Fragmented Securities Regulation and Information-Processing Costs

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Using a unique setting where stand-alone banks submit filings to bank regulators instead of to the SEC, we examine the consequences of fragmented securities regulation on disclosure compliance and information-processing costs. Consistent with the theory that bank regulators are less concerned about transparency than the SEC is, we find that bank regulators' disclosure requirements are laxer, and stand-alone banks are more likely to violate filing deadlines. We further examine whether the disclosure system maintained by bank regulators (FDICconnect) generates higher information-processing costs. We find that the market reaction to insider filings by stand-alone banks is less timely. We also find that retail investors trade less on insider filings on FDICconnect than large informed investors do. Our findings suggest that regulatory fragmentation undermines market efficiency and disadvantages retail investors by affecting information-processing costs.

Keywords: Banks; regulation; FDICconnect; SEC EDGAR; insider trading **JEL codes**: G14, G21, G28, M41, M48

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1. Introduction

The financial regulatory structure in the U.S. is complex, consisting of multiple agencies with overlapping responsibilities. Regulators have raised concerns that regulatory fragmentation may undermine the stability and efficiency of the U.S. financial system (GAO, 2016). Most studies on regulatory fragmentation focus on inconsistent enforcement by different regulators (Rosen, 2003, 2005; Agarwal, Lucca, Seru, and Trebbi, 2014; Rezende, 2016; Nicoletti, 2018; Charoenwong, Kwan, and Umar, 2019; Costello, Granja, and Weber, 2019; Bischof, Daske, Elfers, and Hail, 2021; Granja and Leuz, 2020). Instead, we focus on the information channel, a previously unexplored channel through which regulatory fragmentation can affect the financial system. Specifically, we examine the consequences of having bank regulators, instead of the SEC, oversee disclosure regulation on disclosure compliance and information-processing costs in the stock market.

Stand-alone banks are commercial banks without a holding company. Traditionally, standalone banks have formed bank holding companies to expand their non-banking business or gain flexibility in issuing capital. However, post-crisis regulations such as the Dodd-Frank Act and Basel III increased the regulatory burden for bank holding companies and motivated some banks to shed their holding company structures. Recently, banks and regulators started questioning the usefulness of the holding company structure (Noreika, 2017; Rexrode, 2017).¹ From 2017 to 2019, Zions Bancorp, Bank OZK, BancorpSouth, and Northeast Bancorp dissolved their holding companies. The change in these banks' organizational structure accompanies an important change in the regulator overseeing disclosure.

¹ For example, New York Community Bancorp, in its 2017 Q3 earnings call, discussed shedding its holding company to avoid the systemically important financial institution (SIFI) designation.

With regard to securities disclosure regulation, stand-alone banks are treated differently from bank holding companies. While stand-alone banks are publicly traded on major stock exchanges, they are exempt from SEC registration and thus do not file on EDGAR. Stand-alone banks are required to disclose the same forms as other publicly traded companies, but they file with their federal bank regulator. The federal bank regulators have a separate filing and dissemination system called FDICconnect that is administered by the Federal Deposit Insurance Corporation (FDIC).²

Having bank regulators instead of the SEC oversee disclosure regulation can significantly affect bank transparency because the SEC and bank regulators have different objectives. The SEC focuses on market efficiency and investor protection and thus promotes full and timely disclosures. By contrast, bank regulators focus on the prudence and stability of the banking system, which may be at odds with providing complete and timely information to investors. Consistent with this idea, theories suggest that bank regulators may want to keep the bank information under their supervision opaque because transparency may impede regulators' ability to stem panics (Prescott, 2008; Morrison and White, 2013). To understand the effects of bank regulators' supervision on bank disclosure, we first examine how bank regulators' disclosure requirements differ from those of the SEC. On FDICconnect, stand-alone banks are required to electronically post beneficial ownership reports (Forms 3, 4, and 5) but are only encouraged to post other filings such as Forms 8-K, 10-K, and 10-Q electronically.³ In contrast, bank holding companies under the SEC's supervision are required to file all these forms on SEC EDGAR electronically. Moreover, stand-alone banks are not subject to the periodic review and comment-letter process administered by the

² In Appendix A, we provide the front page of the FDICconnect website (<u>https://efr.fdic.gov/fcxweb/efr/index.html</u>). ³ Stand-alone banks are required to submit these filings (8-K, 10-K, and 10-Q) to their federal bank regulators directly but only encouraged to submit them electronically on FDICconnect for public view. FDIC Financial Institution Letter on May 31, 2011. <u>https://www.fdic.gov/news/news/financial/2011/fil11040.pdf</u>.

SEC, which may affect the quality of disclosures.⁴ In sum, disclosure requirements imposed by bank regulators are laxer than those imposed by the SEC. To formally examine the level of bank regulators' enforcement of disclosure requirements, we compare the disclosure compliance of stand-alone banks and single-bank holding companies (i.e., bank holding companies consisting of one commercial bank). We find that stand-alone banks are more likely to violate filing deadlines for Forms 8-K, 4, and 10-K/Q than single-bank holding companies, consistent with the bank regulators placing less weight on timely disclosure.

Next, we examine a notable concern that FDICconnect may create higher informationprocessing costs and thus undermine stock market efficiency (Blankespoor, deHaan, and Marinovic, 2020). Higher price efficiency is one of the SEC's primary missions (SEC, 2020) and is crucial to disciplining banks through transparent disclosures (Goldstein and Sapra, 2014). Consistent with bank regulators not promoting full transparency of banks under their supervision, the disclosure system maintained by bank regulators, FDICconnect, is lesser-known to market participants, is covered by fewer information intermediaries, and has a less user-friendly interface than SEC EDGAR. These properties of FDICconnect are closely associated with higher information-processing costs and thus may undermine the stock price efficiency regarding filings on FDICconnect.

On the other hand, the information-processing costs related to FDICconnect may have a negligible effect on stock price efficiency. Once sophisticated investors become aware of FDICconnect, acquisition and integration costs are arguably small. An experienced programmer

⁴ The authority of the federal bank regulators to administer the Securities Exchange Act of 1934 is limited to specified provisions (Malloy, 1990). One such provision not specified to be administered by federal bank regulators in Section 12(i) of the Securities Exchange Act of 1934 is Section 408 of SOX. Hence, stand-alone banks are not subject to a mandated review of periodic disclosures at least once every three years. Interestingly, Jeans and Larsen (2019) conjecture that the SEC's comment letters on its accounting and disclosure practices prompted Bank OZK to transition to a stand-alone bank.

can readily develop an algorithm to track and trade on FDICconnect filings, and there is ample evidence that algorithmic traders increase stock price efficiency in response to corporate disclosures (Chakrabarty, Moulton, and Wang, 2020; Bhattacharya, Chakrabarty, and Wang, 2020; Chordia and Miao, 2020). Ultimately, whether and how much the separate disclosure system affects stock market efficiency are empirical questions.

We compare the timeliness of market reactions to Form 4 insider-trading filings on FDICconnect with the timeliness of reactions to filings on SEC EDGAR, which generate immediate market reactions (Du, 2015; Rogers, Skinner, and Zechman, 2016, 2017; Bolandnazar, Jackson, Jiang, and Mitts, 2020). We focus on insider-trading filings for several reasons. First, whereas other disclosures such as earnings announcements occur mostly outside of market hours, a large portion of Form 4 filings occur during market hours. Thus, we can observe intra-day market reactions specific to a certain Form 4 filing. Second, Form 4 filings contain useful information in a simple and homogenous format (Rogers et al., 2017). Hence, we can compare disclosures that contain similar information but are made on two different disclosure systems. Third, the information in Form 4 is not preempted by other sources because it is disclosed first through FDICconnect (for stand-alone banks) or SEC EDGAR (for bank holding companies) by regulation. Fourth, sophisticated investors such as mutual funds and hedge funds actively trade on the information in Form 4 filings (Chen, Cohen, Gurun, Lou, and Malloy, 2020; Crane, Crotty, and Umar, 2020).

In the main analysis, we compare the timeliness of market reactions to insider-trading filings by stand-alone banks with the timeliness of market reactions to those by single-bank holding companies. We find that the short-run market reaction to insider stock purchases disclosed on FDICconnect by stand-alone banks is almost non-existent and significantly smaller than the reaction to such purchases disclosed on SEC EDGAR by bank holding companies. Filings by stand-alone banks show smaller returns and abnormal trading volume, by 20.3 basis points and 139.6 percentage points, respectively, than those by single-bank holding companies during the 15 minutes after filing. However, the difference in returns reverses in the long run, and returns to Form 4 filings for stand-alone banks become more positive. These findings suggest that the short-run difference in market reaction is unlikely to result from the filings of single-bank holding companies containing more information.

The main empirical challenge in isolating the effects of the fragmented disclosure system on stock price efficiency is that the market reactions to Form 4 filings may differ not because of the separate disclosure systems but because of other confounding factors such as unobservable bank characteristics. To address this concern, we employ various empirical strategies. First, we conduct matched-sample analyses, including coarsened exact matching (CEM), entropy matching, propensity score matching (PSM), and exact matching of insider trades in stand-alone banks and those in single-bank holding companies (Jagolinzer, Larcker, and Taylor, 2011). In all matchedsample analyses, we find consistent results: the short-run market reaction to insider-trading filings on FDIC connect by stand-alone banks is significantly smaller than the reaction to such filings on SEC EDGAR by single-bank holding companies, and the difference in returns reverses or disappears in the long run. Second, we conduct a within-bank analysis by restricting the sample to banks that transitioned to or from a stand-alone bank. In this analysis, we control for bank fixed effects, thereby capturing within-bank variation in market reaction. This approach allows us to compare market reactions to filings on different disclosure venues by the same bank, thereby reducing the concern that market reactions differ because banks reporting to FDICconnect and SEC EDGAR are fundamentally different. Consistent with the main results, we find that the shortrun market reaction to a stand-alone bank's insider purchases filings on FDICconnect is significantly smaller than the reaction to the same bank's filings on SEC EDGAR when that bank is a bank holding company.

Next, we exclude three plausible alternative explanations for the short-run difference in market reaction between FDICconnect and SEC EDGAR filings. First, stock market investors may generally be less interested in stand-alone banks' informational events. To address this concern, we run a placebo test using earnings announcements. Earnings are usually announced in press releases first and filed on the disclosure system with a significant delay (Bochkay, Markov, Subasi, and Weisbrod, 2021). If investors' indifference to stand-alone banks mainly drives the market-reaction differences to Form 4 filings, we expect a significant difference in market reactions to earnings announcements as well. However, we find no difference in two-day CAR to earnings announcements by stand-alone banks and those by single-bank holding companies. The results suggest that the short-run difference is not driven by the investors' indifference to stand-alone banks' disclosure.

Second, we test whether the lack of real-time media coverage by Dow Jones Newswires, a well-known market-moving intermediary, drives the short-run difference (Li, Ramesh, and Shen 2011; Rogers et al., 2017). Because Dow Jones Newswires covers no insider trading for standalone banks, we compare the market reactions to Form 4 filings on FDICconnect by stand-alone banks and the reactions to filings on SEC EDGAR by single-bank holding companies without coverage by Dow Jones Newswires. We find that the short-run market reactions to filings on FDICconnect are still significantly smaller than those to filings on SEC EDGAR. This result suggests that real-time media coverage alone does not sufficiently explain the short-run difference in market reaction. Third, we examine whether the difference in short-run market reactions is driven by the fact that stand-alone banks have less institutional ownership and fewer analysts following than singlebank holding companies. We confirm that stand-alone banks have significantly less institutional ownership and fewer analysts following than single-bank holding companies. However, controlling for these differences does not change the results on the short-run difference in market reactions.

Finally, we examine whether retail investors are more informationally disadvantaged regarding Form 4 filings posted on FDICconnect as opposed to SEC EDGAR. Retail investors are likely to face higher information-processing costs for filings on FDICconnect because news coverage of these filings is limited, and retail investors typically have limited access to other information sources such as analysts and data vendors. We find that retail investors do not trade more on Form 4 filings on FDICconnect, whereas large investors trade more on Form 4 filings on FDICconnect, whereas large investors trade more on Form 4 filings on FDICconnect than on those on SEC EDGAR. These findings are consistent with the notion that retail investors are informationally disadvantaged regarding FDICconnect filings, potentially due to higher information-processing costs.

Our study contributes to the fragmentation of the U.S. financial regulatory framework, especially the recent trend of shedding the holding company structure to avoid the increased regulatory burden after the financial crisis. This unintended consequence of the post-crisis regulatory burden on bank holding companies has gained great attention, and regulators and policymakers are concerned that regulatory fragmentation undermines the stability and efficiency of the U.S. financial system (GAO, 2016). Prior studies suggest that regulatory fragmentation creates inconsistent enforcement by different regulators (Rosen, 2003, 2005; Agarwal et al., 2014; Rezende, 2016; Nicoletti, 2018; Charoenwong et al., 2019; Costello et al., 2019; Bischof et al.,

2021; Granja and Leuz, 2020).⁵ Instead, we focus on the information channel, a previously unexplored channel through which regulatory fragmentation can affect the financial system. We show that bank regulators' disclosure system decreases stock price efficiency and disadvantages retail investors informationally, consistent with information-processing costs being an important driving force of our findings.

Our study also adds to the discussion about a uniform platform to disseminate information. Prior studies suggest that centralized electronic dissemination of information has significant consequences for capital markets and issuer behavior (Cuny 2016, 2018; Gao and Huang, 2020). Our study suggests that even a compatible dissemination system may create negative consequences in stock markets if information-processing costs are high. These findings can be essential for the SEC, given that its mission includes enhancing market efficiency and providing a level playing field to all investors. Our results support regulators' argument for consolidating disclosure regulation administration to a single regulator (Task Group on Regulation of Financial Services, 1984; SEC, 1999).

Our study also speaks to the discussion on the effect of bank regulators' supervision on bank transparency (Goldstein and Sapra, 2014; Gopalan, 2018; Granja 2018; Costello et al., 2019; Kleymenova and Zhang, 2019; Gallemore, 2021; Bischof et al., 2021; Kleymenova and Tomy, 2021). Although theories predict that bank regulators have incentives to keep their regulated banks more opaque (Prescott, 2008; Morrison and White, 2013), there is limited empirical evidence on this issue. The unique regulatory structure of stand-alone banks allows us to examine the disclosure

⁵ In the paper most closely related to our study, Bischof et al. (2021) compare the differences in risk-disclosure compliance by European banks under securities regulators and bank regulators. They find that banks' compliance with risk-disclosure rules is stronger under bank regulators' supervision, potentially because bank regulators have more supervisory powers and resources.

policies administered by bank regulators. We find evidence suggesting that bank regulators are less concerned than the SEC about timely disclosure and full transparency.

2. Institutional Background and Hypothesis

2.1. Disclosure Regulation of Stand-Alone Banks

Securities issued by stand-alone banks are exempt from SEC regulation under Section 3(a)(2) of the Securities Act of 1933. The exemption was granted in 1933 based on the principle that banks are already heavily regulated and are thus presumed to provide adequate disclosures to their stakeholders even if they are not obligated to do so by federal securities laws.^{6,7} Several decades later, the Securities Acts Amendments of 1964 mandated SEC registration and disclosure for firms with more than \$1 million in assets or more than 500 shareholders. As a result, many stand-alone banks were required to begin submitting Securities Exchange Act Filings (e.g., 10-Ks/Qs, 8-Ks, proxy statements). However, due to the SEC registration exemption, federal bank regulators were given jurisdiction over the banks' disclosure and securities regulation under Section 12(i) of the Securities Exchange Act of 1934. In 1974, Section 12(i) was further amended to require federal bank regulators to issue securities regulations substantially similar to those set by the SEC, thereby subjecting stand-alone banks to the same securities regulations as bank holding companies and corporations.

Publicly traded stand-alone banks file the same forms with their federal bank regulators as other public companies do with the SEC. National banks file with the Office of the Comptroller of

⁶ See "SEC Regulation of American Depositary Receipts: Disclosure, Ltd." *The Yale Law Journal*, vol. 65, no. 6, 1956, pp. 861–872; "Banks and the Securities Act of 1933" *Virginia Law Review*, vol. 52, no. 1, 1966, pp. 117–128; and "Bank Exemption from the 1933 Securities Act" *Banking Law Journal*, vol. 93, pp. 432–459.

⁷ However, bank holding companies were subject to SEC registration because they were considered corporations rather than banks.

the Currency (OCC), state banks that are a member of the Federal Reserve file with the Federal Reserve Board (FRB), and state banks that are non-members file with the FDIC. Most listed standalone banks are non-member state banks and file with the FDIC. As depicted in Figure 1, standalone banks' securities regulation is under their respective federal bank regulator's jurisdiction, whereas bank holding companies' securities regulation is overseen by the SEC.

One of the most salient differences is that stand-alone banks are required to submit some filings via FDICconnect. Before 2003, bank regulators did not operate an electronic filing system, whereas the SEC had run EDGAR since the mid-1990s. Because Section 403 of SOX required insider transactions to be electronically filed within two business days, federal bank regulators adopted the same rule. Federal bank regulators (OCC, FRB, and FDIC) jointly developed an electronic platform called FDICconnect that started receiving files on June 30, 2003. Related to FDICconnect, the SEC has expressed concern that filing disclosures with different regulators "makes it difficult for many investors to know where to find the reports of a particular financial institution" (SEC, 1999). Although stand-alone banks are required to electronically file beneficial ownership reports (Forms 3, 4, and 5) via FDICconnect, they are only encouraged to post other filings such as Forms 10-K/Q and 8-K on FDICconnect.⁸ Moreover, stand-alone banks are not subject to the periodic review and comment-letter process administered by the SEC, which may affect the quality of disclosures. Overall, our findings suggest that bank regulators' disclosure requirements are significantly weaker than those by the SEC.

2.2. Hypothesis Development

⁸ Unexpectedly, we find three banks (Albemarle First Bank, Connecticut Bank & Trust, and Desert Community Bank) that have no presence on FDICconnect and submitted hand-written Form 4 filings to the FRB, apparently in violation of Section 403 of SOX. This finding is also consistent with bank regulators putting less emphasis on transparent disclosures.

We hypothesize that having bank regulators rather than the SEC oversee disclosure regulation can significantly affect bank transparency for several reasons. First, the SEC and bank regulators have different objectives. The SEC focuses on market efficiency and investor protection and thus promotes full and timely disclosures. By contrast, bank regulators focus on the prudence and stability of the banking system, which may be at odds with providing full and timely information to investors. Consistent with this idea, theories suggest that bank regulators may want to keep the bank information under their supervision opaque because transparency may impede regulators' ability to stem panics (Prescott, 2008; Morrison and White, 2013). Second, studies suggest that regulators are generally resource-constrained (Jackson and Roe, 2009). Given that securities disclosures are not bank regulators' primary focus, they may devote fewer resources to the departments responsible for disclosures (Hu 2014). Finally, regulatory capture is considered an important factor in enforcement levels, and prior studies show evidence of regulatory capture in the U.S. banking industry (Lucca, Seru, and Trebbi, 2014; Lambert, 2019). If bank regulators were captured by their supervised banks, we would expect laxer disclosure requirements. While we do not differentiate the potential channels leading to bank regulators' lax disclosure requirements, we hypothesize that this laxity affects stand-alone banks' disclosure compliance and test the following hypothesis.

H1: Stand-alone banks are more likely to violate disclosure filing deadlines than single-bank holding companies.

FDICconnect has several features that may deteriorate bank transparency. First, many market participants are unaware of FDICconnect. Schmidt (2017) notes, "There are several

software programs or services that can be used to monitor merger-related filings on EDGAR, but we aren't aware of any such programs or systems for the FDIC's system." Anecdotal evidence suggests that even some experienced bank analysts are not aware of FDICconnect.^{9,10} Second, FDICconnect is covered by fewer information intermediaries than SEC EDGAR. We find differences in coverage by data vendors and information intermediaries.¹¹ Especially for Form 4 filings, as summarized in Appendix B, many real-time data vendors do not comprehensively collect Form 4 filings from FDICconnect. Newswires such as Dow Jones do not cover Form 4 filings from FDICconnect as they do for most filings on SEC EDGAR.¹² Also, in the Company Filings section of Bloomberg Terminal, we could not find any Form 4 filings on FDICconnect, whereas filings on SEC EDGAR are generally updated in real time. Data providers without a realtime feed also have less coverage of stand-alone banks, and the contents of filings by stand-alone banks are often inaccurate.¹³ Thomson Reuters, which provides a feed of the previous day's filings every weekday morning, appears to have started coverage of FDIC connect filings in 2015 but does not cover all stand-alone banks.¹⁴ Third, FDICconnect is less user-friendly than SEC EDGAR, which may also increase information-acquisition costs. FDICconnect does not offer any public dissemination service that pushes disclosures to interested users. Also, access to the website

⁹ https://www.fool.com/investing/2017/09/21/bank-of-the-ozarks-no-longer-submits-regulatory-fi.aspx

¹⁰ We also find numerous cases of Freedom of Information Act (FOIA) requests with the FDIC to access publicly available information such as 8-K, 13D, and 13G filings, which suggests that market participants are not aware that these filings can be downloaded from FDICconnect.

¹¹ In untabulated analysis, even after matching for bank characteristics, we find that stand-alone banks have less analyst coverage and institutional ownership than single-bank holding companies.

¹² RavenPack, which we use to access newswires, has no insider-trading news coverage of stand-alone banks. It has insider transaction news for Towne Bank, a stand-alone bank, but this appears to be due to a misclassification of insider trades by Franklin Financial Services Corp, a bank holding company.

¹³ WSJ Quotes, which includes insider transactions in its corporate profiles, leaves the space for stand-alone banks blank. Yahoo! Finance does cover insider transactions in stand-alone banks but shows only a subset of transactions filed.

¹⁴ We also find some discrepancies in the source information on FDICconnect: several insiders are misclassified as a director or officer of other stand-alone banks, and the filing dates coded in Thomson Reuters are sometimes days after the FDICconnect filing date.

requires legal consent every time, and individual filings do not have a separate URL. Banks that file to FDICconnect have commented that the system needs improvement.^{15,16} All these factors may undermine the stock price efficiency regarding filings on FDICconnect.

On the other hand, the information-processing costs related to FDICconnect may have a negligible effect on stock price efficiency. Once sophisticated investors become aware of FDICconnect, acquisition and integration costs are arguably small, as an experienced programmer can readily develop an algorithm to track and trade on FDICconnect filings. And there is ample evidence that algorithmic traders increase stock price efficiency in response to corporate disclosures (Chakrabarty et al., 2020; Bhattacharya et al., 2020; Chordia and Miao, 2020). Ultimately, unlike our first hypothesis, whether and how much the separate disclosure system affects stock market efficiency are empirical questions. Thus, we state our hypothesis in the null form.

H2: FDICconnect creates no impact on the stock market response to Form 4 filings.

Finally, we examine whether retail investors are informationally disadvantaged regarding Form 4 filings on FDICconnect as opposed to SEC EDGAR. Retail investors can be less informed about insider trading filings on FDICconnect for several reasons. They tend to rely on news coverage (Blankespoor et al., 2019; Bushee et al., 2020), but news coverage of insider trading by stand-alone banks is limited, as shown in Appendix B. Also, retail investors have limited access

¹⁵ See comment letters to the FDIC by the American Bankers Association (December 4, 2018) and the International Bancshares Corporation (December 4, 2018).

¹⁶ Other differences exist between FDICconnect and SEC EDGAR in terms of fees and operating hours. FDICconnect does not charge filing fees, whereas the SEC charges filing fees proportional to the maximum aggregate price of securities (Section 6(b) of the Securities Act of 1933 and Sections 13(e) and 14(g) of the Securities Exchange Act of 1934). EDGAR is open from 6:00 am to 10:00 pm EST on weekdays, whereas FDICconnect is open from 8:00 am to 10:00 pm EST on weekdays.

to other information sources, such as analysts and data vendors. Thus, we hypothesize that retail investors trade less on insider trading filings on FDICconnect than large informed investors do.

H3: *Retail investors trade less on insider trading filings on FDICconnect than large informed investors do.*

3. Sample Selection

We construct our primary sample starting from stand-alone banks filed on FDICconnect from 2003 to 2018 and identify 48 stand-alone banks listed on a major stock exchange that are covered in CRSP. In Table 1, we report descriptive statistics to provide a sense of these 48 publicly traded stand-alone banks in the primary sample. The descriptive statistics in Table 1 are measured at the bank level for the most recently available date as of the end of 2018. Most stand-alone banks in our sample are listed on NASDAQ (89.58%) and are non-member state banks regulated by the FDIC (79.17%). Stand-alone banks have total assets of \$6.8 billion on average (median \$1.1 billion). Given that more than 87 percent of commercial banks in the U.S. have under \$1 billion in total assets in 2018, the stand-alone public banks in our sample are typically large regional banks rather than small community banks. The market value of equity is, on average, \$845.5 million (median \$103.8 million). On average, stand-alone banks have 35 branches (median 10 branches), and on average, they operate in two states (median one state). Some stand-alone banks are large enough to be included in the S&P 1500 (e.g., First Republic Bank, Bank OZK, Signature Bank, Opus Bank, and BancorpSouth).

Our main empirical challenge is that any differences in stock market reactions can be driven by confounding factors such as unobservable bank characteristics because stand-alone banks and bank holding companies may differ in several dimensions. To address this concern, we construct the control group using only bank holding companies consisting of one commercial bank ("single-bank holding companies"), which reduces the differences in bank business models.^{17,18} Also, we conduct various matched-sample analyses using coarsened exact matching (CEM), entropy matching, propensity score matching (PSM), and exact matching.

Table 2 provides descriptive statistics of the main sample at the transaction level for standalone banks and single-bank holding companies. Bank size, measured as the natural log of market cap, is smaller for stand-alone banks than for single-bank holding companies. Tier 1 capital ratio and deposits as a proportion of assets are similar for the two groups. Loans as a proportion of assets are larger for stand-alone banks than for single-bank holding companies. Importantly, stockmarket illiquidity proxied by the Amihud illiquidity measure (Amihud, 2002) is higher for standalone banks, which could be a concern for testing the short-run market reaction. We address this concern using various matching procedures to minimize differences in important bank characteristics between stand-alone banks and single-bank holding companies.

We obtain information on 8-K and 10-K/Q filings from SNL Financial for stand-alone banks and from the WRDS SEC filing database for bank holding companies.¹⁹ We remove amended filings to avoid double counting. We classify an 8-K as late if the Filing Date is more

¹⁷ We identify single-bank holding companies as follows. First, we select all bank holding companies with one commercial bank. Then, we compare the total assets at the commercial bank level (RCFD2170 or RCON2170 in call reports) to the consolidated total assets at the bank holding company level (BHCK2170 in FR Y-9C or BHSP8519 in FR Y-9SP) and require the difference to be within 1 percent of the holding company's assets.

¹⁸ Because of historical deregulation, there is less restriction on the types of business that stand-alone banks can engage in. Many stand-alone banks engage in brokerage, wealth management, and investment advisory businesses. None of the bank holding companies that became stand-alone banks mention having to divest non-banking businesses due to the transition.

¹⁹ SNL Financial is a data vendor that specializes in financial institutions. It collects stand-alone bank filings in electronic form from bank websites and FDICconnect, and it also scans hard copies from the respective bank regulators' securities disclosure office. We warn that there is a chance that SNL Financial may omit some of the 8-Ks by stand-alone banks if a bank did not post those filings on its website, or if FDICconnect and the respective bank regulators did not provide them to SNL Financial.

than four business days after the Period of Report. We further adjust some filings' Period of Report by reading the 8-Ks because several 8-Ks about earnings releases mistakenly used the fiscal periodend as the Period of Report. We classify a 10-K/Q as late if the Filing Date is after the deadline, which differs by quarterly and annual filings and by the type of filer. For 10-K filings, the deadline is 60 days for large accelerated filers, 75 days for accelerated filers, and 90 days for nonaccelerated filers. For 10-Q filings, the deadline is 40 days for large accelerated filers and accelerated filers and 45 days for non-accelerated filers. To determine the deadlines, we collect filer type information by reading 10-K/Qs on SNL Financial for stand-alone banks and on Audit Analytics for bank holding companies.

We hand-collect Form 4 filings on FDICconnect and obtain filings on SEC EDGAR from Thomson Reuters filed from 2003 to 2018. We focus on open-market purchases because prior studies suggest that insider sales are less informative, and they find no significant intra-day market reaction to insider sales (Rogers 2008; Brochet 2010; Du 2015; Rogers et al. 2016, 2017).²⁰ For the timing of filing on FDICconnect, we use the filing date timestamp.²¹ For filings on EDGAR, since Thomson Reuters does not provide the SEC filing timestamp, we follow Johannesson and Kim (2020) to merge timestamps on the WRDS SEC filing database.²² Rogers et al. (2017) show that the SEC filing timestamp is, on average, 62.3 seconds (median 37.8 seconds) later than the time that Form 4 filings are available on the file transfer protocol (FTP). To address the concern

²⁰ The Form 4 filings at FDICconnect usually omit transaction codes, which makes it more difficult to interpret the filings. We carefully review all filings with share acquisition, and we drop the filings that have option exercises, that mention share grants in the footnotes, and that are amendments (filings with non-missing "Date of Original Filing"). We drop filings when multiple insiders from the same bank have Form 4 filings in one day with the same transaction prices, which are most likely grant-related.

²¹ We check whether the timestamp accurately reflects when the filing is publicly available. For two weeks in late 2018, we recorded the latest filing on FDICconnect every 10 seconds. We confirm that the Form 4 filing is always posted within 10 seconds of the stamped time.

 $^{^{22}}$ For all Form 4 filings by sample firms, we reconstruct the URL to each Form 4 and scrape the film number on SEC EDGAR. The film number corresponds to the DCN identifier in the Thomson Reuters dataset, which allows us match each filing to a timestamp.

that market reaction to SEC filings may occur earlier than the timestamp, we examine a wider window and conduct a robustness test limiting the sample period starting from the end of 2014 when the SEC supposedly modified the system to ensure fair disclosure to the end of 2018. (Jackson and Mitts 2014; Patterson, Tracy, and Ackerman 2014).²³ We restrict the sample to filings made between 9:40 a.m. and 3:30 p.m. EST to examine intra-day market reactions.²⁴ Finally, bank characteristics are from Call Reports.

4. Empirical Results

4.1. Disclosure Compliance (Test of H1)

We examine whether bank regulators are laxer in enforcing disclosure requirements for stand-alone banks than the SEC is for bank holding companies. We measure disclosure compliance using the occurrence of late 8-K, Form 4, and 10-K/Q filings. In Panel A of Table 3, we provide univariate comparisons for the main sample of stand-alone banks and single-bank holding companies. Stand-alone banks are more likely to violate the deadlines for 8-K, Form 4, and 10-K/Q filings. Stand-alone banks file 8-Ks late in 9 percent of the cases, whereas single-bank holding companies file late in 4 percent of the cases (Difference: 0.05, p<0.01). This result suggests that the probability of violating the 8-K filing deadline is more than double for stand-alone banks than for single-bank holding companies. Similarly, stand-alone banks file Form 4 filings more than two business days after an insider purchase in 22 percent of the cases. In contrast, single-bank holding companies file late in 15 percent of the cases (Difference: 0.07, p<0.01). Stand-alone banks file

²³ Our results for the market efficiency analysis are robust to limiting the sample period starting from the end of 2014 (untabulated).

 $^{^{24}}$ The restriction is to avoid beginning- and end-of-day trading effects (Rogers et al. 2016, 2017). Our results for the market reaction to insider filings are robust to including all filings within the market hours of 9:30 am to 4:00 pm EST (untabulated).

10-K/Q filings after the filing deadline in 15 percent of cases, compared to 11 percent for singlebank holding companies (Difference: 0.04, p<0.01). The differences in the probability of late filing are statistically significant at the 1% level and economically meaningful in all three comparisons.

Next, we conduct multivariate analyses to address the concern that our findings in the univariate analyses could be driven by other bank characteristics. To run this test, we estimate the following model:

Late 8 – K, Late Form 4, or Late
$$10 - K/Q_{i,j,t} = \beta_1 SAB_{i,j,t} + \beta_2 X_{i,t} + \delta_t + \epsilon_{i,j,t}$$
. (1)

The dependent variable is *Late 8-K*, *Late Form 4*, or *Late 10-K/Q_{i,j,t}*, an indicator variable equal to one if the 8-K, Form 4, or 10-K/Q filing is late, respectively. The explanatory variable of interest, $SAB_{i,j,t}$, is an indicator variable that equals one for filings by stand-alone banks. The bank-level characteristics, $X_{i,t}$, include Log(MVE), *Tier1capital*, *Deposits*, *Loans*, and *Amihud Illiquidity*. The year-fixed effects, δ_t , are included to control for economic conditions affecting all banks and trades in a given year. All variables are defined in Appendix C.

In Panel B of Table 3, we find that the coefficients of *SAB* are significantly positive, at least at the 10% level (0.053, p<0.05; 0.064, p<0.10; 0.043, p<0.10). The magnitudes of the coefficients are also comparable to those in the univariate analysis. Overall, we find that stand-alone banks are less compliant with the disclosure requirements than single-bank holding companies. Although these findings are descriptive and hence we cannot claim a causal relation, they suggest that bank regulators exercise laxer enforcement regarding stand-alone banks' disclosure timeliness.

4.2. Market Response to Insider-Trading Filings (Test of H2)

Next, we examine whether FDICconnect creates higher information-processing costs and thus undermines stock market efficiency. Given that price efficiency is one of the SEC's primary missions (SEC, 2020) and is crucial to discipline banks via transparency (Goldstein and Sapra, 2014), stock price inefficiency can be an important potential cost of bank regulators' disclosure regulation.

In Panel A of Table 4, we compare daily mean abnormal returns around the insiderpurchase filing date for stand-alone banks and single-bank holding companies. Abnormal returns are calculated as raw returns minus the value-weighted size-decile portfolio return from CRSP. Mean abnormal returns for stand-alone banks' filings on FDICconnect are reported under the column labeled SAB. None of the daily mean abnormal returns from one day prior to four days following the filing date are statistically different from zero. In contrast, the bank holding companies' filings on SEC EDGAR reported under the column labeled BHC show a positive and significant market reaction of 41 basis points (p<0.01) on the filing date. Mean abnormal returns on the day after the filing date, aggregated around [0,+2] and aggregated around [0,+4], are also insignificant for stand-alone banks but significantly positive for filings by single-bank holding companies.

However, mean abnormal returns around [0,+42] and [0,+63] trading days of the filing date are positive and statistically significant for filings by both stand-alone banks and bank holding companies. Interestingly, mean abnormal returns around [0,+63] are larger for filings by standalone banks. The reverse in the long-run returns may be driven by the bank size difference, as prior studies suggest that insider trading is most informative in small firms (Seyhun, 1986; Lakonishok and Lee, 2001; Jeng, Metrick, and Zeckhauser, 2003). Consistent with bank size driving the difference in long-run returns to Form 4 filings, we find no significant difference in CAR measured from the filing date to 21, 42, and 63 in our robustness tests where the samples are matched on bank size and other characteristics. In sum, these results suggest that the short-run difference in market reaction either reverses or disappears in the long run. It is unlikely, therefore, that the shortrun difference can be attributed to more informative filings by single-bank holding companies.

In Panel B of Table 4, we compare daily mean abnormal volume around the filing date for stand-alone banks and single-bank holding companies. Abnormal volume is calculated as the daily volume (as a proportion of shares outstanding) divided by average daily volume for the same day of the week in the past 52 weeks. We find significantly greater mean abnormal volume, aggregated around [0,+2] and [0,+4] of the filing date, for filings by single-bank holding companies. These findings are consistent with the results for abnormal returns.

Next, we conduct intra-day analyses to closely compare immediate market responses to Form 4 filings by stand-alone banks and single-bank holding companies. In Figure 2, we plot mean returns and mean cumulative abnormal volume on a second-by-second basis from 5 minutes prior to 15 minutes after the Form 4 filings of open-market purchases. We include all observations with at least one transaction within the window, which results in 285 filings by stand-alone banks and 3,973 filings by single-bank holding companies. In Panel A of Figure 2, we plot mean returns, where returns are computed as the raw return from 5 minutes prior to filing to event time. The returns to filings by stand-alone banks (in solid red) are small after the filing. On the other hand, the returns to filings by single-bank holding companies' filings increases to around 20 basis points within 60 seconds of the filing. The instantaneous reaction to the filings by single-bank holding companies is consistent with the findings of Rogers et al. (2017), who document returns of around 30 basis points after 60 seconds of the filing. The magnitudes of the market reaction in our sample are slightly smaller than the findings in Rogers et al. (2017), which could be due to the different composition of sample firms or the longer sample period. In any case, the non-reaction to potentially positive information disclosure by stand-alone banks is surprising and notable.

In Panel B of Figure 2, we plot the mean cumulative abnormal volume.²⁵ Similar to the returns, the cumulative abnormal volume to filings by stand-alone banks (in solid red) shows a small reaction, whereas the cumulative abnormal volume to filings by single-bank holding companies (in dotted black) increases immediately after the filing.

Next, we conduct multivariate analyses to address the concern that our findings in the univariate analyses could be driven by other factors such as bank size, trade size, and insider characteristics. To run this test, we estimate the following model:

Raw Return or
$$CAR_{i,j,t} = \beta_1 SAB_{i,j,t} + \beta_2 X_{i,t} + \beta_3 Y_{i,j,t} + \delta_t + \epsilon_{i,j,t}.$$
 (2)

The dependent variables are *Raw Return*_{*i,j,t*}, percent change²⁶ in price from filing time to event time; and *Cumulative Abnormal Return (CAR)*_{*i,j,t*}, cumulative raw return minus the value-weighted size-decile portfolio. The explanatory variable of interest, $SAB_{i,j,t}$, is an indicator variable that equals one for filings by stand-alone banks. The bank-level characteristics, $X_{i,t}$, include Log(MVE), *Tier1capital*, *Deposits*, *Loans*, and *Amihud Illiquidity*. We include *Amihud Illiquidity* to control for market depth and trading liquidity (Bolandnazar et al., 2019).²⁷ The transaction-level characteristics, $Y_{i,j,t}$, include Log(TradeSize), *CEO*, and *CFO*.²⁸ The year-fixed effects, δ_t , control

 $\left\{\sum_{m=-5}^{t} Volume_{0,m} - \left(\sum_{w=-52}^{-1} \sum_{m=-5}^{t} Volume_{w,m}/52\right)\right\} / \left(\sum_{w=-52}^{-1} \sum_{m=-5}^{15} Volume_{w,m}/52\right),$

²⁵ Cumulative abnormal volume is computed as cumulative dollar volume from 5 minutes prior to the filing through event time less the average volume for the exact same day of the week and time (calculated over the prior 52 weeks), deflated by the average cumulative volume for the entire window (calculated over the prior 52 weeks). The formula for cumulative abnormal volume at time *t* in the current week is

where *Volume* is dollar amount of trading, *m* is minutes around the filing time, and *w* is weeks around the filing date. ²⁶ We define *Raw Return* as the percent change (i.e., multiplied by 100) for the intra-day market response analysis because the market reactions within several minutes are generally smaller than 1 percent.

²⁷ Further controlling for share turnover and idiosyncratic stock volatility does not change our results.

²⁸ Prior studies also include control variables for pre-planned transactions pursuant to Rule 10b5-1. Jagolinzer (2009) finds higher returns to 10b5-1 trades. In contrast, Brochet (2010) finds that insider-purchase filings that are pre-planned have smaller positive abnormal return than those that are not pre-planned. We find no cases where standalone banks mention that an open-market purchase was scheduled under a 10b5-1 plan. In addition, 10b5-1 plans are

for economic conditions affecting all banks and trades in a given year. All variables are defined in Appendix C.

In column (1) of Table 5, returns are measured from filing to 1 minute after filing for the main sample. The coefficient of SAB is significantly negative (-0.137, p < 0.01). The coefficient implies that returns on filings by stand-alone banks are 13.7 basis points smaller than returns on filings by single-bank holding companies 1 minute after the filing. As we lengthen the window to 5 minutes in column (2), the coefficient of SAB is consistently significantly negative (-0.135, p < 0.01). In column (3), where the window is further lengthened to 15 minutes, the coefficient of SAB is more negative and significant (-0.203, p < 0.01). In columns (4) – (6), we repeat the same tests using cumulative abnormal volume as the dependent variable. In column (4), cumulative abnormal volume is measured from filing to 1 minute after the filing. There are fewer observations for the cumulative abnormal volume tests than for the return tests because we require at least ten out of the 52 past weeks to have transactions within the window. The coefficient of SAB is significantly negative (-0.619, p<0.01). Similar to the results in the univariate analyses, the coefficient of SAB increases over time in columns (5) and (6). In sum, these results suggest that in the short run, the market reaction to filings on FDICconnect is significantly smaller than the reaction to filings on SEC EDGAR.

In Table 6, we test long-term returns to Form 4 filings using the same regression framework as in equation (2). The dependent variable is cumulative abnormal returns measured as raw returns minus the size-decile value-weighted portfolio returns. In columns (1) - (3), the coefficients of *SAB* imply that returns to filings by stand-alone banks are 0.4 to 0.8 percentage points smaller up to four days after the filing than are returns to filings by single-bank holding companies. However,

relatively rare for purchase transactions. For these reasons, we do not include a control variable for transactions under Rule 10b5-1.

in columns (4) – (5), the coefficients of *SAB* are statistically insignificant, implying that long-term returns measured up to 21 and 42 trading days after filing are not statistically different for standalone banks and single-bank holding companies. In column (6), the coefficient of *SAB* is significantly positive for the [0,+63] window. However, once we run the same analyses after applying matching procedures in our robustness tests, we find no significant difference in CAR measured from the filing date to 21, 42, and 63 trading days. In addition, we find consistent results (untabulated) when we extend our sample to include Form 4 filings outside of market hours. Overall, the smaller short-run market reaction to filings by stand-alone banks suggests that FDICconnect creates higher information-processing costs and thus undermines stock market efficiency.

4.3. Robustness Tests: Matching and Within-bank Analysis

We address concerns that any differences in stock market reactions may be driven by confounding factors such as unobservable bank characteristics. First, we conduct various matched-sample analyses using coarsened exact matching (CEM), entropy matching, propensity score matching (PSM), and exact matching. In the first three matching procedures, we match stand-alone banks and single-bank holding companies on *Log(MVE)*, *Tier1capital*, *Deposits*, *Loans*, *Amihud Illiquidity*, *Log(TradeSize)*, *CEO*, and *CFO*. For exact matching, we match on *Log(MVE)*, *Tier1capital*, *Deposits*, *Loans*, *Amihud Illiquidity*, and *Log(TradeSize)* due to sample attrition. With CEM, we coarsen the data by dividing observations into five evenly spaced bins of all continuous variables and two bins of all binary variables. As a result, stand-alone banks and single-bank holding companies have similar weighted histograms. Then, the weights are applied in a weighted least squares regression. With entropy matching, we calculate weights for each

observation such that the weighted means for all control variables are equal across stand-alone banks and single-bank holding companies. Then, the weights are applied in a weighted least squares regression. With PSM, we estimate the probability that a bank is a stand-alone bank using a probit model with all control variables, and we match without replacement at the transaction level using a caliper of 0.001. Finally, with exact matching, we match at the transaction level to minimize the sum of absolute distances between the treatment and control firms for all continuous control variables.

In Panel A of Table 7, we re-run the intra-day market response analysis in Table 5 using four matching procedures.²⁹ In columns (1) – (3), we find that the coefficients of *SAB* are all significantly negative for returns, and their magnitudes change slightly depending on the matching procedure but are largely consistent with those in Table 5. The magnitude is the largest for the exact matching, which is arguably the tightest matching procedure. In columns (4) – (6), we find consistent results for cumulative abnormal volume, and the coefficients of *SAB* are all significantly negative. Again, their magnitudes change slightly depending on the matching procedure but are largely consistent with those in Table 5. Given that we lose almost 90% of the sample for PSM and exact matching, the results are robust to the sample selection and composition. Notably, the results mitigate the concern that the difference in short-run market reaction is driven by the stockmarket illiquidity of stand-alone banks, as we also match the sample based on the Amihud illiquidity measure. In Panel B of Table 7, we re-run the long-run market response analysis in Table 6 using four matching procedures.³⁰ We find a similar pattern: the difference in returns

 $^{^{29}}$ In untabulated analyses, we assess covariate balance for PSM and exact matching. For PSM, we find that all covariates are balanced except for *Tier1capital*. However, the difference is only 0.006 (0.123 for SAB vs. 0.129 for BHC) and significant at the 10% level. For exact matching, we find that all covariates are balanced.

 $^{^{30}}$ Similarly, in untabulated analyses, we assess covariate balance for PSM and exact matching. For PSM, we find that all covariates are balanced. For exact matching, we find that all covariates are balanced except for *CFO* because we exclude *CEO* and *CFO* from the matching covariates due to sample attrition. The difference is 0.032 (0.039 for SAB vs. 0.071 for BHC) and significant at the 5% level.

reverses or disappears in the long run, suggesting that the short-run difference in market reaction is unlikely to be attributable to filings by single-bank holding companies containing more information.

In addition, we conduct a within-bank analysis by restricting our sample to banks that transitioned to or from a stand-alone bank. This setting allows us to test the difference in market reactions by the same bank on different disclosure venues and thus further control for unobservable time-invariant bank characteristics that may drive our findings. In Table 8, we estimate equation (2) with additional bank fixed effects but exclude year fixed effects because FDICconnect filings show up only once or are nonexistent in multiple years. The results are largely similar to those in Table 5. In columns (1) – (3), we find that short-run returns are smaller for FDICconnect filings than for SEC EDGAR filings, significant at the 5% level, except for in column (3). In columns (4) – (6), the cumulative abnormal volume difference is significantly negative, at least at the 5% level, consistent with the results in Table 5.³¹

4.4. Alternative Explanation 1: Investor Indifference to Stand-alone Banks

We show that the stock market responds in a less timely way to insider-trading filings by stand-alone banks than to filings by single-bank holding companies. Our matched sample and within-bank analyses suggest that the difference in market responses is likely driven by different disclosure venues, not by unobservable bank characteristics. However, because the organizational structure solely determines the disclosure venue, we cannot rule out the possibility that stock market investors are generally less interested in any informational events by stand-alone banks.

³¹ In untabulated univariate analysis, we divide the within-bank sample to those banks that switched from a standalone bank to a bank holding company, and vice versa. We find that in both samples, short-run market reaction in terms of raw return and cumulative abnormal volume (CAV) is positive and significant only for bank holding companies.

To address this concern, we compare the market response to earnings announcements, informational events that are not first disclosed via disclosure systems. Whereas insider trading is first disclosed via Form 4 filing by regulation, earnings are not first disclosed on FDICconnect or SEC EDGAR in most cases. For stand-alone banks, only Forms 3, 4, and 5 are required to be filed on FDICconnect; thus, filing earnings announcements on FDICconnect is voluntary. For bank holding companies, while many submit 8-K filings for earnings announcements, earnings news is initially disseminated via press releases (Bochkay et al. 2021). Therefore, if the market reaction differences to Form 4 filings are mainly due to the disclosure venues rather than organizational structures, we expect to see no difference in market responses to the earnings announcements of stand-alone banks and bank holding companies.

We test the timeliness of market response to earnings announcements based on earnings surprise groups following DellaVigna and Pollet (2009) and Hirshleifer, Lim, and Teoh (2009).³² We measure earnings surprise as actual earnings minus the mean analysts' forecast earnings per share (EPS) divided by price at the end of the fiscal quarter. To reduce noise in unexpected earnings, we divide the sample into nine groups based on earnings surprise: four equal-sized groups with bad news, one group with no surprise, and four equal-sized groups with good news. Starting with all quarterly earnings announcement dates within the calendar year, we require at least one analyst forecast in IBES to calculate the earnings surprise. Excluding banks with no analyst coverage, for this test, we have 297 earnings announcements by stand-alone banks and 8,743 earnings announcements by single-bank holding companies for the main sample.

³² The empirical design is different from the previous tests on Form 4 filings for two reasons. First, unlike Form 4 filings, earnings are usually announced outside of market hours; thus we cannot observe intra-day market response. Second, we need to condition the market reaction on the magnitude of earnings surprise.

In Figure 3, we plot the average two-day abnormal return around the earnings announcement (CAR[0,+1]) for stand-alone banks and single-bank holding companies by earnings surprise group with a 90% confidence interval. If the market is not interested in stand-alone banks' earnings announcements, we expect to see a smaller negative (positive) reaction for stand-alone banks in the bad (good) news groups, relative to single-bank holding companies. However, we find that the mean abnormal returns (CAR) of all groups are statistically indifferent.

To test the same hypothesis using a regression framework, we estimate the following model:

$$CAR_{i,q} = \beta_1 SAB_{i,q} \times UE \ Group_{i,q} + \beta_2 SAB_{i,q} + \beta_3 UE \ Group_{i,q} + \beta_4 X_{i,q} + \delta_q + \gamma_i + \epsilon_{i,t}.$$
 (3)

We measure abnormal returns (CAR) in three different windows from the earnings announcement date to 0, 2, and 4 trading days. The explanatory variable of interest is $SAB_{i,i} \times UE \ Group_{i,i}$. $SAB_{i,i}$ is an indicator variable that equals one for earnings announcements by stand-alone banks. UE $Group_{i,i}$ ranges from -4 to 4 from most negative earnings surprise to most positive earnings surprise. The bank-level characteristics, $X_{i,i}$, include Log(MVE), Tier1capital, Deposits, Loans, and AmihudIlliquidity. The year-quarter-fixed effects, δ_q , control for economic conditions affecting all banks in a given year-quarter. The bank fixed effects, γ_i , absorb time-invariant bank characteristics. If the market reacts more slowly to stand-alone banks' unexpected earnings, we expect a negative coefficient on the interaction term, $SAB \times UE$ Group.

In Table 9, in columns (1) - (3), we report the estimation results of equation (2). In columns (4) - (6), we also include the bank fixed effects. The coefficients of *SAB*×*UE Group* are statistically insignificant in all columns. The results suggest that the stock market responds to earnings announcements by stand-alone banks just as quickly as they respond to those by single-bank holding companies. One concern may be that the insignificant coefficients of *SAB*×*UE Group* can be due to noise or lack of power because the number of earnings announcements for

stand-alone banks is small. While this concern cannot be entirely eliminated, we argue that noise or lack of power is unlikely to drive the insignificant results, for two reasons. First, the coefficients of $SAB \times UE$ Group are positive in all columns, although they are statistically insignificant. Second, Figure 3 shows that the market reaction increases almost linearly for better earnings surprises. Moreover, the magnitude of the average cumulative abnormal returns is very similar for most groups and even larger for stand-alone banks in the worst group. Overall, the test supports our hypothesis that the untimely market reaction to Form 4 filings by stand-alone banks is more likely due to the disclosure venue, FDICconnect, rather than due to the general lack of investor interest in stand-alone banks.

4.5. Alternative Explanation 2: Dow Jones Newswires

We examine whether the lack of real-time media coverage is a potential mechanism that explains the less timely market reaction to filings on FDICconnect. Prior studies suggest that media coverage leads to timelier market responses (Li et al., 2011; Rogers et al., 2016). The ideal test would be to compare filings by stand-alone banks that are covered by Dow Jones Newswires to those that are not. However, as described in Appendix B, Dow Jones Newswires does not cover any Form 4 filings by stand-alone banks. Instead, we use an indirect approach by comparing filings on FDICconnect by stand-alone banks to filings on SEC EDGAR by single-bank holding companies that are not covered by Dow Jones Newswires. To construct a control sample, we identify single-bank holding companies without Dow Jones Newswires coverage. We include bank-years that have at least one earnings news story but no insider-trading news coverage. We find 57 bank-years that have open-market purchases and no Dow Jones Newswires coverage. Most of these bank-years are in 2003, before Dow Jones began covering insider trading in January 2004 (Rogers et al., 2016).

In Table 10, we estimate equation (2) with FDICconnect filings and SEC EDGAR filings without Dow Jones Newswires coverage. In columns (1) - (3), the coefficients of *SAB* are all significantly negative for returns. In columns (4) - (6), the coefficients of *SAB* are all significantly negative for cumulative abnormal volume. Overall, we find that the short-run market reactions to filings on FDICconnect are still significantly smaller than the market reactions to filings on SEC EDGAR. This result suggests that real-time media coverage alone does not sufficiently explain the short-run market reaction difference.

4.6. Alternative Explanation 3: Sophisticated Market Participants

We examine the concern that stand-alone banks may have less institutional ownership and fewer analysts following than single-bank holding companies. Anecdotal evidence suggests that even sophisticated market participants such as analysts are not aware of FDICconnect. Perhaps due to higher information-processing costs, filings on FDICconnect by stand-alone banks may draw less attention from analysts and institutional investors. These factors may contribute to the different market reactions to filings by stand-alone banks and bank holding companies.

In Panel A of Table 11, we find that stand-alone banks have significantly less institutional ownership and fewer analysts following than single-bank holding companies. In Panel B of Table 10, we include additional control variables for institutional ownership (*InstOwnership*) and the number of analysts (Log(Analysts)). Interestingly, the coefficients of *InstOwnership* and Log(Analysts) are statistically insignificant except for *InstOwnership* in column (1). In columns (1)–(3), the coefficients of *SAB* become smaller for raw returns than in Table 5, but their statistical significance remains strong. In columns (4)–(6), the coefficients of *SAB* for cumulative abnormal volume are largely unchanged from Table 5. These results suggest that neither institutional

ownership nor analyst coverage entirely explains the difference in the short-run market reactions to insider trading filings.

4.7. Retail and Informed Trading around the Filing Date (Test of H3)

Finally, we examine whether retail investors are more informationally disadvantaged than large informed investors regarding Form 4 filings on FDICconnect. If retail investors are more informationally disadvantaged than large informed investors, we hypothesize that retail investors trade less on insider trading filings on FDICconnect than large informed investors do. We estimate the retail buy volume following Boehmer et al. (2021). Using the Lee and Ready (1991) algorithm, we define informed purchases as the total volume of non-retail trades of \$20,000 or greater that are buyer initiated.^{33,34} To test our hypothesis, we estimate the following difference-in-differences model using [-5, +5] trading days around the Form 4 filing date:

Net Retail or Net Large_{i,j,t} = $\beta_1 SAB_{i,t} \times PostFiling_{i,j,t} + \beta_2 PostFiling_{i,j,t} + \gamma_j + \epsilon_{i,j,t}$. (4) The dependent variables are Net Retail_{i,j,t}, retail buy minus sell volume divided by total retail volume; and Net Large_{i,j,t}, the volume of non-retail trades of \$20,000 or greater that are buyer initiated minus those that are seller initiated divided by total large volume. The explanatory variable of interest is $SAB_{i,t} \times PostFiling_{i,j,t}$. $SAB_{i,t}$ is an indicator variable that equals one for standalone banks. PostFiling_{i,j,t} is an indicator variable that equals one for [0, +5] trading days around

 $^{^{33}}$ We follow Boehmer et al. (2021) to define whether trades on TAQ are retail driven and whether they were buyer or seller initiated. We start by separating potential retail trades, those placed off-exchange and reported to a FINRA Trade Reporting Facility (exchange code "D"). Then we define buyer vs. seller-initiated retail trades based on the transaction price. Retail trades are assumed to be uninformed and thus are given small price improvements of around a fraction of a cent. Based on these institutional details, if the price is higher than a round penny (i.e., fraction of a cent is in the interval of (0, 0.4)) the trade is defined as a retail sale; if the price is lower than a round penny (i.e., fraction of a cent is in the interval of (0.6, 1)) the trade is defined as a retail buy. Trades with other prices are undefined.

³⁴ Many studies use the \$50,000 cutoff to define large trades. However, for our sample firms, on average 0.55 percent of trades are over \$50,000 and there are several trading days with little or no trades over \$50,000 which distorts our measure. Hence, we use the \$20,000 cutoff to define large trades which accounts for on average 1.87 percent of trades.

the Form 4 filing date. We include filing fixed effects to control for any filing-specific unobservables, and they subsume bank- and transaction-level characteristics.

In Table 12, we report the results of estimating equation (4). In columns (1) and (3), the dependent variable is *Net Retail*. The coefficients of SAB×PostFiling are statistically insignificant (-0.003, p>0.10; -0.003, p>0.10), suggesting that retail investors' purchases in response to insiderpurchase filings on FDIC connect do not differ from their purchases in response to filings on SEC EDGAR. On the other hand, in columns (2) and (4), the dependent variable is *Net Large*, and we find that the coefficients of $SAB \times PostFiling$ are statistically positive (0.021, p < 0.05; 0.021, p < 0.05). This result, combined with the muted market reaction immediately following FDICconnect filings, suggests that large informed investors do trade on this information, but they do so in a manner that does not create an instant price reaction after the filing. Given that the longrun returns to Form 4 filings by stand-alone banks exceed or at least catch up to those to Form 4 filings by single-bank holding companies, the results suggest that retail investors trade less on such information, consistent with our hypothesis that retail investors are informationally disadvantaged. One caveat is that we cannot observe the traders' identity, and our proxies of retail and large informed buy volume are based on several assumptions. Thus, our findings should be interpreted with this in mind.

To gauge the economic significance of missed trading opportunities by retail traders, we calculate the dollar return available from trading on filings by stand-alone banks based on the results in Table 4. We assume that an investor tracking FDICconnect filings purchases stocks on the filing date and holds them for 42 (63) trading days, thereby earning the abnormal return of 139 (220) basis points over [0,+42] ([0,+63]). Given that the average trading volume on the filing date for filings on FDICconnect is \$1.6 million (untabulated), the aggregate estimated profit from this

trading is \$16.59 (\$26.26) million over [0,+42] ([0,+63]). ³⁵ Although it relies on many assumptions, the calculation provides a rough estimate of the lost trading opportunities driven by the increased information-processing costs due to FDICconnect for investors over the 16-year sample period.

5. Conclusion

In this study, we examine the consequences of fragmented securities regulation on disclosure compliance and information-processing costs in the stock market. We find that bank regulators put less emphasis than the SEC on timely disclosures. Consistently, stand-alone banks are more likely than bank holding companies to violate filing deadlines for Forms 8-K, 4, and 10-K/Q. We further examine whether the disclosure system maintained by bank regulators, FDICconnect, generates higher information-processing costs. We find that the market reaction to insider filings by stand-alone banks is less timely, and retail investors trade less on insider filings on FDICconnect than large informed investors do. These findings suggest that the separate disclosure system reduces stock price efficiency due to higher information-processing costs.

Our study provides important empirical evidence on the information channel, a previously unexplored channel through which regulatory fragmentation can affect the financial system. Our evidence supports the call to streamline the administration of disclosure systems and securities regulation (SEC, 1999; Task Group on Regulation of Financial Services, 1984). However, as more banks consider removing their holding company structure and filing with bank regulators instead of the SEC, investors and information intermediaries may increase their coverage of stand-alone

 $^{^{35}}$ \$16.59 (\$26.26) million = 1.39% (2.20%) × \$1.6 million × 746 observations.

banks. An open question for future research is whether these effects will persist if stand-alone banks receive more attention as more banks shed their holding company structure.

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Appendix A. FDICconnect Website



Securities Exchange Act Filings

Welcome to the Securities Exchange Act Filings System. This system, which is administered by the Federal Deposit Insurance Corporation (FDIC), contains two groups of securities disclosure filings:

- 1. Beneficial ownership report filings on Forms 3, 4, and 5 by directors, officers, and principal shareholders of depository institutions with a class of securities registered with the appropriate federal banking agency under the Securities Exchange Act of 1934 (Exchange Act); and
- 2. Other securities disclosure documents filed by or pertaining to FDIC-supervised depository institutions with a class of securities registered under the Exchange Act.

Search for Beneficial Ownership Filings

NOTICE TO USERS OF THE BENEFICIAL OWNERSHIP FILINGS SYSTEM

The Beneficial Ownership Filings System is presented by the FDIC, the Federal Reserve Board (FRB), and the Office of the Comptroller of the Currency (OCC). The information available to the public in this system was submitted by directors, officers, and principal shareholders of FDIC-insured depository institutions with a class of securities registered with the appropriate federal banking agency under the Exchange Act, as mandated by federal law. The Exchange Act, as amended by the Sarbanes-Oxley Act of 2002, requires the FDIC, the FRB, the the OCC to make these beneficial ownership reports available to the public on the Internet.

You are advised that beneficial ownership information is presented by the appropriate federal banking agency for the filer's institution in the same form as it was submitted. For public availability purposes, the FDIC, the FRB, and the OCC have not reviewed the information presented in these filings, and thus make no warranties or representations regarding its accuracy or sufficiency.

The Beneficial Ownership Filings system contains only beneficial ownership reports that have been electronically submitted to the appropriate federal banking agency (FDIC, FRB, or OCC). Reports submitted on paper pursuant to a federal banking agency's applicable hardship exemption provisions or submitted under previously applicable paper filing requirements may be obtained by contacting the appropriate agency office as follows: FDIC - Accounting and Securities Disclosure Section, 550 17th Street, NW, Washington, DC 20429; FRB - Division of Banking Supervision and Regulation, 20th Street and Constitution Avenue, NW, Washington, DC 20551; OCC - Disclosure Officer, Communications Division, 400 7th Street SW, Washington, DC 20219.

Search for Other Securities Exchange Act Filings by FDIC-Supervised Depository Institutions

NOTICE TO USERS OF THE OTHER SECURITIES EXCHANGE ACT FILINGS SYSTEM

The Other Securities Exchange Act Filings System is presented by the FDIC. The information available to the public in this system includes periodic reports (e.g., annual reports on Form 10-K, quarterly reports on Form 10-Q, and current reports on Form 8-K), proxy soliciting material, and other securities disclosure documents submitted electronically by FDIC-supervised depository institutions and associated parties reporting to the FDIC under the Exchange Act. The Exchange Act requires the FDIC to make these securities disclosure filings available to the public.

List of FDIC-supervised depository institutions currently reporting to the FDIC under the Exchange Act and Part 335.

You are advised that the other Securities Exchange Act information is presented by the FDIC in the same form as it was submitted. For public availability purposes, the FDIC has not reviewed the information presented in these filings prior to their submission, and thus makes no warranties or representations regarding its accuracy or sufficiency.

The Other Securities Exchange Act Filings system contains only information that has been electronically submitted to the FDIC by FDIC-supervised depository institutions and associated parties under the Exchange Act. Other Securities Exchange Act filings submitted on paper to the FDIC may be obtained by contacting the FDIC in writing at FDIC, Accounting and Securities Disclosure Section, 550 17th Street, NW, Washington, DC 20429, or by email at PublicBankReports@FDIC.gov.

NOTICE TO USERS OF THE SECURITIES EXCHANGE ACT FILINGS SYSTEM

Appendix B. Coverage by Information Intermediaries

	SAB	ВНС
Real-time data sources		
Dow Jones Newswires	None	Yes
Bloomberg Terminal "Company	None	Yes
Filings"		
Other data sources		
WSJ Quotes	None	Yes
Yahoo! Finance	Yes, but not	Yes
	comprehensive	
Thomson Reuters Insider Filing Feed	Yes, from 2015	Yes

This table summarizes the coverage of insider transactions by various information intermediaries.

Appendix C. Variable Definitions

Variable	Definition
SAB	An indicator variable equal to one for stand-alone banks or filings by stand- alone banks and zero otherwise.
BHC	An indicator variable equal to one for bank holding companies or filings by bank holding companies and zero otherwise.
Cumulative Abnormal Return (CAR)	Cumulative raw return minus the value-weighted size-decile portfolio, calculated from CRSP.
Daily Abnormal Volume	Daily volume (as a proportion of shares outstanding) divided by average daily volume (as a proportion of shares outstanding) for the same day of the week in the past 52 weeks, calculated from CRSP.
Raw Return	Percent change in price from filing time to event time, calculated from TAQ trades.
Cumulative Abnormal Volume (CAV)	Cumulative dollar volume from filing time to event time minus the average cumulative dollar volume for the same window for the past 52 weeks, deflated by the average cumulative dollar volume for the entire window, calculated from TAQ.
Net Retail	Daily retail buy minus sell volume divided by total retail volume, where retail transactions are defined following Boehmer et al. (2021).
Net Large	Daily large buy minus sell volume divided by total large volume, where large transactions are defined as those above \$20,000 that are not retail transactions.
Late 8-K	An indicator variable equal to one if the difference between the 8-K filing date and event date is greater than four business days and zero otherwise.
Late Form 4	An indicator variable equal to one if the difference between the Form 4 filing date and transaction date is greater than two business days and zero otherwise.
Late 10-K/Q	An indicator variable equal to one if the 10-Q or 10-K is filed later than the deadline and zero otherwise.
Log(MVE)	Natural logarithm of market capitalization in millions, from CRSP.
Tier1capital	Tier 1 capital divided by risk-weighted assets, from call reports.
Deposits	Deposits as a proportion of total assets, from call reports.
Loans	Loans as a proportion of total assets, from call reports.
Amihud Illiquidity	$\sqrt{ Return /Price \times Volume} \times 1000$ measured using daily data during the fiscal year.
Log(TradeSize)	Natural logarithm of dollar value of trade.

CEO	An indicator variable equal to one if the insider is the CEO, and zero otherwise.
CFO	An indicator variable equal to one if the insider is the CFO, and zero otherwise.
UE Group	Groups -4 to -1 represent four quartiles of negative earnings surprises. Groups 1 to 4 represent four quartiles of positive earnings surprises. Group 0 includes banks with zero earnings surprise. Earnings surprises are calculated from I/B/E/S.
InstOwnership	Institutional ownership as a proportion of shares outstanding, from Thomson Reuters' 13-F database.
Log(Analysts)	Natural logarithm of one plus the number of analysts following, from IBES.

Figure 1. Regulatory Jurisdiction for Stand-Alone Banks and Bank Holding Companies

This figure describes differences in regulatory jurisdiction for stand-alone banks and bank holding companies. A commercial bank's federal bank regulator is the OCC, the FRB, or the FDIC, depending on whether the bank is a national bank, a member state bank, or a non-member state bank, respectively. Stand-alone banks are exempt from the SEC registration and have their federal bank regulator as the securities regulator. Bank holding companies are considered companies rather than banks; thus the SEC is the securities regulator. In addition, bank holding companies are regulated by the FRB.



Figure 2. Short-Run Market Reaction to Form 4 Purchase Filings

These figures present mean returns (Panel A) and mean cumulative abnormal volume (Panel B) for [-5 minutes,+15 minutes] of Form 4 filings of open-market purchases for the main sample. The solid red line represents filings by stand-alone banks on FDICconnect, and the dotted black line represents filings by single-bank holding companies on SEC EDGAR. The sample includes 285 filings by stand-alone banks and 3,973 filings by bank holding companies with at least one trade on TAQ within [-5 minutes,+15 minutes] of the filing.

Panel A. Mean Returns



Panel B. Mean Cumulative Abnormal Volume



Electronic copy available at: https://ssrn.com/abstract=3416204

Figure 3. Placebo Test: Average Earnings Announcement Returns

This figure presents mean cumulative abnormal returns (CAR) for [0,+1] days around earnings announcement dates for the main sample. The solid red line represents stand-alone banks, and the dotted black line represents single-bank holding companies. The error bar indicates a 90 percent confidence interval. Groups -4 to -1 represent four quartiles of negative earnings surprises, and groups 1 to 4 represent four quartiles of positive earnings surprises. Group 0 includes banks with zero earnings surprise. The sample includes 297 earnings announcements by stand-alone banks and 8,743 earnings announcements by bank holding companies.



Table 1. Descriptive Statistics of Stand-Alone Banks

This table reports descriptive statistics for 48 publicly listed stand-alone banks. The descriptive statistics in Panels A and B are measured at the bank level for the most recently available date in the sample. Panel A reports the number and proportion of stand-alone banks' listed exchange and federal bank regulators. Panel B reports different measures of bank size: total assets (in \$ millions), market capitalization (in \$ millions), the number of deposit-taking branches, and the number of states with deposit-taking branches. Panel C provides the asset-size distribution of commercial banks in the U.S. as of 2018 as a benchmark.

	Number	Percent
Listed Stock Exchange		
NYSE	3	6.25%
AMEX	2	4.17%
NASDAQ	43	89.58%
Federal Bank Regulator		
OCC	5	10.42%
FRB	5	10.42%
FDIC	38	79.17%

Panel A.	Listing	Stock	Exchange	and	Federal	Bank	Regulate	or

Panel B. Bank Size

	Mean	P1	P25	P50	P75	P99
Total Assets (\$ millions)	6,752.03	106.80	438.03	1,110.33	4,327.93	99,205.20
MVE (\$ millions)	845.52	6.91	35.43	103.82	443.62	14,319.47
Number of branches	35.27	1.00	5.00	10.00	27.00	394.00
Number of states	2.08	1.00	1.00	1.00	2.00	8.00

Panel C. Asset-Size	Distribution	of Comm	nercial Bar	nks in 20	18 (from 1	fdic Q	uarterly	Banking
Profile)								

	Asset-Size Distribution (in \$ millions)						
	Total 0 to 100 to 1,000 to 10,000 to More th						
		100	1,000	10,000	250,000	250,000	
Number of	4,715	1,333	2,941	518	114	9	
commercial banks							

Table 2. Sample Characteristics

This table presents descriptive statistics of the sample a	it the transaction level for stand-alone banks
and single-bank holding companies. All variables are of	defined in Appendix C.

	Mean	Std Dev	p25	p50	p75
SAB (n = 746)					
Log(MVE)	4.46	1.36	3.39	4.27	5.31
Tier1capital	0.13	0.03	0.11	0.12	0.13
Deposits	0.77	0.08	0.71	0.79	0.83
Loans	0.77	0.08	0.72	0.78	0.81
Amihud Illiquidity	1.12	1.13	0.21	0.82	1.66
Log(TradeSize)	9.16	1.63	8.13	9.13	10.15
CEO	0.15	0.35	0.00	0.00	0.00
CFO	0.03	0.17	0.00	0.00	0.00
BHC $(n = 7,009)$					
Log(MVE)	4.96	1.35	4.01	4.96	5.84
Tier1capital	0.12	0.03	0.10	0.12	0.13
Deposits	0.79	0.07	0.75	0.80	0.83
Loans	0.71	0.11	0.64	0.72	0.78
Amihud Illiquidity	0.80	1.11	0.14	0.32	1.03
Log(TradeSize)	9.25	1.63	8.22	9.29	10.30
CEO	0.09	0.29	0.00	0.00	0.00
CFO	0.06	0.23	0.00	0.00	0.00

Table 3. Disclosure Compliance: Late Filings

This table examines disclosure compliance by stand-alone banks and single-bank holding companies. Panel A compares the probability of late filings of 8-K, Form 4, and 10-K/Q. Panel B provides the regression analysis. The dependent variables in columns (1) - (3) are an indicator variable equal to one if 8-K, Form 4, and 10-K/Q filings are late, respectively. The explanatory variable of interest is *SAB*, an indicator variable that equals one for filings by stand-alone banks. The bank-level characteristics include Log(MVE), *Tier1capital*, *Deposits*, *Loans*, and *Amihud Illiquidity*. All variables are defined in Appendix C. Standard errors in parentheses are corrected for heteroscedasticity and clustered by bank. ***, **, and * denote significance at the one percent, five percent, and ten percent levels, respectively, in two-tailed tests.

Variables	SAB	BHC	t-stat (diff)
Late 8-K	0.09	0.04	-10.31***
Observations	1,683	38,581	
Late Form 4	0.22	0.15	-6.55***
Observations	1,395	13,112	
Late 10-K/Q	0.15	0.11	-2.72***
Observations	675	12,082	

Panel A: Univariate Analysis

	(1)	(2)	(3)
	Late 8-K	Late Form 4	Late 10-K/Q
SAB	0.053**	0.064*	0.043*
	(0.021)	(0.035)	(0.023)
Log(MVE)	-0.002	-0.010	-0.008*
	(0.002)	(0.008)	(0.005)
Tier1capital	0.083	-0.369	-0.389**
	(0.080)	(0.284)	(0.162)
Deposits	0.019	-0.012	-0.097
	(0.040)	(0.124)	(0.064)
Loans	0.021	-0.092	-0.037
	(0.021)	(0.095)	(0.041)
Amihud Illiquidity	0.002	-0.005	-0.005
	(0.004)	(0.010)	(0.009)
Observations	40,264	14,507	12,686
Year FE	YES	YES	YES
Adj R-squared	0.024	0.008	0.122

Panel B: Regression Analysis

Table 4. Daily Market Response to Form 4 Purchase Filings

This table presents univariate comparisons of daily market reaction to Form 4 purchase filings by stand-alone banks and single-bank holding companies. Panels A and B report daily mean and abnormal stock returns and trading volumes, respectively, around the filing dates. Abnormal returns are adjusted using a value-weighted size-decile portfolio. Daily abnormal volume is trading volume (as a proportion of shares outstanding) divided by average daily volume (as a proportion of shares outstanding) for the same day of the week in the past 52 weeks. t-statistics are reported for the differences in means. Panel A (B) also reports the significance of the mean abnormal returns (volume) against the null of zero abnormal return (volume). ***, **, and * denote significance at the one percent, five percent, and ten percent levels, respectively, in two-tailed tests.

Filing	SAB	BHC	t-stat (diff)
-1	-0.10	0.10**	1.53
0	0.17	0.41***	1.74*
+1	-0.09	0.18***	2.22**
+2	-0.06	0.08**	0.27
+3	0.03	0.06	0.80
+4	0.01	0.00	0.92
[0,+2]	0.00	0.62***	3.28***
[0,+4]	-0.03	0.64***	2.99***
[0,+21]	0.54	0.48***	-0.16
[0,+42]	1.39***	0.55***	-1.47
[0,+63]	2.20***	0.89***	-2.00**
Observations	746	7,009	

Panel A. Mean Abnormal Returns

Panel B. Mean Abnormal Volum	Panel B.	Mean Abnormal	Volume
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Filing	SAB	BHC	t-stat (diff)
-1	1.36***	1.51***	1.37
0	1.25***	1.56***	2.08**
+1	1.25	1.34***	0.75
+2	1.08	1.23***	1.30
+3	1.12	1.18***	0.69
+4	1.07	1.23***	1.34
[0,+2]	1.14*	1.32***	2.27**
[0,+4]	1.09	1.24***	2.60***
Observations	746	7,009	

Table 5. Intra-Day Market Response to Form 4 Purchase Filings

This table examines differences in intra-day market response to Form 4 purchase filings by standalone banks and to those by single-bank holding companies. The dependent variables in columns (1) - (3) are raw returns measured from filing time to 1, 5, and 15 minutes. The dependent variables in columns (4) - (6) are cumulative abnormal trading volumes measured from filing time to 1, 5, and 15 minutes. The explanatory variable of interest is *SAB*, an indicator variable that equals one for filings by stand-alone banks. The bank-level characteristics include Log(MVE), *Tier1capital*, *Deposits*, *Loans*, and *Amihud Illiquidity*. The transaction-level characteristics include Log(TradeSize), *CEO*, and *CFO*. All variables are defined in Appendix C. Standard errors in parentheses are corrected for heteroscedasticity and clustered by bank. ***, **, and * denote significance at the one percent, five percent, and ten percent levels, respectively, in two-tailed tests.

	(1)	(2)	(3)	(4)	(5)	(6)
		Raw Return		Cumulative	Abnormal Vol	lume (CAV)
	1 min	5 min	15 min	1 min	5 min	15 min
SAB	-0.137***	-0.135***	-0.203***	-0.619***	-0.961***	-1.396***
	(0.021)	(0.032)	(0.061)	(0.090)	(0.123)	(0.165)
Log(MVE)	0.027***	0.001	0.006	0.106**	0.159**	0.257***
	(0.009)	(0.014)	(0.024)	(0.054)	(0.069)	(0.090)
Tier1capital	0.131	-0.561	-0.999	1.558	0.273	-1.100
	(0.383)	(0.448)	(0.614)	(1.634)	(2.749)	(3.343)
Deposits	0.107	-0.007	0.118	0.457	0.785	1.074
	(0.122)	(0.178)	(0.235)	(0.566)	(0.982)	(1.384)
Loans	-0.103	-0.168	-0.133	-0.505	-0.859	-0.944
	(0.120)	(0.156)	(0.180)	(0.624)	(1.217)	(1.547)
Amihud Illiquidity	0.046***	0.049***	0.046***	0.063	0.368	0.649**
	(0.004)	(0.007)	(0.008)	(0.224)	(0.295)	(0.322)
Log(TradeSize)	0.049**	0.102**	0.118**	0.190***	0.256***	0.350***
	(0.022)	(0.046)	(0.053)	(0.018)	(0.041)	(0.058)
CEO	0.023	0.076	0.083	0.339**	0.550**	0.625*
	(0.022)	(0.052)	(0.073)	(0.161)	(0.270)	(0.320)
CFO	-0.015	0.024	-0.019	0.183**	0.449*	0.349
	(0.013)	(0.031)	(0.062)	(0.072)	(0.231)	(0.267)
Observations	4,044	4,044	4,044	3,477	3,477	3,477
Year FE	YES	YES	YES	YES	YES	YES
Adj R-squared	0.098	0.047	0.033	0.168	0.031	0.037

Table 6. Long-Run Market Response to Form 4 Purchase Filings

This table examines differences in long-term market response to Form 4 filings by stand-alone banks and those by single-bank holding companies. The dependent variables in columns (1) - (6) are cumulative abnormal returns (CAR) measured from the filing date to 1, 2, 4, 21, 42, and 63 trading days. The explanatory variable of interest is *SAB*, an indicator variable that equals one for filings by stand-alone banks. The bank-level characteristics include *Log(MVE)*, *Tier1capital*, *Deposits*, *Loans*, and *Amihud Illiquidity*. The transaction-level characteristics include *Log(TradeSize)*, *CEO*, and *CFO*. All variables are defined in Appendix C. Standard errors in parentheses are corrected for heteroscedasticity and clustered by bank. ***, **, and * denote significance at the one percent, five percent, and ten percent levels, respectively, in two-tailed tests.

	(1)	(2)	(3)	(4)	(5)	(6)
		Cum	ulative Abnor	mal Return (C	CAR)	
	[0]	[0,+2]	[0,+4]	[0,+21]	[0,+42]	[0,+63]
SAB	-0.004***	-0.007***	-0.008**	0.003	0.017	0.020**
	(0.001)	(0.002)	(0.003)	(0.009)	(0.010)	(0.009)
Log(MVE)	-0.001	-0.003**	-0.003**	0.001	0.005	0.008*
	(0.001)	(0.001)	(0.001)	(0.003)	(0.003)	(0.004)
Tier1capital	0.002	-0.006	-0.004	0.084*	0.154**	0.235**
	(0.017)	(0.028)	(0.031)	(0.049)	(0.070)	(0.108)
Deposits	-0.002	-0.012	-0.014	0.019	0.089*	0.088*
	(0.007)	(0.011)	(0.013)	(0.034)	(0.052)	(0.052)
Loans	0.006	0.002	0.003	0.005	0.013	0.018
	(0.004)	(0.006)	(0.007)	(0.021)	(0.034)	(0.034)
Amihud Illiquidity	0.001**	0.001***	0.002***	0.002	0.001	0.001
	(0.000)	(0.000)	(0.001)	(0.001)	(0.001)	(0.002)
Log(TradeSize)	0.001	-0.000	-0.001	0.005	0.002	0.009
	(0.001)	(0.002)	(0.002)	(0.005)	(0.009)	(0.008)
CEO	-0.001	-0.000	0.000	0.003	0.011	0.012
	(0.001)	(0.003)	(0.003)	(0.008)	(0.015)	(0.014)
CFO	0.000	-0.002	-0.001	-0.003	-0.009	-0.012*
	(0.001)	(0.002)	(0.002)	(0.004)	(0.006)	(0.007)
Observations	7,754	7,754	7,753	7,749	7,744	7,734
Year FE	YES	YES	YES	YES	YES	YES
Adj R-squared	0.008	0.006	0.008	0.018	0.034	0.060

Table 7. Matched Sample Analyses

This table applies four different matching procedures to improve covariate balance: coarsened exact matching (CEM), entropy matching, propensity score matching (PSM), and exact matching. With CEM, we coarsen the data by dividing observations into five evenly spaced bins of all continuous variables and two bins of all binary variables so that the treatment and control groups have similar weighted histograms. With entropy matching, we calculate weights for each observation such that the weighted means for all control variables are equal across stand-alone banks and single-bank holding companies. With PSM, we estimate the probability that a bank is a stand-alone bank using a probit model with all control variables, and we match without replacement at the transaction level using a caliper of 0.001. With exact matching, we match at the transaction level to minimize the sum of absolute distances between stand-alone banks and single-bank holding companies the results in Table 5, and Panel B re-estimates the results in Table 6. All variables are defined in Appendix C. Standard errors in parentheses are corrected for heteroscedasticity and clustered by bank. ***, **, and * denote significance at the one percent, five percent, and ten percent levels, respectively, in two-tailed tests.

	(1)	(2)	(2)	(4)	(5)	(6)
	(1)	(2) Dow Datase	(3)	(4) Cumulation	(J)	(0)
	1 .	Kaw Keturn	15 .		Adnormal Vo	15
		5 min	15 min	I min	5 min	15 min
Coarsened Exact Mate	ching (CEM)					
SAB	-0.139***	-0.158***	-0.187**	-0.773***	-1.119***	-1.546***
	(0.028)	(0.058)	(0.074)	(0.144)	(0.176)	(0.231)
Observations	2,603	2,603	2,603	2,282	2,282	2,282
Controls	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Adjusted R-squared	0.163	0.078	0.046	0.245	0.023	0.039
Entropy Matching						
SAB	-0.140***	-0.142***	-0.199***	-0.656***	-0.987***	-1.382***
	(0.018)	(0.021)	(0.061)	(0.069)	(0.096)	(0.139)
Observations	4,044	4,044	4,044	3,477	3,477	3,477
Controls	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Adjusted R-squared	0.127	0.044	0.054	0.241	0.051	0.067
Propensity Score Mate	ching (PSM)					
SAB	-0.130***	-0.115**	-0.173**	-0.654***	-0.947***	-1.541***
	(0.022)	(0.047)	(0.086)	(0.091)	(0.178)	(0.530)
	. ,	. ,		. ,	. ,	. *
Observations	434	434	434	345	345	345
Controls	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Adjusted R-squared	0.147	0.009	0.007	0.253	0.148	0.045
Exact Matching						
SAB	-0.179***	-0.195***	-0.188***	-0.600***	-1.032***	-1.321***
	(0.030)	(0.053)	(0.054)	(0.108)	(0.132)	(0.173)
	· · · · /	· · · · /		· /	× - /	· · · /
Observations	362	362	362	301	301	301
Controls	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Adjusted R-squared	0 143	0.053	0.042	0.150	0 148	0.126

Panel A: Robustness Tests for the Intra-day Market Response (Table 5)

		-				
	(1)	(2)	(3)	(4)	(5)	(6)
		Cum	ulative Abnor	mal Return (CAR)	
	[0]	[0,+2]	[0,+4]	[0,+21]	[0,+42]	[0,+63]
Coarsened Exact Mate	ching (CEM)					
SAB	-0.004***	-0.007***	-0.006*	0.006	0.015	0.018
	(0.002)	(0.003)	(0.003)	(0.010)	(0.013)	(0.012)
Observations	5,410	5,410	5,410	5,408	5,406	5,402
Controls	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Adjusted R-squared	0.062	0.033	0.017	0.032	0.042	0.073
Entropy Matching						
SAB	-0.004***	-0.007***	-0.008**	0.001	0.018	0.026**
	(0.001)	(0.003)	(0.003)	(0.010)	(0.013)	(0.010)
Observations	7,754	7,754	7,753	7,749	7,744	7,734
Controls	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Adjusted R-squared	0.007	0.007	0.010	0.031	0.061	0.104
Propensity Score Mate	ching (PSM)					
SAB	-0.005**	-0.008***	-0.008**	0.002	0.015	0.015
	(0.002)	(0.003)	(0.004)	(0.010)	(0.013)	(0.012)
Observations	1,346	1,346	1,346	1,345	1,344	1,341
Controls	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Adjusted R-squared	0.003	-0.001	0.000	0.032	0.060	0.104
Exact Matching						
SAB	-0.006**	-0.008**	-0.007	-0.000	0.017	0.013
	(0.002)	(0.004)	(0.005)	(0.013)	(0.018)	(0.014)
Observations	822	822	822	822	822	820
Controls	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
Adjusted R-squared	0.014	-0.002	0.006	0.057	0.064	0.119

Panel B: Robustness Tests for the Long-run Market Response (Table 6)

Table 8. Within-Bank Analysis

This table examines differences in intra-day market response to Form 4 purchase filings by banks transitioned to or from a stand-alone bank, including bank fixed effects but excluding year fixed effects because FDICconnect filings show up only once or are nonexistent in multiple years. The dependent variables in columns (1) - (3) are raw returns measured from filing time to 1, 5, and 15 minutes. The dependent variables in columns (4) - (6) are cumulative abnormal trading volumes measured from filing time to 1, 5, and 15 minutes. The dependent variable that equals one for filings by stand-alone banks. The bank-level characteristics include *Log(MVE)*, *Tier1capital*, *Deposits*, *Loans*, and *Amihud Illiquidity*. The transaction-level characteristics include *Log(TradeSize)*, *CEO*, and *CFO*. All variables are defined in Appendix C. Standard errors in parentheses are corrected for heteroscedasticity and clustered by bank. ***, **, and * denote significance at the one percent, five percent, and ten percent levels, respectively, in two-tailed tests.

	(1)	(2)	(3)	(4)	(5)	(6)
		Raw Return		Cumula	tive Abnormal	Volume
	1 min	5 min	15 min	1 min	5 min	15 min
SAB	-0.237**	-0.380**	-0.260	-1.118**	-1.976***	-3.417***
	(0.100)	(0.158)	(0.165)	(0.361)	(0.558)	(0.786)
Log(MVE)	0.041	0.045	0.029	0.394***	0.581**	1.484***
	(0.027)	(0.061)	(0.066)	(0.096)	(0.182)	(0.309)
Tier1capital	-0.262	0.249	1.371	1.938	1.469	-3.696
	(0.853)	(1.371)	(1.579)	(3.320)	(5.720)	(8.390)
Deposits	0.126	0.296	2.242*	5.803	9.707*	-0.651
	(0.776)	(1.145)	(1.254)	(3.317)	(4.570)	(9.476)
Loans	-1.382***	-0.789**	0.418	-7.282***	-13.965***	-21.838***
	(0.285)	(0.337)	(0.306)	(0.684)	(0.989)	(2.170)
Amihud Illiquidity	0.071	0.610	0.493	-0.837	-1.039	4.632***
	(0.102)	(0.482)	(0.523)	(0.519)	(0.667)	(1.304)
Log(TradeSize)	0.050***	0.059**	0.047	0.235***	0.473***	0.762***
	(0.015)	(0.022)	(0.031)	(0.062)	(0.092)	(0.150)
CEO	0.153	0.255*	0.387	2.774***	3.998**	3.918**
	(0.095)	(0.140)	(0.270)	(0.768)	(1.264)	(1.283)
CFO	0.125	0.153	0.138	-0.202	-0.569	-0.706
	(0.121)	(0.133)	(0.143)	(0.246)	(0.411)	(1.123)
Observations	182	182	182	145	145	145
Bank FE	YES	YES	YES	YES	YES	YES
Year FE	NO	NO	NO	NO	NO	NO
Adj R-squared	0.209	0.126	0.095	0.293	0.346	0.370

Table 9. Alternative Explanation 1: Investor Indifference to Stand-alone Banks

This table examines differences in market reaction to earnings announcements of stand-alone banks and single-bank holding companies. The dependent variables in columns (1) - (3) and (4) - (6) are cumulative abnormal returns (CAR) measured from the earnings announcement date to 0, 2, and 4 trading days, respectively. The explanatory variable of interest is *SAB*×*UE Group*. *SAB* is an indicator variable that equals one for earnings announcements by stand-alone banks. *UE Group* ranges from -4 to 4, from most negative earnings surprise to most positive earnings surprise. The bank-level characteristics include Log(MVE), *Tier1capital*, *Deposits*, *Loans*, and *Amihud Illiquidity*. All variables are defined in Appendix C. Standard errors in parentheses are corrected for heteroscedasticity and clustered by bank. ***, **, and * denote significance at the one percent, five percent, and ten percent levels, respectively, in two-tailed tests.

	(1)	(2)	(3)	(4)	(5)	(6)
		Cum	ulative Abnor	mal Return (CAR)	
	[0]	[0,+2]	[0,+4]	[0]	[0,+2]	[0,+4]
$SAB \times UE$ Group	0.003	0.003	0.004	0.004	0.003	0.004
	(0.002)	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)
SAB	-0.004	-0.006	-0.011*			
	(0.005)	(0.006)	(0.006)			
UE Group	0.006***	0.008***	0.008***	0.006***	0.007***	0.008***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Log(MVE)	0.002**	0.002**	0.003**	0.009***	0.012***	0.014**
	(0.001)	(0.001)	(0.001)	(0.003)	(0.004)	(0.006)
Tier1capital	0.078***	0.094***	0.112***	0.063*	0.055	0.072
	(0.026)	(0.031)	(0.040)	(0.037)	(0.054)	(0.071)
Deposits	0.003	0.003	0.005	0.006	0.028	0.033
	(0.009)	(0.010)	(0.012)	(0.023)	(0.030)	(0.032)
Loans	0.011*	0.018***	0.024***	0.005	0.000	-0.001
	(0.006)	(0.007)	(0.007)	(0.013)	(0.017)	(0.019)
Amihud	0.006**	0.005*	0.007**	0.009**	0.009*	0.008
Illiquidity	(0.002)	(0.003)	(0.003)	(0.004)	(0.005)	(0.005)
Observations	9.040	9.040	9.040	9.040	9.040	9.040
Bank FF	9,040 NO	9,040 NO	9,040 NO	9,040 VES	9,040 VES	9,040 VES
Ouarter FF	NU	NU	NU	I ES VES	I ES VES	I ES VES
Adi P squared	1 ES 0 105	1 ES 0 124	1 ES 0 114	1 ES 0 122	1 ES 0 149	1 ES 0 127
Auj K-syualeu	0.105	0.124	0.114	0.1.32	0.148	0.1.37

Table 10. Alternative Explanation 2: Dow Jones Newswires

This table examines differences in intra-day market response to Form 4 purchase filings by standalone banks and to those by single-bank holding companies without Dow Jones Newswires coverage. The dependent variable in columns (1) - (3) is raw returns measured from filing time to 1, 5, and 15 minutes. The dependent variable in columns (4) - (6) is cumulative abnormal trading volumes measured from filing time to 1, 5, and 15 minutes. The explanatory variable of interest is *SAB*, an indicator variable that equals one for filings by stand-alone banks. The bank-level characteristics include Log(MVE), *Tier1capital*, *Deposits*, *Loans*, and *Amihud Illiquidity*. The transaction-level characteristics include Log(TradeSize), *CEO*, and *CFO*. All variables are defined in Appendix C. Standard errors in parentheses are corrected for heteroscedasticity and clustered by bank. ***, **, and * denote significance at the one percent, five percent, and ten percent levels, respectively, in two-tailed tests.

	(1)	(2)	(3)	(4)	(5)	(6)
		Raw Return		Cumulative	Abnormal Vo	lume (CAV)
	1 min	5 min	15 min	1 min	5 min	15 min
SAB	-0.100***	-0.185***	-0.227**	-0.262*	-0.528***	-0.945***
	(0.037)	(0.049)	(0.111)	(0.134)	(0.191)	(0.215)
Log(MVE)	-0.012	-0.039**	-0.003	0.021	0.053	0.090
	(0.016)	(0.018)	(0.033)	(0.038)	(0.051)	(0.077)
Tier1capital	-0.421	-0.805*	-1.401*	-0.064	-1.277	-4.324
	(0.387)	(0.432)	(0.706)	(0.849)	(1.193)	(2.850)
Deposits	-0.014	-0.140	-0.667	0.574	-0.055	0.554
	(0.136)	(0.233)	(0.518)	(0.696)	(0.898)	(1.290)
Loans	-0.118	-0.005	-0.164	-0.481	-1.041**	-1.323
	(0.095)	(0.134)	(0.326)	(0.335)	(0.488)	(0.793)
Amihud Illiquidity	-0.004	-0.050**	-0.138	-0.194***	-0.241**	-0.213*
	(0.021)	(0.024)	(0.085)	(0.071)	(0.096)	(0.111)
Log(TradeSize)	0.002	-0.002	0.005	0.005	-0.000	0.014
	(0.014)	(0.019)	(0.025)	(0.035)	(0.053)	(0.061)
CEO	-0.037	-0.020	0.010	-0.178	-0.154	-0.199
	(0.028)	(0.064)	(0.156)	(0.157)	(0.192)	(0.227)
CFO	-0.091	-0.078	0.060	-0.307	-0.800***	-1.312***
	(0.086)	(0.095)	(0.172)	(0.187)	(0.233)	(0.256)
Observations	427	427	427	350	350	350
Year FE	YES	YES	YES	YES	YES	YES
Adj R-squared	-0.019	0.013	-0.003	0.011	0.037	0.062

Table 11. Alternative Explanation 3: Sophisticated Market Participants

This table examines the role of institutional ownership and analyst following on the differences in intra-day market response to Form 4 purchase filings by stand-alone banks and and to those by single-bank holding companies. Panel A compares institutional ownership and the number of analysts following for stand-alone banks and single-bank holding companies. Panel B replicates Table 5 with additional controls for institutional ownership (*InstOwnership*) and the number of analysts following (Log(Analysts)). The dependent variables in columns (1) – (3) are raw returns measured from filing time to 1, 5, and 15 minutes. The dependent variables in columns (4) – (6) are cumulative abnormal trading volumes measured from filing time to 1, 5, and 15 minutes. The explanatory variable of interest is *SAB*, an indicator variable that equals one for filings by standalone banks. The bank-level characteristics include Log(MVE), *Tier1capital*, *Deposits*, *Loans*, *Amihud Illiquidity*, *InstOwnership*, and *Log(Analysts*). The transaction-level characteristics include Log(TradeSize), *CEO*, and *CFO*. All variables are defined in Appendix C. Standard errors in parentheses are corrected for heteroscedasticity and clustered by bank. ***, **, and * denote significance at the one percent, five percent, and ten percent levels, respectively, in two-tailed tests.

		Mean	
Variables	SAB	BHC	t-stat (diff)
InstOwnership	0.29	0.40	7.80***
Log(Analysts)	0.90	1.39	9.59***
n	252	3,792	

Panel A. Univariate Analysis

	(1)	(2)	(3)	(4)	(5)	(6)
		Raw Return		Cumulative	Abnormal Vo	lume (CAV)
	1 min	5 min	15 min	1 min	5 min	15 min
SAB	-0.113***	-0.112***	-0.181***	-0.620***	-0.933***	-1.344***
	(0.031)	(0.039)	(0.066)	(0.090)	(0.124)	(0.170)
Log(MVE)	0.005	-0.020	-0.014	0.107*	0.138*	0.220**
	(0.012)	(0.019)	(0.028)	(0.055)	(0.076)	(0.109)
Tier1capital	0.136	-0.448	-0.886	1.599	0.471	-0.023
	(0.369)	(0.440)	(0.613)	(1.466)	(2.279)	(2.864)
Deposits	0.130	0.017	0.140	0.458	0.814	1.163
	(0.125)	(0.177)	(0.234)	(0.561)	(0.969)	(1.320)
Loans	-0.103	-0.166	-0.131	-0.504	-0.861	-0.933
	(0.125)	(0.158)	(0.181)	(0.614)	(1.199)	(1.507)
Amihud Illiquidity	-0.008	0.030	-0.013	0.062	0.376	0.649*
	(0.013)	(0.031)	(0.062)	(0.229)	(0.312)	(0.337)
Log(TradeSize)	0.045***	0.047***	0.045***	0.189***	0.254***	0.342***
	(0.004)	(0.007)	(0.009)	(0.018)	(0.039)	(0.056)
CEO	0.048**	0.104**	0.120**	0.340**	0.554*	0.646*
	(0.023)	(0.047)	(0.053)	(0.165)	(0.283)	(0.331)
CFO	0.023	0.077	0.084	0.183**	0.451*	0.355
	(0.023)	(0.052)	(0.072)	(0.072)	(0.232)	(0.267)
InstOwnership	0.134**	0.066	0.056	-0.027	0.028	-0.340
	(0.065)	(0.091)	(0.082)	(0.289)	(0.672)	(0.800)
Log(Analysts)	0.020	0.036	0.035	0.005	0.050	0.188
	(0.013)	(0.022)	(0.030)	(0.039)	(0.093)	(0.116)
Observations	4,044	4,044	4,044	3,477	3,477	3,477
Year FE	YES	YES	YES	YES	YES	YES
Adj R-squared	0.104	0.049	0.033	0.168	0.030	0.037

Panel B. Regressions with Institutional Ownership and the Number of Analysts Following

Table 12. Retail vs. Large Trading Response to Form 4 filings

This table examines the retail and large informed buy transactions within [-5, +5] trading days of Form 4 filings. The dependent variable in columns (1) and (3), *Net Retail*, is defined as daily retail buy minus sell volume divided by total retail volume, where retail transactions are defined following Boehmer et al. (2021). The dependent variable in columns (2) and (4), *Net Large*, is defined as daily large buy minus sell volume divided by total large volume, where large transactions are defined as those above \$20,000. The explanatory variable of interest is *SAB*×*PostFiling*. *SAB* is an indicator variable that equals one for stand-alone banks. *PostFiling* is an indicator variable that equals one for [0, +5] trading days around the Form 4 filing date. All variables are defined in Appendix C. Standard errors in parentheses are corrected for heteroscedasticity and double-clustered by bank and calendar date. ***, **, and * denote significance at the one percent, five percent, and ten percent levels, respectively, in two-tailed tests.

	(1)	(2)	(3)	(4)
Variables	Net Retail	Net Large	Net Retail	Net Large
SAB × PostFiling	-0.003	0.021**	-0.003	0.021**
	(0.011)	(0.010)	(0.011)	(0.010)
PostFiling	0.001	-0.000		
	(0.009)	(0.006)		
Observations	78,513	78,513	78,513	78,513
Filing FE	YES	YES	YES	YES
Calendar Date FE	YES	YES	YES	YES
Trading Date FE	NO	NO	YES	YES
Adj R-squared	0.065	0.167	0.065	0.167