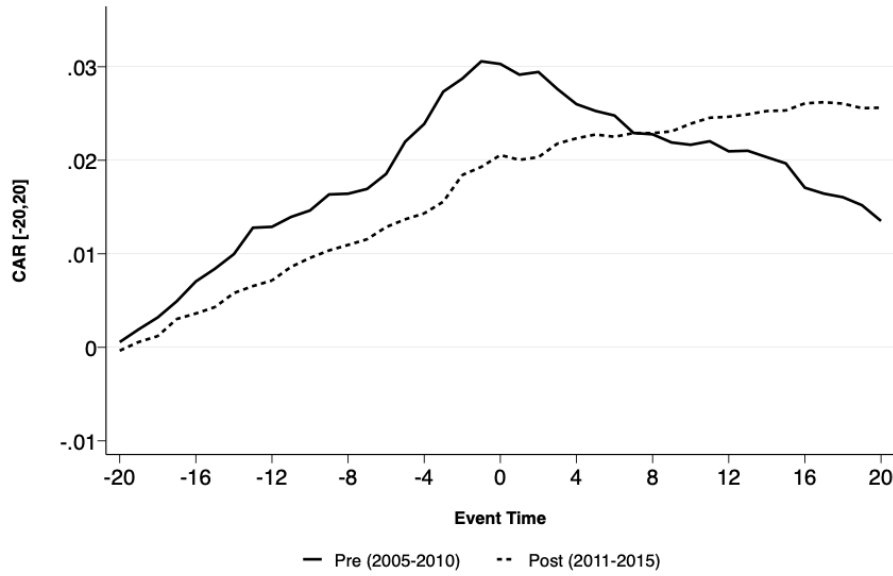


Fig. 5. CARs around stock gift dates for the treated and control insider stock gift transactions. Panels A and B plot CARs around the date of transactions for the treated (Panel A) and control (Panel B) insider stock gift transactions before and after the regulatory transition in the broker-dealer industry. (i.e., difference-in-differences plots). For each subgroup (e.g., treated transactions before the regulatory transition in the broker-dealer industry, we calculate cross-gift transaction average value of $AR_{i,d}$ (i.e., abnormal return for stock i on day d). $CAR_D(= \sum_{d=-20}^D average AR_d)$ is then plotted over $[-20,+20]$ window, where $d = 0$ corresponds to the reported dates of insider stock gifts.

Panel A. Treated group of transactions



Panel B. Control group of transactions

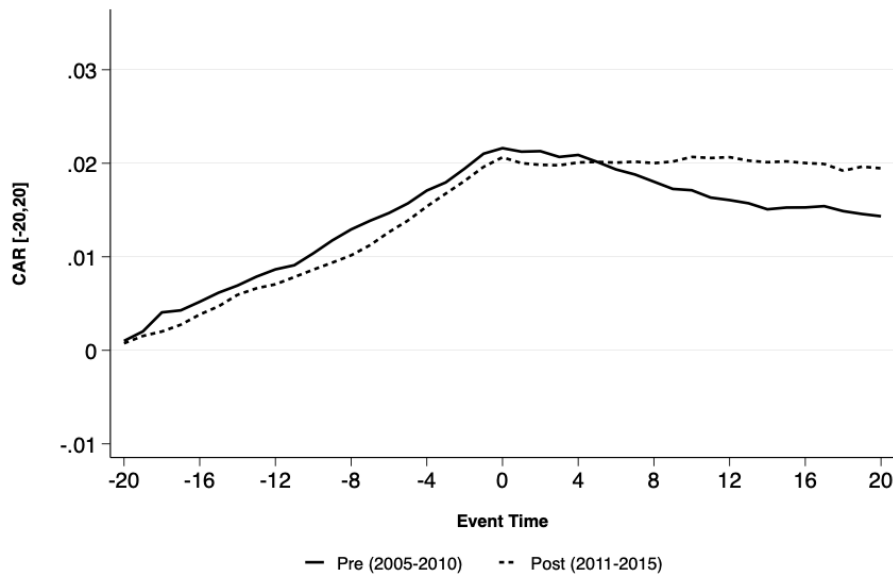


Fig. 6. The dynamic effects of regulatory transition in the broker-dealer industry. This figure shows the coefficient estimates (and the corresponding 95% confidence bands) from estimating equation (2). The year 2009 serves as the benchmark period. Standard errors are clustered by firm and broker-dealer. The shaded area represents the entirety of the regulatory transition period in the broker-dealer industry.

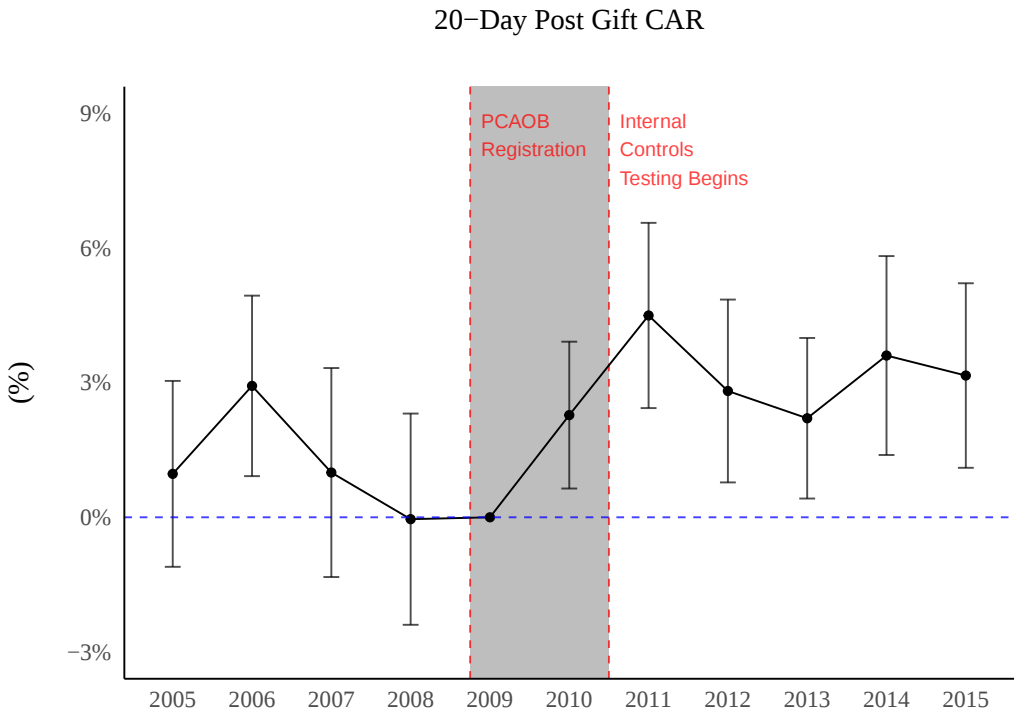


Fig. 7. CARs around stock gift dates in the pre-and post-COVID-19. This figure plots cumulative abnormal returns (CARs) around the dates of insider stock gift transactions in our sample. For each gift transaction, we calculate the abnormal return for the underlying stock i on the day d in the following way: $AR_{i,d} = r_{i,d} - r_{market,d}$. Daily market return is the return on CRSP equal-weighted market index on day d . For each day d over $[-20,+20]$ window around the reported bona fide gift date, we calculate the cross-sectional average value of $AR_{i,d}$. We then calculate the following: $CAR_D = \sum_{d=-20}^D averageAR_d$. These CARs are plotted over the $[-20,+20]$ window, where $d = 0$ corresponds to the reported dates of insider stock gifts. The pre-(post-) period is from 2016 to 2019 (2020 to 2023).

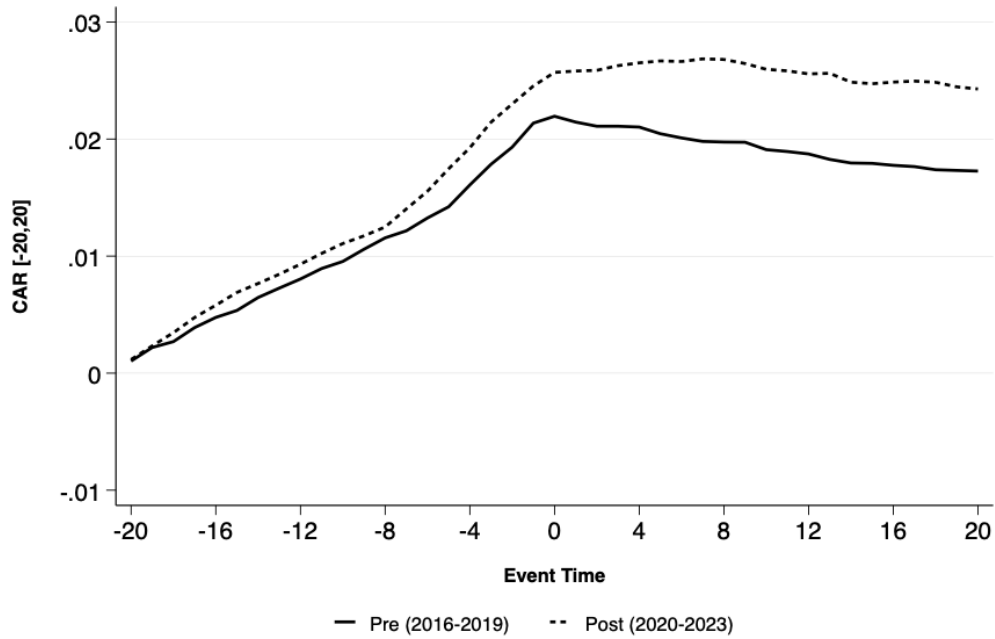


Table 1. Descriptive statistics.

This table presents the descriptive statistics of all the key variables in our sample. Panel A provides descriptive statistics on transaction-level characteristics. Panel B provides descriptive statistics on firm-level characteristics. Panel C provides descriptive statistics on broker-dealer characteristics. The descriptive statistics cover the sample period 2005-2015. All variables are displayed at the transaction-level to show the variation used in all the analyses used in our study. All variables are defined in Appendix A.

	Mean	SD	P25	P50	P75
Panel A: Transaction-level characteristics					
<i>Treated</i>	0.118	0.322	0.000	0.000	0.000
<i>Post</i>	0.396	0.489	0.000	0.000	1.00
<i>Gift Value (millions)</i>	1.020	7.451	0.020	0.067	0.320
<i>Log(Gift Value)</i>	0.303	0.574	0.020	0.065	0.277
<i>Filing Delay (Days)</i>	65.295	178.427	2.000	6.000	58.000
<i>CAR [t-20,t-1]</i>	0.023	0.110	-0.031	0.017	0.070
<i>CAR [t+1,t+20]</i>	-0.006	0.101	-0.049	-0.005	0.040
Panel B: Firm-level characteristics					
<i>Past Stock Return</i>	0.213	0.516	-0.001	0.180	0.374
<i>Stock Return Vol</i>	0.104	0.118	0.059	0.084	0.120
<i>ln(MVE)</i>	7.555	1.921	6.191	7.478	8.858
<i>BTM</i>	0.479	0.938	0.244	0.419	0.647
<i>ROA</i>	0.043	0.184	0.014	0.053	0.103
<i>SalesGrowth</i>	0.188	0.970	0.029	0.106	0.217
<i>R&D</i>	0.370	0.483	0.000	0.000	1.000
<i>InstOwn</i>	0.635	0.311	0.459	0.715	0.868
Panel C: Broker-level cross-sectional characteristics					
<i>Complaints</i>	0.077	0.069	0.020	0.076	0.137
<i>Dual-registered</i>	0.523	0.300	0.284	0.606	0.828

Table 2. Treated and control insider stock gift transactions.

This table presents cumulative abnormal returns (CARs) around the dates of insider stock gift transactions in our sample. For each gift transaction, we calculate abnormal return for the underlying stock i on day d in the following way: $AR_{i,d} = r_{i,d} - r_{market,d}$. Daily market return is the return on CRSP equal-weighted market index on day d . For each day d over $[-20,-1]$ and $[+1,+20]$ windows around the reported bona fide gift date, we calculate the cross-sectional average value of $AR_{i,d}$. $d = 0$ corresponds to the reported date of insider stock gift transaction. We then calculated the following CARs: (1) $CAR_{[t-20,t-1]}^{Pre-period,Treated}$, (2) $CAR_{[t-20,t-1]}^{Pre-period,Control}$, (3) $CAR_{[t+1,t+20]}^{Pre-period,Treated}$, (4) $CAR_{[t+1,t+20]}^{Pre-period,Control}$, (5) $CAR_{[t-20,t-1]}^{Post-period,Treated}$, (6) $CAR_{[t-20,t-1]}^{Post-period,Control}$, (7) $CAR_{[t+1,t+20]}^{Post-period,Treated}$, and (8) $CAR_{[t+1,t+20]}^{Post-period,Control}$. Pre-(post-) period is from 2005 to 2010 (2011 to 2015).

	Pre-period (2005 to 2010)			Post-period (2011 to 2015)		
	$CAR_{[t-20,t-1]}$ (1)	$CAR_{[t+1,t+20]}$ (2)	Diff (1) - (2) (3)	$CAR_{[t-20,t-1]}$ (4)	$CAR_{[t+1,t+20]}$ (5)	Diff (4) - (5) (6)
Treated	3.06%	-1.65%	4.71%	1.93%	0.49%	1.44%
Control	2.10%	-0.75%	2.85%	1.96%	-0.10%	2.06%

Table 3. Impact of broker-dealer oversight on stock gifts.

This table presents results from estimating equation (1). The dependent variable is the post-gift 20-day CAR. In column (1), the estimation is carried out with the full sample. In columns (2) and (3), we partition our sample into two groups and estimate our main empirical model separate for each group. The two groups are: (1) insider gift transactions transpiring in firms with the pre-2009 average filing delay of more than 10 days and (2) remaining transactions. Observations are at the transaction level. All regressions include controls from equation (1) and firm-BD pair and industry-year fixed effects. Standard errors are two-way clustered by firm and BD. *, **, *** indicate statistical significance at the two-tailed 10%, 5%, and 1% levels, respectively.

Dependent Variable:	$CAR_{[t+1,t+20]}$		
	(1)	(2)	(3)
$Treated \times Post$	0.016** (0.006)	0.030** (0.011)	-0.009 (0.013)
Observations	14,243	7,043	7,200
Sample	Full	Filing > 10 Days	Filing $\leq$ 10 Days
Controls	✓	✓	✓
R^2	0.416	0.363	0.495
Mean DV	-0.006	-0.005	-0.006
SD DV	0.101	0.103	0.099

Table 4. Does broker-dealer oversight affect backdated or informed stock gifts?

This table presents results from estimating equation (1). In column (1), we account for a third difference. The conditioning variable is $\mathbb{1}(HighVol.)$. It is one for observations associated with above median value of firm-level daily return volatility. The volatility variable is measured in the reported year of insider gift transactions. In columns (2) and (3), we use two variants of $\mathbb{1}(EarningsAnn.in)$ as our dependent variable. The indicator is one if a firm has earnings announcement in the next 20 or 60 calendar days after insider gift transaction(s). Observations are at the transaction level. All regressions include controls from equation (1) and firm-BD pair and industry-year fixed effects. Standard errors are two-way clustered by firm and BD. *, **, *** indicate statistical significance at the two-tailed 10%, 5%, and 1% levels, respectively.

Dependent Variable:	$CAR_{[t+1,t+20]}$	$\mathbb{1}(EarningsAnn.in$ <i>Next 20 Days)</i>	$\mathbb{1}(EarningsAnn.in$ <i>Next 60 Days)</i>
	(1)	(2)	(3)
<i>Treated</i> $\times$ <i>Post</i>	-0.002 (0.006)	0.006 (0.011)	-0.005 (0.033)
<i>Treated</i> $\times$ <i>Post</i> $\times$ <i>High Vol</i>	0.040*** (0.015)		
Observations	14,243	14,243	14,243
Sample	Full	Full	Full
R^2	0.416	0.365	0.591
Mean DV	-0.006	0.060	0.325
SD DV	0.101	0.237	0.469

Table 5. Accounting for potentially confounding regulations.

This table presents results from estimating equation (1). Column (1) includes the sample of broker-dealers with more than US\$100 million in assets. These are the entities likely not affected by the shift in regulatory jurisdiction over registered investment advisors (RIAs). Column (2) includes the sample of broker-dealers with more than US\$250,000 in required net capital, i.e., carrying BDs. In column (3), we exclude transactions transpiring in the years 2014 and 2015, which could be affected by the implementation of Dodd-Frank. The dependent variable is the post-gift 20-day CAR. Observations are at the transaction level. All regressions include controls from equation (1) and firm-BD pair and industry-year fixed effects. Standard errors are two-way clustered by firm and BD. *, **, *** indicate statistical significance at the two-tailed 10%, 5%, and 1% levels, respectively.

Dependent Variable:	$CAR_{[t+1,t+20]}$		
	(1)	(2)	(3)
<i>Treated</i> $\times$ <i>Post</i>	0.017*** (0.005)	0.017*** (0.006)	0.022*** (0.007)
Observations	13,079	13,849	11,930
Sample	Not Affected by SEC Rejurisdiction	All Carrying Brokers	Before Dodd-Frank Implementation
R^2	0.416	0.413	0.456
Mean DV	-0.005	-0.005	-0.006
SD DV	0.100	0.101	0.104

Table 6. Additional robustness checks.

This table presents results from estimating equation (1). Column (1) excludes transactions transpiring over 2009-2010. In column (2), corporate executives are narrowed down to the major 5 executives (Chairman of Board, CEO, CFO, COO, and President). In column (3), the definition of corporate executives are expanded to include the executives defined in Avci et al. (2016). In column (4), equation (1) is re-estimated after accounting for gift transactions occurring in the month of December ($Treated \times Post \times Dec.$). The dependent variable for columns 1 to 4 is the post-gift 20-day CAR. The dependent variable for column (5) is the pre-gift 20-day CAR. Observations are at the transaction level. All regressions include controls from equation (1) and firm-BD pair and industry-year fixed effects. Standard errors are two-way clustered by firm and BD. *, **, *** indicate statistical significance at the two-tailed 10%, 5%, and 1% levels, respectively.

Dependent Variable:	$CAR_{[t+1,t+20]}$				$CAR_{[t-20,t-1]}$
	(1)	(2)	(3)	(4)	(5)
$Treated \times Post$	0.021** (0.008)	0.017*** (0.006)	0.017*** (0.004)	0.017** (0.008)	0.010 (0.007)
$Treated \times Post \times Dec.$				0.004 (0.015)	
Observations	12,267	13,849	36,656	14,243	14,243
Sample	Excl. 2009-2010	Major 5	Avci et al. (2015)	Full	Full
R^2	0.434	0.413	0.320	0.423	0.483
Mean DV	-0.005	-0.005	-0.005	-0.006	0.023
SD DV	0.101	0.101	0.091	0.101	0.110

Table 7. Roles of broker-dealer scope and misconduct history.

This table presents results from estimating equation (1) after including a triple interaction term (broker-dealer characteristic). Z variable represents the third difference variable used in each column. Column (1) focuses on broker-dealers with top-quartile fraction of representatives being dual-registered as broker-dealers and investment advisor representatives. Column (2) focuses on broker-dealers with top-quartile fraction of representatives being CFP charter holders. Column (3) focuses on broker-dealers with any customer complaint(s). Column (4) focuses on broker-dealers with top-quartile fraction of employees with a complaint history. Column (5) focuses on BDs with top-quartile fraction of broker-dealers having a CFP disciplinary action history. The Z variables are all measured in year 2008. Estimates on the respective cross-sectional variables are suppressed for space. The dependent variable is the post-gift 20-day CAR. Observations are at the transaction level. All regressions include controls from equation (1) and firm-BD pair and industry-year fixed effects. Standard errors are two-way clustered by firm and BD. *, **, *** indicate statistical significance at the two-tailed 10%, 5%, and 1% levels, respectively.

Dependent Variable:	$CAR_{[t+1,t+20]}$				
$Z =$	High Dual-Registered	High CFP	High Complaints	High Frac. w/ Complaint Hist.	High Frac. w/ CFP Disciplinary Act.
	(1)	(2)	(3)	(4)	(5)
$Treated \times Post$	0.012 (0.008)	0.013* (0.007)	0.001 (0.013)	0.013 (0.008)	0.012 (0.007)
$Treated \times Post \times Z$	0.030** (0.012)	0.029*** (0.009)	0.041*** (0.015)	0.029** (0.014)	0.031*** (0.008)
Observations	14,243	14,243	14,243	14,243	14,243
R^2	0.416	0.416	0.416	0.416	0.416
Mean DV	-0.006	-0.006	-0.006	-0.006	-0.006
SD DV	0.101	0.101	0.101	0.101	0.101

Table 8. Roles of firm and broker-dealer relationship and auditor expertise.

This table presents results from estimating equation (1) after including a triple interaction term, Z . Column (1) focuses on firms that changed broker-dealers in either 2009 or 2010. Column (2) focuses on broker-dealers with auditors that had above median number of audit clients—measured in 2008. Estimates on the respective cross-sectional variables are suppressed for space. The dependent variable is the post-gift 20-day CAR. Observations are at the transaction level. All regressions include controls from equation (1) and firm-BD pair and industry-year fixed effects. Standard errors are two-way clustered by firm and BD. *, **, *** indicate statistical significance at the two-tailed 10%, 5%, and 1% levels, respectively.

Dependent Variable:	$CAR_{[t+1,t+20]}$	
Z =	Firms Changed BD in 2009/2010 (1)	High Num. Audits by BD Auditor (2)
$Treated \times Post$	0.039*** (0.011)	0.088*** (0.011)
$Treated \times Post \times Z$	-0.043*** (0.022)	-0.091*** (0.020)
Observations	14,243	12,367
R^2	0.416	0.418
Mean DV	-0.006	-0.006
SD DV	0.101	0.101

Table 9. Within-executive estimation and executive tenure

This table presents results from estimating equation (1) expanded to conduct within-executive estimation and examine the role of executive tenure. Column (1) shows the specification with executive fixed effects. Column (2) shows the results for executives with above median tenure. Estimates on the respective cross-sectional variables are suppressed for space. The dependent variable is the post-gift 20-day CAR. All regressions include controls from equation (1) and firm-BD pair and industry-year fixed effects. Standard errors are two-way clustered by firm and BD. *, **, *** indicate statistical significance at the two-tailed 10%, 5%, and 1% levels, respectively.

Dependent Variable:	$CAR_{[t+1,t+20]}$	
	(1)	(2)
$Treated \times Post$	0.027** (0.011)	-0.010 (0.011)
$Treated \times Post \times High\ Tenure$		0.033*** (0.013)
Observations	14,243	14,243
R^2	0.472	0.416
Mean DV	-0.006	-0.006
SD DV	0.101	0.101

Table 10. Impact on gift incidence, value, and volume.

This table presents results from estimating equation (3), with all outcome variables defined at the firm-year level. The dependent variable in Column (1) is an indicator that equals to 1 if a stock gift occurs in that firm-year. In Column (2), the dependent variable is the dollar value of stock gifts, and in Column (3) it is the number of gifted shares. Column (1) is estimated by OLS, while Columns (2) and (3) use a Poisson model. All regressions include firm-level controls from equation (1) and firm and year fixed effects. Standard errors are clustered by firm. *, **, *** indicate statistical significance at the two-tailed 10%, 5%, and 1% levels, respectively.

Dependent Variable:	$1\{Gifting > 0\}$ (1)	<i>Gift Value</i> (2)	<i>Gift Volume</i> (3)
<i>Treated</i> $\times$ <i>Post</i>	-0.011 (0.026)	-0.697* (0.361)	-0.156* (0.084)
Observations	8,789	8,789	8,789
Model	OLS	Poisson	Poisson
Pseudo R^2	0.384	0.639	0.258

Supplementary Appendix

This Supplementary Appendix reports additional figures and tables discussed in Section 4.3. The Supplementary Appendix items are listed below:

Figures:

- Figure SA1 on covariate balance before and after matching
- Figure SA2 on the robustness of our main point estimate of interest, β from equation (1), in the analysis where we estimate equation (1) on a subset of data excluding one broker-deal at a time
- Figure SA3 on the descriptive plot of the fraction of firms changing broker-dealers over our sample period

Tables:

- Table SA1 on descriptive statistics by treatment status
- Table SA2 on the results from matched sample analysis and from estimating equation (1) with an alternative control group of transactions.
- Table SA3 on the robustness of our main findings after excluding broker-dealers affiliated with large financial institution groups and firms in financial services.

Fig. SA1. Covariate balance before and after matching. This figure presents the covariate balance plot on standardized mean differences for the raw and matched sample using coarsened exact matching on five subclasses with a logistic linking function.

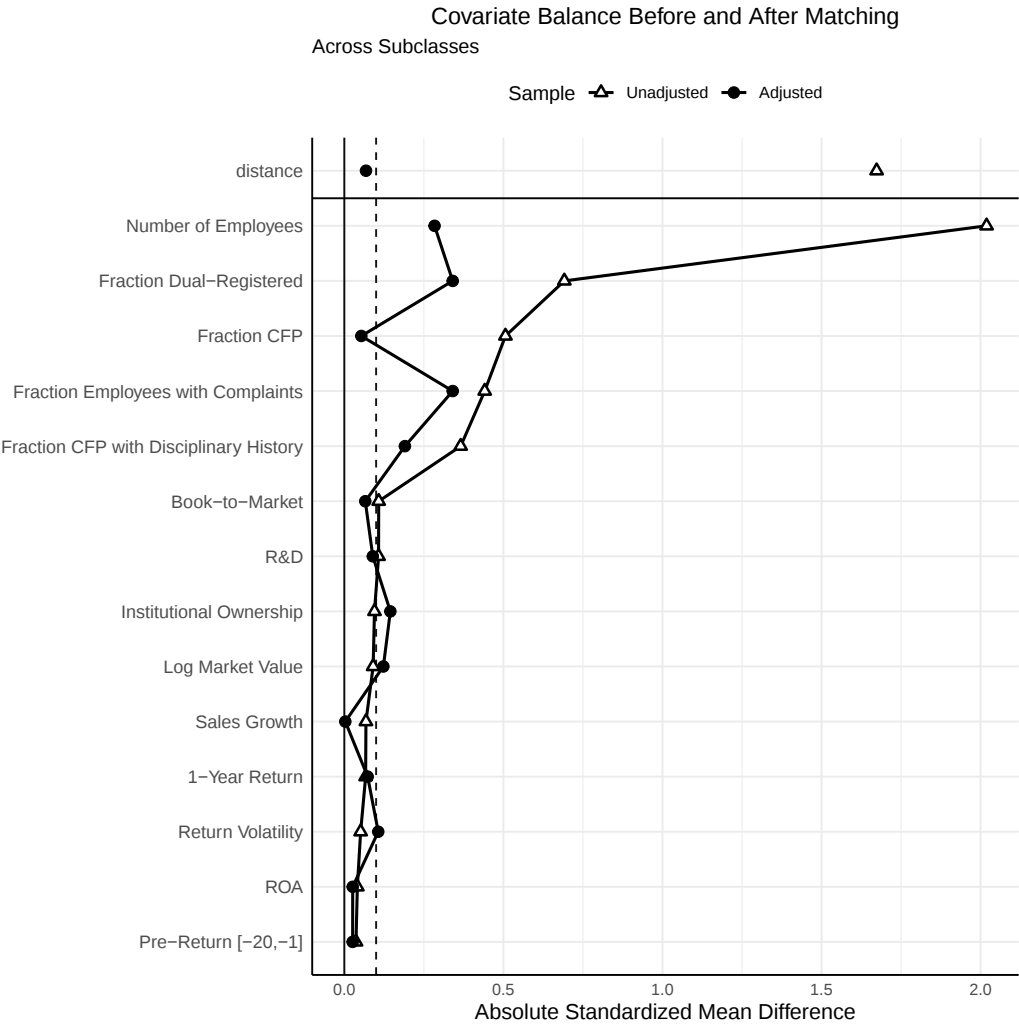


Fig. SA2. Dropping individual broker-dealers. This figure presents the main coefficient estimates, β s, and two-sided 95% interval from equation 1. Each point represents a model estimate based on a subset of the data, excluding one broker-dealer at a time, to evaluate the sensitivity of the results. The estimates are ordered based on the most positive to most negative point estimates.

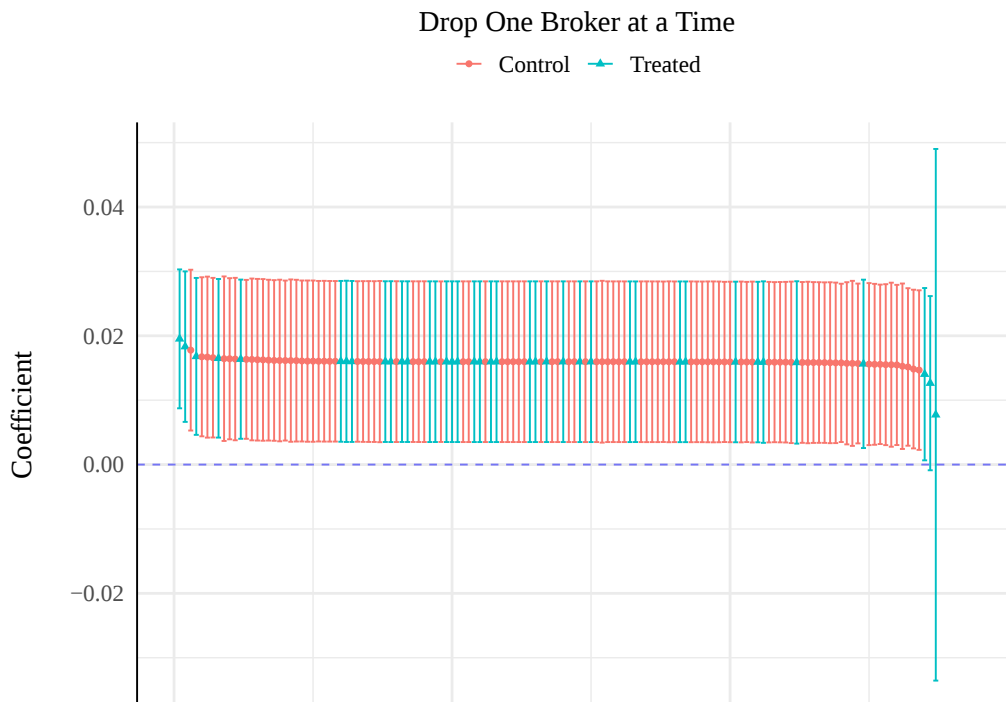


Fig. SA3. Fraction of firms changing broker-dealers. This figure presents the time series fraction of firms changing broker-dealers in any given year over our sample period, i.e., 2005-2015.

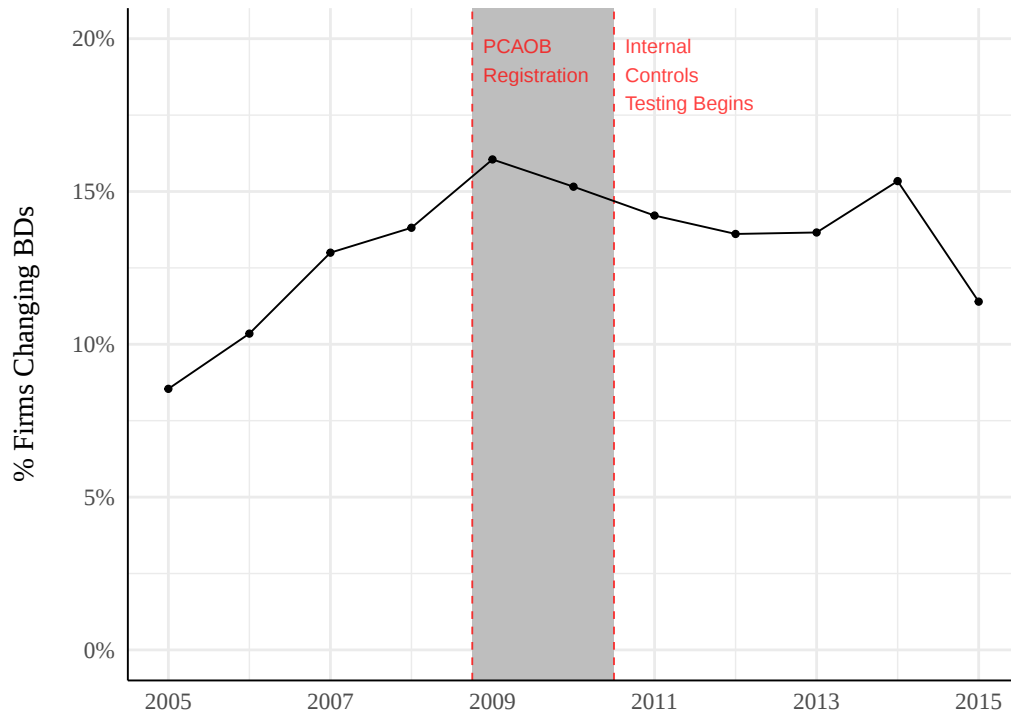


Table SA1. Descriptive statistics by treatment status.

This table presents the descriptive statistics of all the key variables by treatment status. Panel A provides descriptive statistics on transaction-level characteristics. Panel B provides descriptive statistics on firm-level characteristics. Panel C provides descriptive statistics on broker-dealer characteristics. The descriptive statistics cover the sample period 2005-2015. All variables are displayed at the transaction-level to show the variation used in all the analyses used in our study. All variables are defined in Appendix A.

	Control					Treated				
	Mean	SD	P25	P50	P75	Mean	SD	P25	P50	P75
Panel A: Transaction-level characteristics										
<i>Gift Value (millions)</i>	1.028	7.685	0.020	0.068	0.321	0.957	5.380	0.020	0.062	0.315
<i>Log(Gift Value)</i>	0.303	0.574	0.020	0.065	0.278	0.298	0.571	0.020	0.060	0.274
<i>Filing Delay (Days)</i>	65	181	2	6	58	68	158	2	8	65
<i>CAR [t-20,t-1]</i>	0.022	0.111	-0.031	0.016	0.069	0.026	0.098	-0.026	0.023	0.075
<i>CAR [t+1,t+20]</i>	-0.005	0.102	-0.049	-0.005	0.040	-0.008	0.094	-0.052	-0.005	0.039
Panel B: Firm-level characteristics										
<i>Past Stock Return</i>	0.210	0.524	0.000	0.179	0.365	0.237	0.444	0.000	0.201	0.444
<i>Stock Return Vol</i>	0.104	0.123	0.058	0.083	0.119	0.108	0.072	0.064	0.092	0.131
<i>ln(MVE)</i>	7.537	1.930	6.163	7.477	8.852	7.719	1.802	6.481	7.499	9.009
<i>BTM</i>	0.484	0.984	0.248	0.425	0.657	0.437	0.471	0.209	0.383	0.563
<i>ROA</i>	0.045	0.170	0.014	0.052	0.102	0.033	0.268	0.019	0.060	0.113
<i>SalesGrowth</i>	0.180	0.957	0.026	0.103	0.213	0.250	1.064	0.053	0.128	0.243
<i>R&D</i>	0.358	0.479	0.000	0.000	1.000	0.467	0.499	0.000	0.000	1.000
<i>InstOwn</i>	0.631	0.314	0.456	0.713	0.867	0.665	0.287	0.494	0.735	0.875
Panel C: Broker-level cross-sectional characteristics										
<i>Complaints</i>	0.075	0.069	0.020	0.043	0.137	0.112	0.063	0.088	0.145	0.145
<i>Dual-registered</i>	0.517	0.299	0.284	0.518	0.828	0.641	0.299	0.531	0.816	0.816

Table SA2. Alternative Sample and Control Group Specifications

This table presents results from estimating equation (1) using different sample and control group specifications. Column (1) uses a coarsened exact matched sample with 5 subclasses and a logistic linking function. Column (2) uses the unmatched transactions as the control group. Column (3) examines the post-period effect separately for the unmatched transactions. The dependent variable is the post-gift 20-day CAR. Observations are at the transaction level. All regressions include the full set of controls from equation (1). Columns (1) and (2) include firm-BD pair and industry-year fixed effects, while column (3) includes firm-BD pair and industry fixed effects. Standard errors in columns (1) and (2) are two-way clustered by firm and BD, while in column (3) they are clustered by firm. *, **, *** indicate statistical significance at the two-tailed 10%, 5%, and 1% levels, respectively.

Dependent Variable:	$CAR_{[t+1,t+20]}$		
	(1)	(2)	(3)
$Treated \times Post$	0.016** (0.007)	0.015** (0.006)	
$Post$			0.005 (0.004)
Controls	Yes	Yes	Yes
Sample	Matched	Unmatched Transactions as Control Group	Unmatched Transactions
Subclass FE	Yes	No	No
Observations	14,243	8,681	6,978
R^2	0.416	0.356	0.308
Mean DV	-0.005	-0.010	-0.010
SD DV	0.101	0.080	0.008
Treated Share	0.120	0.200	—

Table SA3. Excluding financial institutions.

This table presents results from estimating equation (1) for different subsets. Column (1) excludes the three broker-dealers associated with larger financial institution groups: Wells Fargo Prime Services, Standard Chartered Securities, and Vanguard Capital from the sample, while column (2) excludes all financial institutions based on 1-digit SIC code. The dependent variable is the post-gift 20-day CAR. Observations are at the transaction level. All regressions include controls from equation (1) and firm-BD pair and industry-year fixed effects. Standard errors are two-way clustered by firm and BD. *, **, *** indicate statistical significance at the two-tailed 10%, 5%, and 1% levels, respectively.

Dependent Variable:	$CAR_{[t+1,t+20]}$	
	(1)	(2)
$Treated \times Post$	0.018*** (0.006)	0.029*** (0.010)
Observations	14,114	9,927
R^2	0.415	0.412
Mean DV	-0.006	-0.006
SD DV	0.101	0.095
Treated Share	0.109	0.112