



November 1, 2022

Ms. Vanessa Countryman  
Secretary  
U.S. Securities and Exchange Commission  
100 F Street NE  
Washington, DC 20549

**Re: Proposed Rule, Securities and Exchange Commission; Resubmission of Comments and Reopening of Comment Periods for Several Rulemaking Releases Due to a Technological Error in Receiving Certain Comments; 87 Fed. Reg. 63016 (Oct. 18, 2022) pp. 63016-63017**

Dear Ms. Countryman:

The U.S. Chamber of Commerce (the Chamber) writes regarding the Securities and Exchange Commission's (the Commission) proposed Share Repurchase Disclosure Modernization Rule (Proposed Rule). We appreciate the additional opportunity to comment.

The Commission's October 7, 2022, decision to reopen the comment period underscores the procedural irregularities that have characterized this rulemaking. The two-week comment period is far too short to allow meaningful comment on the critical developments that have occurred since the closing of the initial comment period. *Cf. N.C. Growers' Ass'n v. United Farm Workers*, 702 F.3d 755, 770 (4th Cir. 2012) ("the instances actually warranting a 10-day comment period will be rare"). Passage of the Inflation Reduction Act is particularly important. That legislation imposes an excise tax on stock buybacks—the subject of the Proposed Rule—and yet the Commission's notice reopening the comment period incredibly makes no mention of it.<sup>1</sup> The Commission's analysis should also recognize the impact of inflation on compliance costs.<sup>2</sup>

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<sup>1</sup> See Resubmission of Comments and Reopening of Comment Periods for Several Rulemaking Releases Due to a Technological Error in Receiving Certain Comments, 87 Fed. Reg. 63,016 (Oct. 18, 2022).

<sup>2</sup> The Commission's estimates are outdated and fail to account for inflation. For example, the Commission estimates "that the average cost of retaining outside professionals [would be] \$400 per hour." Proposing Release, 87 Fed. Reg. at 21,458. The Commission has used that estimate "for about 16 years." Comm'r Mark T. Uyeda, Statement on the Final Rule Related to Listing Standards for Recovery of Erroneously Awarded Compensation (Oct. 26, 2022), <https://www.sec.gov/news/statement/uyeda-statement-clawbacks-102622>. It is far too low. In a different rulemaking, the Commission recently "revised that number to \$600 per hour—a 50% increase, to reflect an inflation adjustment." *Id.*; see *Listing Standards for Recovery of Erroneously Awarded Compensation*, Securities Act Release No.

Nor does this additional 14-day comment period somehow cure the excessive brevity of the initial 45-day period. Commenters could not have foreseen at the outset of that initial comment period that comments would be reopened later, so commenters had no reason to undertake the in-depth quantitative studies that a longer period would have enabled. To allow for a *meaningful* opportunity to comment under 5 U.S.C. § 553(c), the Commission must thus reopen the comment period for a length of greater than 45 days. Only then will the public be able to provide the Commission with the data and analysis necessary for a rigorous, quantitative cost-benefit analysis of the Proposed Rule.

Simply put, the Commission is moving too quickly. As the Chamber previously warned, the speed at which the Commission has been seeking to push through a huge volume of proposals has risked depriving even the Commission's own staff of the time needed to develop thoughtful, properly tailored rule proposals. The Chamber's warnings have borne out. The Commission recently reported that its own systems have been unable even to *capture* all of the public comments the Commission has received,<sup>3</sup> let alone facilitate a thorough review of those comments. The Commission's Inspector General has identified other difficulties still. In a report attached as Exhibit A, the Inspector General highlighted concerns from managers in numerous SEC divisions that the Commission's "more aggressive [rulemaking] agenda" has "limit[ed] the time available for staff research and analysis."<sup>4</sup> The staff has not "received as much feedback during the rulemaking process, either as a result of shortened timelines during the drafting process or because of shortened public comment periods."<sup>5</sup> The staff is also shorthanded, and thus has been "relying on detailees, in some cases with little or no experience in rulemaking."<sup>6</sup> The Commission should proceed at a more manageable pace that ensures stakeholders are able to provide the input the Commission needs, and which gives the Commission the time it requires to do its important job properly.

Even if the Commission does not reopen the comment period a second time, it should at least take additional time to adequately consider the comments submitted in this 14-day period before it issues its final decision on the Proposed Rule. It must of course properly consider the comments that were submitted before the Commission

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11,126, Exchange Act Release No. 96,159, Investment Company Act Release No. 34,732 (October 26, 2022). The Commission should make similar adjustments here before it even begins to reevaluate the other deficiencies in its cost estimates.

<sup>3</sup> See Resubmission of Comments, 87 Fed. Reg. 63,016, 63,016 (Oct. 18, 2022).

<sup>4</sup> The Inspector General's Statement on the SEC's Management and Performance Challenges 3 (Oct. 13, 2022), <https://www.sec.gov/files/inspector-generals-statement-sec-mgmt-and-perf-challenges-october-2022.pdf>.

<sup>5</sup> *Id.*

<sup>6</sup> *Id.*

reopened the comment period. To assist the Commission in that task and ensure that the Chamber's comments appear in one place, attached are the comments the Chamber has previously submitted on the Proposed Rule.

We again appreciate the Commission's decision to reopen the commenting window. The Chamber and our members remain ready to assist the Commission on this important issue.

Sincerely,

A handwritten signature in black ink, appearing to read 'TK' followed by a long horizontal flourish.

Tom Quaadman  
Executive Vice President  
Center for Capital Markets Competitiveness  
U.S. Chamber of Commerce

## **Individual Comment of April 1, 2022**



April 1, 2022

Ms. Vanessa Countryman  
Secretary  
U.S. Securities and Exchange Commission  
100 F Street NE  
Washington, DC 20549

**Re: Share Repurchase Disclosure Modernization (Release Nos. 34-93783, IC-34440; File No. S7-21-21)**

Dear Ms. Countryman:

The U.S. Chamber of Commerce’s (“the Chamber”) Center for Capital Markets Competitiveness (“CCMC”) writes regarding the Securities and Exchange Commission’s (“SEC”) February 15, 2022, proposed rule regarding disclosures about repurchases of an issuer’s equity securities that are registered under Section 12 of the Securities Exchange Act of 1934 (“Proposed Rule” or “Proposal”).<sup>1</sup> The Chamber appreciates the opportunity to comment on this consequential proposal.

The Chamber supports efforts by Congress and the SEC to ensure that America’s capital markets maintain their status as the most competitive, transparent, and liquid in the world, which includes holding those who choose to engage in illegal behavior accountable. While the Chamber supports efforts to ensure that corporate insiders cannot game the system or bend the rules in their own favor, we are concerned that the approach the SEC has proposed toward these ends rests on inconclusive evidence, creates unnecessary burdens, is ultimately impractical, and imposes costs on and risks to the economy that the SEC has not adequately considered.

The Chamber is also concerned that the SEC is increasingly allowing insufficient time for the public to comment on significant and substantive changes in regulation. The SEC provided a 45-day comment period on this updated – and increasingly burdensome – framework for share repurchase disclosures. That length of time is not conducive for developing meaningful analysis to be able to provide meaningful feedback. As we wrote in an unheeded request for extension of the comment period,<sup>2</sup> this truncated timeline does not allow for the collection and development of the kind

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<sup>1</sup> Share Repurchase Disclosure Modernization, 87 Fed. Reg. 8443 (Feb. 15, 2022) (hereinafter, “Proposed Rule”).

<sup>2</sup> Available at <https://www.sec.gov/comments/s7-21-21/s72121-20117648-270467.pdf>

of empirical data and analysis that the SEC is requesting, which is essential to the SEC performing an adequate cost-benefit analysis as required by law. In addition, given the Commission's robust and fast-moving agenda, we are becoming increasingly concerned about the extensive compliance changes that our member firms will have to make concurrently to implement the universe of new rules that are part of the Commission's agenda. It is critical that the SEC consider in any rulemaking the impacts of new rules and other proposed rules under consideration. Specific to this Proposal, it is imperative that the SEC consider the implications or interrelatedness of its recently-proposed Rule 10b5-1 and Insider Trading release.<sup>3</sup>

As the SEC weighs whether and how to move forward with the Proposal, we encourage the Commission to consider the following:

1. The Proposal fails to adequately explain whether and how the new requirements will promote efficiency, competition, and capital formation.
2. The Proposal does not adequately consider the next-day reporting requirement's costs, including additional market volatility, and it does not adequately weigh those costs against the Proposal's purported benefits.
3. The periodic "objective or rationale" disclosure will not promote efficiency, competition, or capital formation.
4. The Proposal's economic baseline analysis does not sufficiently consider that share repurchase programs create substantial benefits for market participants and investors – including retail investors – and should not be unduly deterred.
5. The Commission should quantify the Proposal's costs, and if it relies on commenters' submissions for that quantification, it must give adequate time for further comment.

The CCMC stands ready to provide additional feedback and analysis on these concerns on behalf of its members.

### ANALYSIS

The Commission, in exercising its rulemaking authority, has the statutory obligation to "consider, in addition to the protection of investors, whether the action will promote efficiency, competition, and capital formation." 15 U.S.C. § 78c(f); *id.* §§ 78w(a)(2), 80a-2(c). The Commission also must "*apprise itself*—and hence the public and the Congress—of the economic consequences of a proposed regulation before it decides whether to adopt the measure." *Chamber of Com. of U.S. v. SEC*, 412 F.3d 133, 144

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<sup>3</sup> Release Nos. 33-11013, 34-93782; File No. S7-20-21

(D.C. Cir. 2005) (emphasis added). Failure to do so “makes promulgation of the rule arbitrary and capricious and not in accordance with law.” *Bus. Roundtable v. SEC*, 647 F.3d 1144, 1148 (D.C. Cir. 2011); *see also Am. Equity Inv. Life Ins. Co. v. SEC*, 613 F.3d 166, 177 (D.C. Cir. 2010).

**1. The Proposal fails to identify a market failure that justifies the increased need for regulation as conceived.**

Under current rules, issuers are required to periodically disclose aggregated information about share purchases on a quarterly basis in Form 10-Q and annually in Form 10-K. This information includes the monthly number of shares purchased, the average price paid per share, the total number of shares purchased as part of a publicly announced share repurchase plan, the number of shares that may still be purchased under repurchase plans, and several related footnote disclosures describing, for example, the principal terms of publicly announced share repurchase programs. Current rules also require footnote disclosure of the principal terms of all publicly announced repurchase plans or programs, the number of shares purchased other than through a publicly announced plan or program, and the nature of the transaction.

The Commission’s Proposal as conceived would principally require next day reporting of the number and average price of share repurchased on new Form SR. Additional requirements include a description of the repurchase program’s rationale, the criteria used to determine how many shares it purchased, policies related to the trading activities of corporate insiders, and whether insiders traded in the ten-day period preceding the repurchase of shares. As an addendum to the Chamber’s Fall 2021<sup>4</sup> white paper finds, the Commission’s rationale for these additions makes several observations about the benefits associated with the proposed amendments, but does not explicitly articulate whether these new requirements will promote efficiency, competition, and capital formation. The Commission’s economic analysis cites two economic considerations as justifications for the rule: (1) asymmetric information between insiders and external stakeholders; and (2) the opportunistic use of share repurchases by management. An independent analysis of these economic

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<sup>4</sup> See Lewis, C., White, J. Corporate Liquidity Provision and Share Repurchase Programs. October 2021. Attached. Also available at [https://www.centerforcapitalmarkets.com/wp-content/uploads/2021/09/CCMC\\_Stock-Buybacks\\_WhitePaper\\_10.2.21.pdf](https://www.centerforcapitalmarkets.com/wp-content/uploads/2021/09/CCMC_Stock-Buybacks_WhitePaper_10.2.21.pdf)

considerations commissioned by the Chamber<sup>5</sup> finds these justifications do not sufficiently support the rule as proposed.

**1.A** The Proposal touts increased transparency but does not explain how increased transparency will promote efficiency, competition, and capital formation.

While some degree of information asymmetry may exist between issuers and investors, the SEC's economic analysis does not demonstrate that more frequent disclosure will have a large enough effect on capital costs or liquidity to outweigh any direct or indirect costs of additional disclosure burdens. Reducing asymmetric information will promote efficiency, competition, and capital formation only if the Commission establishes that insiders act in their own self-interest to produce an outcome that is economically harmful to other stakeholders but fails to do so. To the extent that an asymmetry exists, the Proposal fails to explain how reducing the asymmetry will, in aggregate, promote efficiency, competition, and capital formation.

The Commission points to three studies (Easley and O'Hara, 2004; Botosan, 2006, and Lambert, Luez, and Verrecchia, 2007) related to information asymmetries, but those studies do not address the question of whether the links they find to reductions in asymmetric information are associated with more frequent and timely repurchase disclosure. The SEC could have conducted myriad alternative analyses to address the purported necessity of more frequent disclosure of share repurchase activity that would have shown that the proposed disclosure may not result in better information for market participants.<sup>6</sup>

The Commission's analysis on information asymmetries also fails to consider whether daily disclosure could result in such frequent repurchase filings that it essentially creates "noise" in the disclosure regime. Indeed, prior academic work notes that "too much disclosure can be as costly as too little disclosure."<sup>7</sup>

Furthermore, the Commission's analysis also does not sufficiently explain its apparent reversal of the prior position that the appropriate way to promote efficiency, competition, and capital formation is to "minimize the market impact of the issuer's repurchases, thereby allowing the market to establish a security's price based on

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<sup>5</sup> See Lewis, C., White, J. (March 2022). Addendum to U.S. Chamber of Commerce Fall 2021 white paper on share repurchases. *Attached and available at* [https://www.centerforcapitalmarkets.com/resource/addendum\\_stockbuy-back/](https://www.centerforcapitalmarkets.com/resource/addendum_stockbuy-back/).

<sup>6</sup> *Id.*, p. 2

<sup>7</sup> See Core, J. E. (2001). A review of the empirical disclosure literature: discussion. *Journal of Accounting and Economics*, 31(1-3), 441-456.



independent market forces without undue influence by the issuer.” *Purchases of Certain Equity Securities by the Issuer and Others*, 68 Fed. Reg. 64,952, 64,953 (Nov. 17, 2003). Indeed, the Proposal’s “transparency” rationale appears to directly conflict with the Commission’s prior position that efficiency, competition, and capital formation are best served by “minimizing” the impact of repurchases—not highlighting them in daily disclosures. The Proposal does not adequately explain this reversal in position.

Finally, the Commission’s analysis of market transparency does not sufficiently consider whether “under the existing regime, sufficient protections existed to enable investors to make informed investment decisions and sellers to make suitable recommendations to investors.” *Am. Equity Inv. Life Ins. Co.*, 613 F.3d at 179. The current disclosure regime, including repurchase announcements, already provides significant transparency regarding repurchases. Too much transparency can reach the point of diminishing—or even negative—returns. In analyzing the Proposal’s costs and benefits regarding transparency, then, the Commission must compare the new requirements to the existing regime, not to a regime in which transparency is altogether absent.

**1.B** The Proposal fails to support claims of opportunistic or manipulative use of share repurchases by insiders and does not consider empirical evidence refuting the notion that repurchases necessarily harm investment and employees.

The Proposal aims to reduce opportunistic use of repurchases based on a conjecture that managers might opportunistically use repurchases to manage earnings, inflate the stock price, or hit earnings per share (“EPS”) targets to boost the realized value of their compensation. The Commission relies heavily on a June 2018 speech and empirical research presented by then-Commissioner Robert Jackson Jr. as justification for the Proposal. The Commission’s “heav[y]” reliance on this single “relatively unpersuasive stud[y]” shows that the Proposal is based on “insufficient empirical data,” and therefore unlawful. *Bus. Roundtable*, 647 F.3d at 1151.

During the speech, Commissioner Jackson introduced a new data analysis on how executives potentially use repurchases to “cash out” by selling their shares after the buyback announcement. Commissioner Jackson and his staff analyzed 385 issuers that announced repurchases over 2017 and the first three months of 2018 and interpreted the data as evidence that after a company tells the market that the stock is undervalued, executives overwhelmingly decide to sell. A broader analysis of that data, however, offers a different conclusion: that a slight uptick in insider sales

following a buyback announcement is largely mechanically driven by issuers' blackout periods, where both insider sales and repurchases are prohibited ahead of key information releases.

Here again, an independent analysis shows that the Commission's justification is insufficient. When the dataset presented by Commissioner Jackson is analyzed in full, it suggests that the post-buyback announcement increases cited by Commissioner Jackson's study could actually be driven by large outliers. Commissioner Jackson's conclusion that executives' sales of stock increase fivefold following an announcement might be better explained by a few large insider sales, and the data do not reflect systematic evidence of widespread insider trading around buyback announcements. Indeed, once 11 outliers were removed, an analysis of the remaining 16,264 observations in the dataset show that the Commissioner's conclusion that executives personally capture the benefit of the short-term increase in stock price following a buyback announcement is based on data and analysis that significantly overestimates the extent of insider selling due to the bias created by a small number of outlier observations that represent 0.07% of the Commissioner's data sample and does not represent a fivefold increase in selling as the Commissioner found. Thus, independent analysis of this data posits that the slight uptick in insider sales following a buyback announcement is actually the result of pre-set plans to execute sales after company blackout periods rather than opportunistic selling.<sup>8</sup>

Indeed, the Commission's Staff Study agrees with this conclusion, stating that: "There are a number of reasons why insider sales may coincide with repurchase program announcements, making it difficult to ascertain the motivations underlying insider sales. For example, because repurchase program announcements often coincide with earnings announcements and companies often prohibit insiders from trading in the period leading up to earnings announcements, insider sales activity may be the result of pent-up demand."<sup>9</sup> By neglecting this alternative explanation, the Proposal fails to adequately explain how the new requirements will overall promote efficiency, competition, and capital formation.

The Commission's economic analysis also fails to consider a new study from Dittmann, Li, Obernberger, and Zheng (2022) in which the authors examine whether insiders use share buybacks to sell equity at inflated stock prices around a stock

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<sup>8</sup> *Supra* note 5, p. 3

<sup>9</sup> SEC Staff Response to Congress: Negative Net Equity Issuance (Dec. 23, 2020), p. 11, *available at* <https://www.sec.gov/files/negative-net-equity-issuance-dec-2020.pdf>.

buyback.<sup>10</sup> The authors find that the timing of both buyback programs and insider sales is largely determined by the issuer’s corporate calendar through blackout periods and earnings announcement dates – times when both repurchases and insider sales are restricted. The authors conclude that any positive correlation between share repurchases and insider selling is likely driven by blackout periods and not opportunistic insider trading around repurchases.

Similarly, the SEC did not consider a 2019 study from PWC and Professor Alex Edmans of the London Business School, commissioned by the UK government, which examined whether buybacks were used to inflate executive pay in the UK from 2007-2017.<sup>11</sup> The authors found that, over the 10 years studied, not a single FTSE 350 firm used share buybacks to meet an EPS target that it would have otherwise missed. The authors further found that executives with EPS targets did not undertake more repurchases than those without.

The PWC/Edmans study also examined whether buybacks are undertaken at the expense of company investments. The authors found no relationship between share buybacks and investment, inconsistent with concerns that executives were funding repurchases in lieu of investment projects.

The Commission cannot “completely discount[] studies that “reach[] the opposite result” of the Commission’s own conclusions. *Bus. Roundtable*, 647 F.3d at 1151.

**1.C.** Evidence cited around repurchases to achieve EPS-linked bonuses, repurchases and investment, and repurchases to manipulate markets is incomplete and inconclusive.

The Chamber has additional concerns around the integrity of cited references that the Proposal cites, and it is also concerned by the Commission’s failure to consider less costly alternatives for promoting efficiency, competition, and capital formation by reducing any problems related to sections on EPS-linked bonuses,<sup>12</sup> repurchases and investment,<sup>13</sup> and repurchases to manipulate markets.<sup>14</sup>

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<sup>10</sup> See Dittmann, I., Li, A. Y., Obernberger, S., & Zheng, J. (2022). The impact of the corporate calendar on the timing of share repurchases and equity grants (January 21, 2022). Available at SSRN: <https://ssrn.com/abstract=4004098>.

<sup>11</sup> See Edmans, A. (2019). Share Repurchases, Executive Pay and Investment. Available at [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/817978/share-repurchases-executive-pay-investment.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/817978/share-repurchases-executive-pay-investment.pdf)

<sup>12</sup> *Supra* note 5, p. 7

<sup>13</sup> *Supra* note 5, p.10

<sup>14</sup> *Supra* note 5, p. 12

For instance, as the attached addendum notes, the Proposal does not discuss the Commission's 2020 Staff Study, which concludes: "[M]ost of the money spent on repurchases over the past two years was at companies that either do not link managerial compensation to EPS-based performance targets or whose boards considered the impact of repurchases when determining whether EPS-based performance targets were met or in setting the targets, suggesting that other rationales motivated the repurchases."<sup>15</sup>

Relatedly, the Proposal does not reflect the reality that many companies' compensation plans adjust for any impact of share repurchases beyond what was in the board-approved plan to begin with. Moreover, compensation committees review all the impacts of EPS growth, including on share repurchases, and take that into account when exercising discretion over how much is ultimately paid to management.

In sum, the Proposal fails to identify how increased disclosures of share repurchases will promote efficiency, competition, and capital formation. Moreover, the Commission's own 2020 Staff Study provides quantification that would refute some of the economic concerns that the Proposal references. Taken together, the Proposal and accompanying economic analysis do not present robust evidence of harms to investors and the securities market attributable to the current disclosure requirements for share repurchases.

The Chamber supports efforts to root out illegal behavior in the market but encourages the Commission to better analyze available evidence and adjust accordingly as it weighs how to proceed on subsequent rulemaking.

**2. The proposal does not adequately consider the next-day reporting requirement's costs, including additional market volatility, and it does not adequately weigh those costs against the Proposal's purported benefits.**

The Chamber is deeply concerned about the Commission's proposed next-day reporting requirement for share repurchase activity. As referenced in the discussion of information asymmetry above (2.A), the SEC has not offered compelling evidence that a next-day reporting requirement would create the benefit the Proposal purports it would. Instead, next-day reporting risks greater market volatility and imposes unnecessary burdens, both substantial harms that have not been thoroughly contemplated.

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<sup>15</sup> *Supra* note 9, p.45.

An effective disclosure regime provides investors with the material information they need to make objective decisions regarding the value of an investment but does not overwhelm them with peripheral information that can obscure what is material and distract from what matters about a company.<sup>16</sup> The competitiveness of the U.S. capital markets depends on getting the balance of information right, including the frequency with which that information is provided. As Justice Thurgood Marshall explained in *TSC Industries v. Northway*, providing investors with “an avalanche of trivial information ... is hardly conducive to informed decisionmaking.”<sup>17</sup> Just as the SEC has a responsibility to protect investors from receiving too little information, so too does the SEC have a responsibility to protect investors from too much information. The SEC’s proposed rule inadequately explains how it believes this rule strikes the correct balance.

As part of a comprehensive management strategy, some companies engage in stock buyback activity 250 days a year. Under the Proposal as conceived, that would lead to an additional 250 yearly disclosures that have not been demonstrated to be readily actionable or useful to the average investor. Providing information about repurchases on a next-day cadence risks providing just such “an avalanche of trivial information” to investors, potentially resulting in confusion rather than protection.

Providing too much information to investors also risks misinterpretation and, ultimately, increased market volatility. A next-day reporting cadence is divorced from other business and commercial reporting rhythms and is likely to present distorted information to the market. On a next-day frequency, Form SR would provide information to market participants that could give investors the impression they can glean meaningful insights about a company’s intended activities based on an increase or decrease in share repurchase volume or cessation of a buyback plan altogether. Investors may be led to inaccurate views about a company’s outlook or intentions and could ultimately promote speculative trading based on next-day information. Although produced in aggregate numbers and in average price paid per share, the amount of granular historical record companies would ultimately produce would be voluminous and mineable and could lead to incorrect conclusions about company practices and methodology.

Therefore, to the extent the Commission requires more information about share repurchase activity, it should do so with a frequency no less than once a month and in

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<sup>16</sup> See Center for Capital Markets Competitiveness (2017). Essential Information: Modernizing Our Corporate Disclosure System. Available at [http://www.centerforcapitalmarkets.com/wp-content/uploads/2013/08/U.S.-Chamber-Essential-Information-Materiality-Report-W\\_FINAL.pdf?x48633](http://www.centerforcapitalmarkets.com/wp-content/uploads/2013/08/U.S.-Chamber-Essential-Information-Materiality-Report-W_FINAL.pdf?x48633)

<sup>17</sup> 426 U.S. 438, 448-49 (1976)

backward-looking, aggregate terms. A monthly cadence would provide more focused information, limiting the likelihood of misinterpretation while providing sufficient information to the market and its regulator about company activity.

Moving Form SR to a once-a-month frequency would also cut down on the internal compliance challenges of next-day reporting. Disclosure of any kind poses logistical and mechanical challenges for companies. Next-day disclosure would exacerbate these challenges such that the force of disclosure would likely alter some companies' share repurchase practices, threatening the benefits that repurchases present, including to retail investors focused on returns in the long-term, as discussed in Section 4 below.

In addition, the SEC should provide greater clarification around disclosure related to Accelerated Share Repurchase ("ASR") transactions. The Proposal should clarify that any reporting requirements applicable to ASR transactions should apply only to the initial purchase by a company and to any additional shares acquired by the company at final settlement of the transaction period.

Should the SEC move forward with Form SR, it should take these consequences of next-day reporting into account and should strongly consider moving to a once-a-month frequency, and should thoroughly explain any analysis, including the cost-benefit analysis, that justifies a daily disclosure requirement as opposed to a monthly or less frequent alternative.

### **3. The periodic "objective or rationale" disclosure requirement will not promote efficiency, competition, or capital formation.**

The Chamber is also concerned about the SEC's proposed Item 703 periodic disclosure requirements and corresponding changes to Forms 20-F and N-CSR. The SEC has proposed to require companies to disclose the 'objective or rationale' for its share repurchases and the process or criteria used to determine the amount of repurchases. Disclosures such as these are worrisome because they border on interfering with company governance, planning, and decisionmaking and again risk misinterpretation.

Companies use *surplus* capital for repurchases. Using this capital in this manner gives companies an efficient means of attenuating the temptation to invest in negative net present value projects that sub-optimally grow the size of a company's assets. Prior to the SEC's safe harbor for share repurchases, there was considerable evidence that

some managers would use surplus cash for projects or acquisitions that increased the size of assets under their control, aiming to boost managerial prestige and compensation and thereby destroying firm value.<sup>18</sup> Repurchasing shares limits the resources under management control, thereby requiring firms to engage with capital market participants to fund new investment. Stock buybacks are a valuable management tool that allows companies to better manage value and make healthy decisions.

The benefits of stock buybacks are abundant and clear; moreover, as discussed below and in the attached addendum, there is little evidence to show that executives and management are opportunistically structuring share repurchase programs for personal gain. The SEC, however, has predicated its proposed amendments around Item 703 on this very principle. The SEC's own economic analysis in the Proposal admits that "The benefits of the information about the rationale for repurchases could be limited ... if investors are able to infer the purpose of repurchases from other public information."<sup>19</sup> Further, the economic analysis goes on to say: "The benefits of the information about the rationale for repurchases could be limited if such disclosure is boilerplate and provides relatively little specificity to investors."<sup>20</sup> Companies engage in buybacks for purposes of corporate efficiency and, upon an explicit authorization and approval for a share repurchase program, already publicly disclose their intent to move forward with a repurchase program, including information such as: timing; size; features designed to achieve a specified objective; and method of repurchase. Investors thus have significant information about a repurchase program and an understanding of the program's mechanics and purpose. Additional disclosure in this manner would be superfluous and is likely to be boilerplate, and therefore – by the Commission's analysis – of little to no use to investors.

The costs of a "rationale or objective" disclosure, on the other hand, are significant. Companies that choose to comply with this disclosure requirement using something other than boilerplate language will incur costs to ensure that the language is holistic, does not create unnecessary litigation risk, and otherwise in compliance with regulatory requirements. The Proposal does not adequately quantify, analyze, or weigh these costs. On the other hand, boilerplate is unlikely to provide any new information to investors, and it is therefore unlikely to create any market benefits. Additional "rationale or objective" disclosures are thus unlikely to promote efficiency, competition, or capital formation.

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<sup>18</sup> See Jensen, M. (1986). Agency costs of free cash flow. *American Economic Review*, 76, 323–329.

<sup>19</sup> At p. 49

<sup>20</sup> *Id.*

Beyond “rationale and objective” disclosures, the Chamber also has concerns about new requirements pertaining to shares sold by executives during buyback periods. As explained above, any positive correlation between share repurchases and insider selling is likely driven by blackout periods and not opportunistic insider trading around repurchases. Despite this fact, the Commission has moved toward requiring new disclosures for directors’ and officers’ trading activity happening concurrently with a share repurchase program – based upon the unjustified assumption that nefarious activity is occurring. Additional disclosure in this regard could well lead investors to confuse correlation for causation of inappropriate company behavior (where there is none). This would undermine efficiency, not promote it. CCMC supports efforts to root out bad behavior, but encourages the SEC to consider the likelihood that proposed transparency measures could mislead investors, especially because many company repurchase programs operate almost every trading day of the calendar year and are often in compliance with Rule 10b-18 and current 10b5-1(c) practices.

While it is imperative that bad behavior be identified and stopped, disclosures should be designed to provide meaningful protections to investors and not unduly mislead them. As a result, the Chamber encourages the SEC to reconsider its periodic disclosure proposals or at a minimum to explain how those proposals will promote efficiency, competition, or capital formation.

**4. The Proposal’s economic baseline analysis does not sufficiently consider that share repurchase programs create substantial benefits for market participants and investors – including retail investors – and should not be unduly deterred.**

Shareholders rightly expect companies to act as prudent stewards of their capital. Specifically, to the extent that companies generate capital that they cannot reinvest consistent with their strategic objectives, share repurchase programs present an efficient way to manage value and make smart business decisions.

Share repurchases contribute to stronger capital markets. A Fall 2021 white paper published by the Chamber found that corporate share repurchase programs are an important management tool for companies that have significant benefits for capital markets, particularly retail investors.<sup>21</sup> The Chamber’s report identified a few key areas of economic benefit for share repurchases, including many benefits for retail investors:

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<sup>21</sup> *Supra* note 4



1. **Greater liquidity:** Share repurchase programs provide substantial market liquidity, which facilitates orderly trading and reduces transaction costs for investors, including retail investors;
2. **Reduced volatility:** Share repurchases significantly reduce realized and anticipated return volatility. Imposing limitations on repurchase activity would increase stock market volatility and force investors, including retail investors, to bear greater amounts of downside risk;
3. **Benefit to retail investors:** Share repurchases generate an economically large benefit for retail investors. Since 2004, buybacks have saved retail investors between \$2.1 – 4.2 billion in transaction and price impact costs;

Managers strategically use share repurchase programs during periods of uncertainty. These effects help mitigate risks, allow institutional and retail investors alike to buy and sell shares without having a large price impact, and stabilize trading markets. Thus, repurchases help to reduce volatility, which presents a benefit to all shareholders, including retail investors, regardless of whether investors buy and sell shares in their own accounts or participate indirectly through investment in retirement accounts. Company shareholders view share repurchases as an important element of value creation.

These benefits, including an estimated \$4.1 billion savings to retail investors, must not be overlooked as the SEC contemplates moving forward with a rulemaking. In her statement supporting the proposed rule, Commissioner Allison Herren Lee characterized increased disclosure around repurchases, including the next-day reporting requirement and periodic rationale requirement, as a method to increase transparency that would benefit companies making “smart and thoughtful” choices and that, alternatively, “if anticipated disclosure operates to dampen enthusiasm for buybacks, that may well arise from flaws in the strategy behind the practice at certain companies.”<sup>22</sup> What this view does not acknowledge, however, is that increased disclosure also presents an increased compliance burden and thus increased costs for companies that choose to engage in share repurchase programs. Although the Commission’s proposed approach may seek to deter bad actors from gaming repurchase activity, the increased costs imposed on both small and large companies will deter them from making “smart and thoughtful” choices, and to reconsider engaging repurchases. Thus, the additional costs imposed by the Proposal would ultimately deprive investors, markets, and the public of those important benefits of share repurchase programs.

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<sup>22</sup> Available at <https://www.sec.gov/news/statement/lee-statement-corporate-share-repurchase-proposal-121521>

The Commission should consider the effects that these benefits have on efficiency, competition, and capital formation as part of the Proposal's baseline analysis. The Commission should also consider whether the proposal will suppress repurchases, thereby suppressing the benefits discussed above, and it should quantify that suppression as one of the Proposal's costs. In other words, the Commission must be circumspect that it is not unduly deterring buybacks for all public companies based on perceived flaws in the strategy of a few. Indeed, the Commission's own 2020 Staff Report covering share repurchases concludes that, "... on average, repurchases are viewed as having a positive effect on firm value."<sup>23</sup> In effect, the Commission's Proposal embraces a dramatic shift in viewpoint on repurchases, which would require a substantial shift in facts in the past two years sufficient to justify such a changed worldview.

**5. The Commission must quantify the Proposal's costs, and if it relies on commenters' submissions for that quantification, it must give adequate time for further comment.**

The Commission has the statutory obligation "*apprise itself . . . of the economic consequences of a proposed regulation before it decides whether to adopt the measure.*" *Chamber of Com. Of U.S.*, 412 F.3d at 144 (emphasis added); *see Bus. Roundtable*, 647 F.3d at 1150. The Proposal states that many costs and other effects of the Proposal "cannot be quantified." 87 Fed. Reg. at 8,451. Yet, even if some of the Proposal's effects cannot be quantified, the Commission must try to quantify those costs and effects that are quantifiable. For example, even where the Commission cannot quantify market-wide costs, it must "estimate[] the cost to an individual [company]" when such estimate is possible. *Chamber of Com. of U.S.*, 412 F.3d at 144.

The Proposal also "encourage[s] commenters to provide data and information that would help quantify the benefits, costs, and the potential impacts of the proposed amendments on efficiency, competition, and capital formation." 87 Fed. Reg. at 8,451. Yet, the Proposal does not explain the dissonance between the Commission's position that some effects cannot be quantified and the invitation for commenters to quantify the Proposal's effects. If the Commission is to rely on commenters to help discharge the Commission's duty to quantify costs and other effects, the Commission must, at minimum, provide the public with an explanation of which costs effects it believes to be quantifiable in the first instance.

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<sup>23</sup> *Supra* note 15, p 42

Likewise, if the Commission is to rely on the public to quantify the Proposal's costs and other effects, then the Commission must give the public sufficient time to comment on that quantification. As explained in the Chamber's prior letter, 45 days is not nearly enough. In other words, the Proposal relies on the public for quantification, yet it denies the public sufficient time to do so. These aspects of the Proposal reflect a strategy by which the Commission can attempt to avoid its duty to "appraise itself" of a regulation's costs. *Chamber of Com. Of U.S.*, 412 F.3d at 144. While the truncated comment period is concerning in and of itself, it is especially concerning given the Commission's invitation for the public to quantify costs—an assessment that is the Commission's own responsibility. To the extent that this strategy allows the Commission to avoid that duty, it embodies unlawful arbitrary and capricious rulemaking.

### Conclusion

The Chamber appreciates the opportunity to weigh in on these important matters. Share repurchases provide important benefits to investors, companies, the capital markets, and the economy overall. Although the Chamber supports efforts to hold specific bad actors accountable through transparency, regulation must be constructed in a manner that is practical, does not deter positive market benefits, and is well-supported.

The Chamber and its members stand ready to assist the SEC toward these goals.

Sincerely,

A handwritten signature in black ink, appearing to read 'TK' followed by a long horizontal flourish.

Tom Quaadman  
Executive Vice President  
Center for Capital Markets Competitiveness  
U.S. Chamber of Commerce



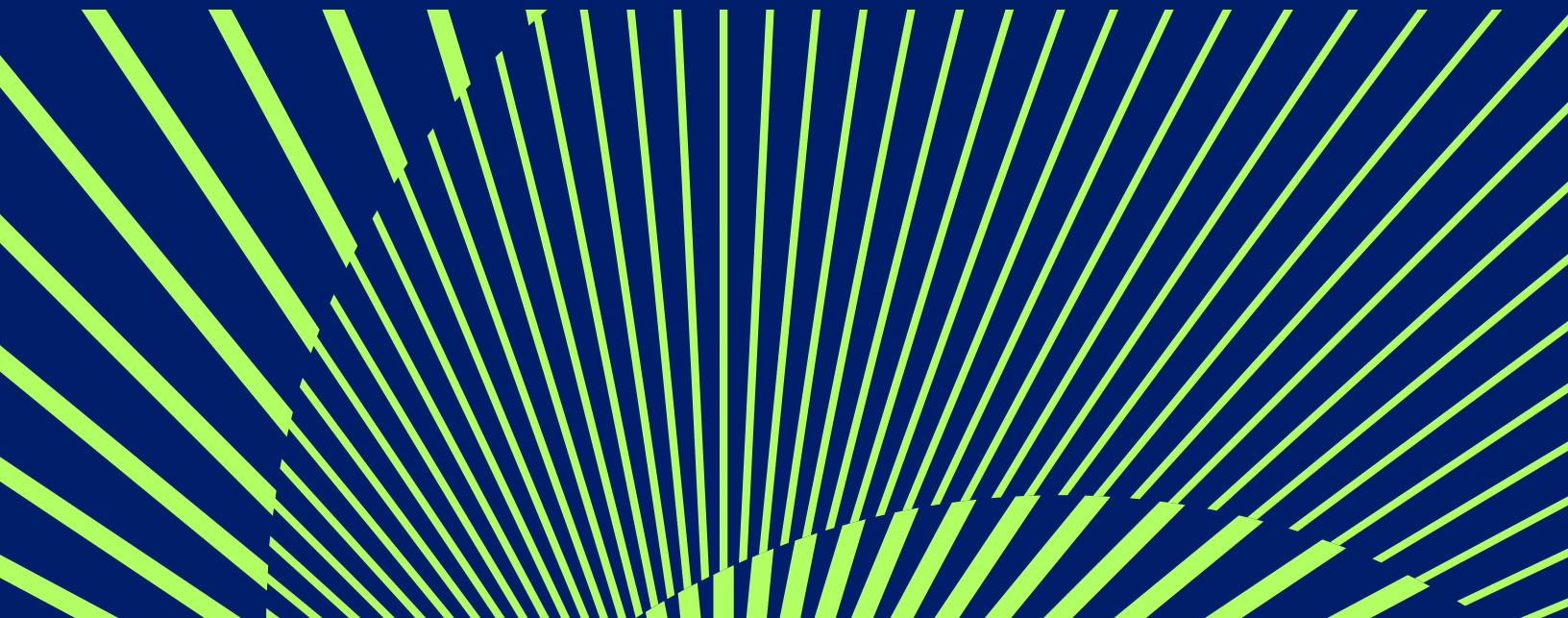
U.S. Chamber of Commerce  
Center for Capital Markets  
Competitiveness

Addendum

Corporate Liquidity Provision &

# Share Repurchase Programs

By: Craig M. Lewis & Joshua T. White



## Craig Lewis, Josh White

File No. S7-21-21; Share Repurchase Disclosure Modernization  
March 22, 2022

On December 15, 2021, the U.S. Securities and Exchange Commission (“Commission”) proposed amendments to its rules regarding the disclosure of share repurchase programs or, as they are colloquially known, stock buybacks. The amendments contained in the Share Repurchase Disclosure Modernization proposal rulemaking (hereafter referred to as the “Proposal”) would require more frequent and detailed disclosures regarding issuers purchasing of their own stock.

Under the current rules, issuers are required to periodically disclose aggregated information about share purchases on a quarterly basis in Form 10-Q and annually in Form 10-K. This information includes the monthly number of shares purchased; the average price paid per share; the total number of shares purchased as part of a publicly announced share repurchase program; the number of shares that may still be purchased under share repurchase programs; and several related footnote disclosures describing, for example, the principal terms of publicly announced share repurchase programs. The current rules also require footnote disclosure of the principal terms of all publicly announced share repurchase programs, the number of shares purchased other than through a publicly announced program, and the nature of the transaction.

The Proposal would principally require next-day reporting of the number and average price of shares repurchased on new Form SR.<sup>1</sup> Additional requirements include a description of the share repurchase program’s rationale,

the criteria used to determine how many shares the company purchased, policies related to the trading of corporate insiders, and whether insiders traded in the 10-day period preceding the repurchase of shares.

We were commissioned by the United States Chamber of Commerce to assess the soundness of the economic analysis (“EA”) that accompanies the Proposal. As we demonstrate below, the EA contains numerous flaws. Most notably, the EA does not articulate a market failure that justifies the need for potential rulemaking; instead, it makes several observations about anticipated benefits but does not explicitly discuss whether the Proposal solves an actual problem. Rather, the EA primarily relies on simple economic reasoning to qualitatively assess potential benefits, such as greater transparency, regardless of whether an actual problem that warrants rulemaking exists. The EA also makes numerous conjectures about opportunistic behavior by issuers and insiders that are primarily supported by a flawed empirical analysis conducted by former SEC Commissioner Robert Jackson.

The Proposal describes two primary economic considerations for potential rulemaking: (1) the opportunistic use of share repurchases by management and (2) asymmetric information between insiders and external stakeholders. We begin by examining the economic baseline of the EA, which is the de facto alternative regulatory approach. The baseline is an essential part of the EA as it represents a reference point

1. The proposed Form SR would require the following disclosure: (1) date of the repurchase; (2) identification of the class of securities purchased; (3) the total number of shares (or units) purchased, including all issuer repurchases regardless of whether they were made pursuant to publicly announced programs. It also requires the following additional disclosures: (1) the average price paid per share (or unit); (2) the aggregate total number of shares (or units) purchased on the open market; (3) the aggregate total number of shares (or units) purchased in reliance on the safe harbor in Exchange Act Rule 10b-18; and (4) the aggregate total number of shares (or units) purchased pursuant to a plan intended to satisfy the affirmative defense conditions of Exchange Act Rule 10b5-1(c). See <https://www.sec.gov/rules/proposed/2021/34-93783.pdf> or the accompanying fact sheet at <https://www.sec.gov/rules/proposed/2021/34-93783-fact-sheet.pdf>.

when comparing alternative rulemaking actions.<sup>2</sup> We characterize how well the EA documents the existence of a market failure. We then identify instances where the EA fails to quantify aspects of the baseline as well as the incremental costs or benefits of Proposal, even though, in some cases, opportunities for quantification exist.

As part of our analysis, we review the relevant academic literature and assess whether the evidence supports the Commission’s interpretation of these studies. We note instances where the EA incorrectly or incompletely cites empirical studies. Although some of these deficiencies can be corrected, we conclude that, on net, the EA reflects an incomplete assessment of the academic literature that appears to be designed to frame the economic effects

in a manner that supports the Proposal rather than to objectively assess it.

Our overarching conclusion is that the EA fails to convincingly identify the existence of a market failure. As such, the Proposal lacks merit and could lead to unanticipated consequences that are detrimental to the interests of issuers and investors.

We structure our addendum as follows. Section I discusses possible opportunistic use of repurchases by issuers/insiders. Section II examines information asymmetries between investors and issuers/insiders around repurchases. Section III offers a brief conclusion. Appendix A tabulates the topical content of 80 studies cited in the Proposal. Appendix B tabulates 22 relevant studies that the EA does not reference.

## I. Opportunistic Share Repurchases

The first potential market failure—the *opportunistic use of repurchases*—is based on a conjecture that managers might use repurchases to manage earnings, inflate stock prices, or hit earnings per share (“EPS”) targets to boost the realized value of their compensation. The clearest explanation of this market failure occurs in the Proposal’s introduction:<sup>3</sup>

*“Some of these commentators view issuer share repurchases as a tool to raise the price of an issuer’s stock in a way that allows insiders and senior*

*executives to extract value from the issuer instead of using the funds to invest in the issuer and its employees.”*

As we discuss below, claims of opportunistic or manipulative use of share repurchases by insiders are not supported by economic analysis. As the above quote illustrates, the EA ignores empirical evidence refuting the notion that repurchases necessarily harm investment and employees, choosing instead to reference opinions offered by commentators.

2. Prior academic work argues that the baseline sets a benchmark for estimating the costs and benefits of the proposed rule because policy choices will vary based on how the current landscape and market failure is framed. See White, J. T. (2015). The evolving role of economic analysis in SEC rulemaking. *Ga. L. Rev.*, 50, 293-325.
3. We note that certain economic effects are discussed in the Proposal’s introduction but are missing from the EA. Because the EA fails to explicitly articulate a clear market failure, the reader is forced to interpret the discussion in the introduction as the Commission’s description of the market failure.

## A. Insider Selling Around Repurchases

The Proposal’s introduction characterizes the evidence that indirectly motivates the possibility that managers opportunistically use buybacks to increase their realized compensation. Throughout the Proposal, the Commission relies heavily on a June 2018 speech by then SEC Commissioner Robert Jackson Jr. (“Jackson Speech”).<sup>4</sup> During this speech, Commissioner Jackson introduces new data analysis (the “Jackson Dataset”) that reputedly shows how executives use repurchases to “cash out” by selling their shares after the buyback announcement.

Commissioner Jackson and his staff analyzed 385 issuers that announced repurchases from January 2017 through March 2018. They conclude that “after the company tells the market that the stock is cheap, executives overwhelmingly decide to sell.” As a confirmation of this activity, Commissioner Jackson presents the graph in Figure 1; it shows that the average total transaction value of insider shares sold increases by more than fivefold just after a repurchase is announced.

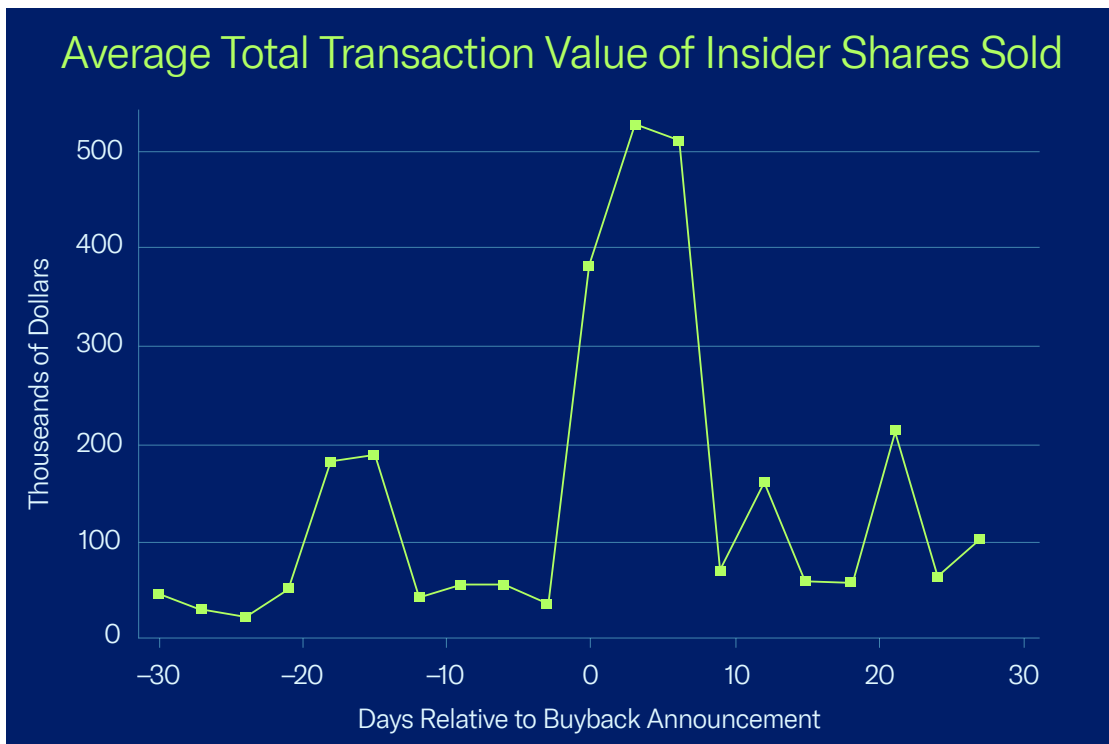


Figure 1. This figure presents the average total transaction value of insider shares sold around repurchase announcements. It is excerpted directly from then Commissioner Jackson’s Speech and is reported as Figure A.3. in the data appendix to this speech.

4. See the speech by Commissioner Jackson Before the Center for American Progress: Jackson, Jr., R. J., (2018, June 11). *Stock buybacks and corporate cashouts*, <https://www.sec.gov/news/speech/speech-jackson-061118> (“Jackson Speech”). The data appendix is found at <https://www.sec.gov/files/speech-jackson-061118-data-appendix.pdf>. The dataset underlying the speech is available at [https://www.sec.gov/files/combined\\_datasets.csv](https://www.sec.gov/files/combined_datasets.csv).



Commissioner Jackson interprets this graph as follows:

*“On average, in the days before a buyback announcement, executives trade in relatively small amounts—less than \$100,000 worth. But during the eight days following a buyback announcement, executives on average sell more than \$500,000 worth of stock each day—a fivefold increase. Thus, executives personally capture the benefit of the short-term stock-price pop created by the buyback announcement.”*

We download and analyze the Jackson Dataset. Figure 1 above plots the three-day moving average of the total transaction value of insider shares sold in the 61-calendar-day event window ([-30, +30]) that centers on the buyback announcement. Because a moving average smooths transaction activity, it tends to overstate the influence of outliers by making trading activity look more persistent than it actually is. To demonstrate this point, we plot the daily average for the Jackson Dataset in Figure 2.

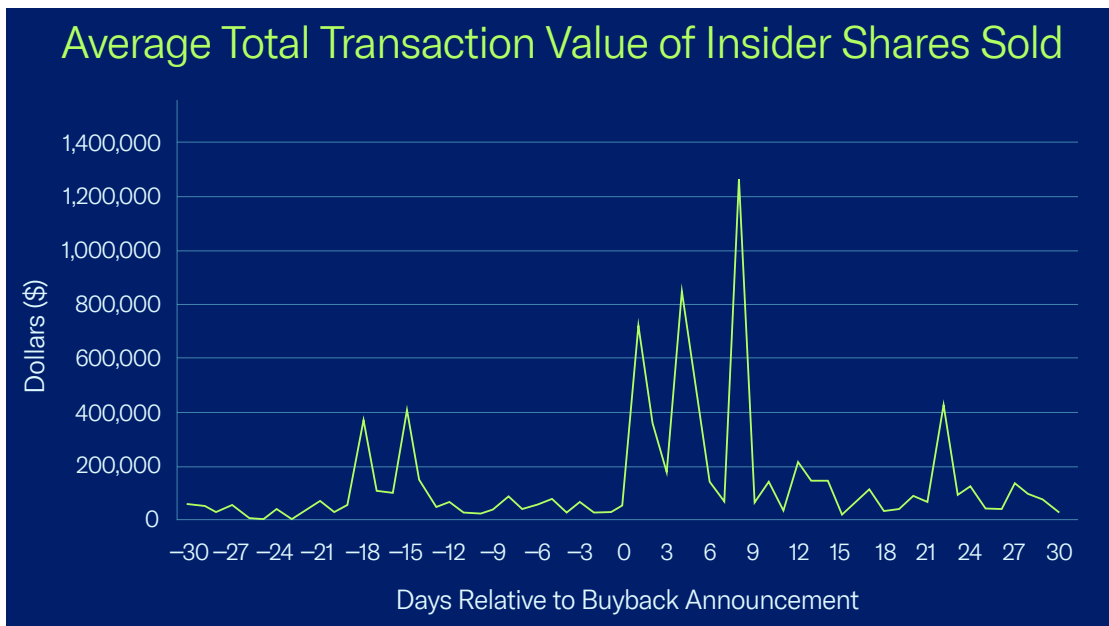


Figure 2. This figure reports average daily transaction value of insider shares sold using the Jackson Dataset.

The overall pattern in Figure 2 is similar to that of Figure 1; however, because our graph is not smoothed, it exhibits large oscillations—which raises the possibility that increases in post-buyback transaction activity could be driven by a small number of large insider sales rather than widespread insider trading around buyback announcements.

Indeed, in Table 1 below, we report that the average and median total transaction values of insider shares sold are \$147,753 and \$0 over the 61-day event window, respectively. The large size of the sample standard deviation (\$3,975,982) relative to the average indicates that the Jackson Dataset exhibits significant right-skewness. For example, the 99th percentile is \$2,062,200, while the maximum value is \$382,737,472.

Table 1 also shows that we obtain similar results if we expand our analysis to a 121-day event window ([-60, +60]).

Event Window	Mean	Standard Deviation	P1	P25	P50	P75	P90	P99	Maximum
[-30, +30]	147,753	3,975,982	0	0	0	0	0	2,062,200	382,737,472
[-60, +60]	182,136	5,625,048	0	0	0	0	0	1,623,672	530,900,000

Table 1. This table presents the distribution statistics of the total transaction value (\$) of insider shares sold using the Jackson Dataset.

Using the Jackson Dataset of 385 stock buybacks, 16,275 possible transaction days occurred during the [-30, +30] event window and 31,021 possible transaction days during the [-60, +60] event window. If we exclude observations that exceed the 99.9th percentile (i.e., all daily total transaction

values of insider shares sold that exceed \$21,264,840), we remove 11 observations: 3 observations from the [-30, -1] window and 8 from the [+1, +30] window. We then plot the average total transaction value of insider shares sold using the remaining 16,264 observations below in Figure 3.

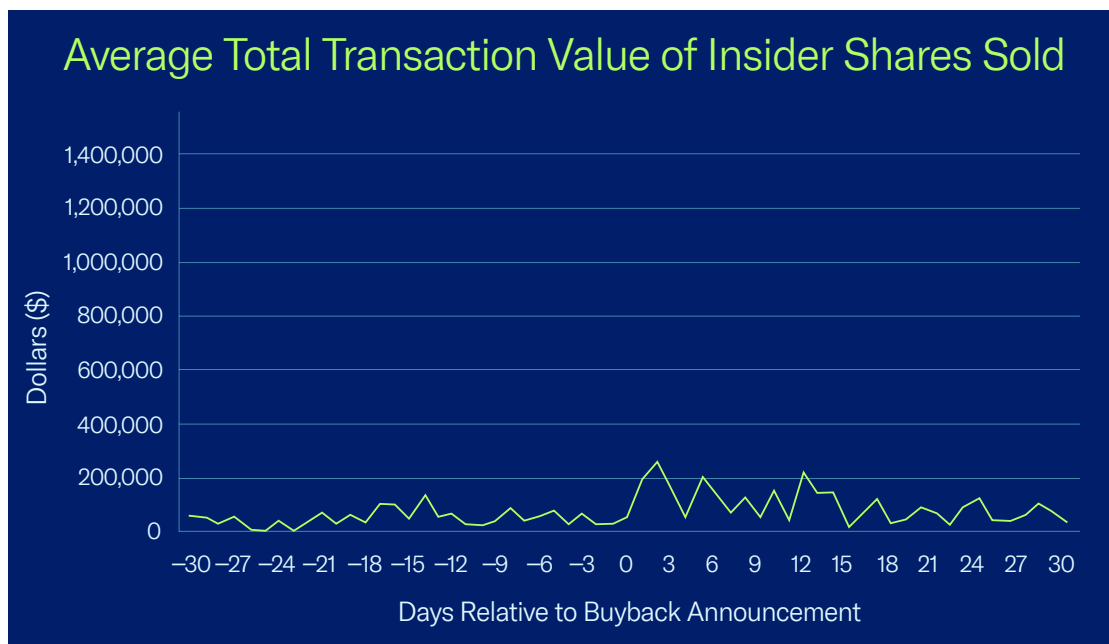


Figure 3. This figure reports average daily transaction value of insider shares sold using the Jackson Dataset after removing all observations that exceed the 99.9th percentile.

Figure 3 tells a different story than the one presented in the Jackson Speech. Specifically, Figure 3 illustrates how removal of a few outliers eliminates the large spikes in transaction activity observed in

Figures 1 and 2. The difference relative to the prior figures is visually striking. Thus, Commissioner Jackson’s conclusion—that “executives personally capture the benefit of the short-term stock-price pop

created by the buyback announcement”— is based on an analysis that significantly overestimates the extent of insider selling. We attribute this overestimation to bias created by a small number of outlier observations in the former Commissioner’s sample. We conclude that one of the key analyses underlying the Proposal does not present robust evidence that insiders opportunistically sell, or “cash out,” their shares after a buyback announcement.

Rather than attributing the increase in post-buyback announcement trading to opportunistic behavior, we posit that the uptick in insider sales is mechanically driven by issuer blackout periods, during which both insider sales and repurchases are prohibited ahead of key information releases. Despite the economic relevance of this alternative explanation, the EA briefly relegates the discussion of blackout periods to two footnotes. Footnote 58 of the EA references the 2020 SEC Staff Study:

*“There are a number of reasons why insider sales may coincide with repurchase program announcements, making it difficult to ascertain the motivations underlying insider sales. For example, because repurchase program announcements often coincide with earnings announcements and companies often prohibit insiders from trading in the period leading up to earnings announcements, insider sales activity may be the result of pent-up demand.”*

Footnote 81 of the EA notes that:

*“In the case of repurchase announcements, where such announcements coincide with earnings announcements, because issuers generally prohibit insiders from trading in the period leading up to earnings announcements as part of blackout periods, insider sales activity after the repurchase announcement may be the result of pent-up liquidity demand.”*

As the Commission considers a re-proposal or adopting a final release, the EA should cite a study by Dittmann, Li, Obernberger, and Zheng (2022) that became publicly available shortly after the Proposal.<sup>5</sup> In this study, the authors examine whether insiders use share repurchases to sell equity at inflated stock prices. They find that the timing of both buyback programs and insider sales is largely determined by trading prohibitions attributable to blackout periods and earnings announcement dates—times when both repurchases and insider sales are restricted. Thus, any positive correlation between share repurchases and insider selling is likely driven by blackout periods rather than opportunistic insider trading around repurchases.

After controlling for the “corporate calendar,” Dittmann et al. (2022) present empirical evidence that the positive correlation between share repurchases and equity-based compensation disappears, and conclude that:<sup>6</sup>

5. See Dittmann, I., Li, A. Y., Obernberger, S., & Zheng, J. (2022, January 21). The impact of the corporate calendar on the timing of share repurchases and equity grants, available at <https://ssrn.com/abstract=4004098>.  
6. Dittmann et al. (2022) control for the corporate calendar using fiscal-month fixed effects and the monthly share of blackout days.

*“[W]e do not find systematic evidence of price manipulation when the CEO’s equity vests or when the CEO sells her vested equity.”*

Dittmann et al. (2022) also show that a CEO is more likely to buy rather than sell stock when a new share repurchase program is announced. They summarize their findings as follows:

*“Overall, these results suggest that the CEO tends to believe that the stock is undervalued when she initiates a buyback program. There is no evidence for the notion that the CEO uses buyback announcements to create short-term private benefits.”*

## **B. Repurchases to Achieve EPS-Linked Bonuses**

The Proposal claims that insiders opportunistically use share repurchase programs to inflate the reported EPS by reducing the shares outstanding in the denominator. Unfortunately, the EA provides no independent quantification demonstrating the rate or magnitude of EPS-driven repurchase activity—something that should be included when characterizing the economic baseline. Instead, the EA only notes:

*“Share price- or EPS-tied compensation arrangements can thus incentivize executives to undertake repurchases, in an attempt to maximize their compensation, even if such repurchases are not optimal from the shareholder value maximization perspective.”*

The associated discussion of this topic is largely relegated to Footnotes 78, 79, and 80, where the Commission cites numerous studies without assessing their implications. In fact, the EA does not provide an objective assessment of whether insiders use repurchases to inflate EPS to earn greater realized compensation. Although not discussed in the Proposal, the clearest evaluation can be found in the Commission’s 2020 Staff Study, which concludes:

*“[M]ost of the money spent on repurchases over the past two years was at companies that either do not link managerial compensation to EPS-based performance targets or whose boards considered the impact of repurchases when determining whether EPS-based performance targets were met or in setting the targets, suggesting that other rationales motivated the repurchases.”*

Further, some of the studies cited in the EA reflect an incomplete framing of the empirical evidence. For example, the EA cites a blog post that summarizes a study by Fields (2016) that interviews 44 directors serving on 95 boards. The Fields (2016) study notes that:<sup>7</sup>

*“[M]ost directors said that their companies are aware of the relationship between buyback programs and compensation and that they make deliberate, informed choices to ensure that they reward executives for desired behavior rather than for financial manipulation of share prices.”*

7. See the comprehensive study: Field, R. (2016, August). “Buybacks and the board: Director perspectives on the share repurchase revolution,” Investor Responsibility Research Center Institute (IRRC) Institute/Tapestry Network, [https://www.tapestrynetworks.com/sites/default/files/publication\\_pdf/IRRCI%20-%20Buybacks%20and%20the%20Board%20-%20August%202016.pdf](https://www.tapestrynetworks.com/sites/default/files/publication_pdf/IRRCI%20-%20Buybacks%20and%20the%20Board%20-%20August%202016.pdf). The blog post is available at <https://corpgov.law.harvard.edu/2016/09/20/buybacks-and-the-board-director-perspectives-on-the-share-repurchase-revolution/>.

In other words, share repurchase programs do not “outsmart” the careful design of executive compensation plans. Although not mentioned in the EA, Fields (2016) describes a reasonable alternative to the proposed increase in repurchase disclosure frequency:

*“Few companies publicly disclose details about buyback decision-making and very few state which of the four reasons are driving any particular buyback program. Although a number of directors mentioned that their companies project how buyback activity will affect EPS and adjust targets accordingly, only 20 S&P 500 companies disclosed that they did so. Most companies and boards with robust buyback processes do not currently disclose enough to receive credit for their work.”*

Another alternative to the Proposal would be to require in the Compensation Discussion and Analysis section of the proxy statement to disclose whether the issuer’s EPS-based executive compensation plan accounts for projected or actual repurchase activity. This type of disclosure would specifically target issuers that utilize EPS bonuses and could be accomplished with relatively low-cost rulemaking or the issuance of interpretive guidance. Unfortunately, the staff of the Commission fails to consider the deterrent value of requiring issuers to describe how compensation committees adjust EPS-based bonuses for repurchases.

The baseline of the EA does not quantify the percentage of issuers’ annual and long-term incentive plans that is tied to EPS and how it correlates with buybacks. The Commission already subscribes or could easily subscribe to academic databases, such as the Incentive Lab by Institutional Shareholder Services, which provide detailed data on executive compensation for members of the Standard and Poor’s (“S&P”) 1500, including EPS-based performance awards.

The EA also fails to quantify (1) how many issuers used share repurchases to trigger an executive bonus that would not have been earned without repurchasing shares and (2) the total executive compensation awarded from potentially opportunistic buybacks. Similar concerns were expressed in the context of the relation between share repurchases and executive pay for issuers listed in the United Kingdom (“UK”). In response, PricewaterhouseCoopers (“PwC”) published a 152-page analysis under the advisory of Professor Alex Edmans in 2019 and presented these results to the UK government.<sup>8</sup> The PwC study found no significant relation between share repurchases and either the existence of an EPS bonus or the proportion of executive incentive awards linked to EPS.

In fact, the PwC report found no evidence of a single repurchase that triggered an EPS-based bonus. Specifically, the PwC study conducted a threshold analysis to compare issuers’ EPS performance had they not repurchased shares to their EPS with the repurchase. During the period 2007 to 2017, the analysis found that:

8. See PwC. (2019, July). *Share repurchases, executive pay and investment*. Report to Department for Business, Energy & Industrial Strategy, BEIS Research Paper 2019/011, <https://www.pwc.co.uk/services/economics/insights/share-repurchases-executive-pay-and-investment.html>.



*“No firms in the sample would have been below the EPS target had they not repurchased shares and above the EPS target with the share repurchase. In other words, no firm successfully used share repurchases to beat its EPS target.”<sup>9</sup>*

The Commission should replicate the threshold analysis of the PwC study for SEC reporting issuers and provide a full quantification of the fraction and transaction value of repurchases that successfully resulted in meeting an EPS target to achieve an executive bonus.

The PwC report also points out that even if EPS compensation targets incentivize insiders to repurchase shares, this outcome could be consistent with shareholder value maximization. For example, when an issuer chooses to return surplus cash to shareholders rather than spending this cash on inefficient investment or expenditures, the EPS target has encouraged efficient investment in repurchases, which is consistent with shareholder value maximization. Such behavior will destroy shareholder value only if an issuer engages in repurchases when it does not have surplus cash and does so by cutting investments in research and development

(“R&D”) or other value-enhancing investments. As we discuss below in Section I.C. of this addendum, the EA fails to cite numerous studies showing that repurchases do not sacrifice issuer investment.

The EA also omits several important studies that provide empirical evidence that fails to support the notion of using repurchases to boost executive compensation through EPS bonuses. For example, Bargeron, Kulchania, and Thomas (2011) find no evidence of a correlation between EPS-based bonuses and the types of repurchase programs that rapidly boost EPS.<sup>10</sup> Bennett, Bettis, Gopalan, and Milbourn (2017) examine issuers that just meet EPS compensation targets and find no evidence that share repurchases are the mechanism that facilitates this outcome.<sup>11</sup> Similarly, Bens, Nagar, Skinner, and Wong (2003) present evidence that repurchases are used to offset dilution from employee stock options rather than achieve an EPS-based cash bonus.<sup>12</sup>

Importantly, even if some repurchases are used to hit EPS targets, investors appear to “see through” this behavior under the existing quarterly repurchase disclosure regime. For example, two studies that are cited in the Proposal—Hribar, Jenkins, and Johnson (2006) and Kurt (2018)<sup>13</sup>—

9. By underlining key points, this excerpt replicates the emphasis of the PwC report.
10. See Bargeron, L., Kulchania, M., & Thomas, S. (2011). Accelerated share repurchases. *Journal of Financial Economics*, 101(1), 69-89. This study argues that if EPS bonus incentives were large, insiders would prefer an accelerated stock repurchase (“ASR”) program over an open market repurchase program because the accretion to EPS would be accounted for immediately; however, regression evidence in their study reveals no statistical relation between ASR programs and EPS-based bonuses. We note that the Commission’s 2020 Staff Study references this study, but it is omitted from the EA.
11. See Bennett, B., Bettis, J. C., Gopalan, R., & Milbourn, T. (2017). Compensation goals and firm performance. *Journal of Financial Economics*, 124(2), 307-330. This study provides causal evidence on the relation between EPS bonuses and buybacks by examining issuers that just meet EPS compensation targets to those that just miss. The authors show that firms that just meet EPS compensation targets have lower R&D and abnormal accruals, which indicates that some issuers reduce investment or adjust reported earnings to hit a compensation target. Importantly, there is no significant difference in share repurchases for these samples. These findings imply that, while some issuers might take opportunistic actions to hit performance targets, there is no evidence that share repurchases are a mechanism that facilitates those actions.
12. See Bens, D. A., Nagar, V., Skinner, D. J., & Wong, M. F. (2003). Employee stock options, EPS dilution, and stock repurchases. *Journal of Accounting and Economics*, 36(1-3), 51-90. This study reports a correlation between EPS and repurchase decisions; however, the authors find that EPS-driven cash compensation effects are not the underlying source of this relation. Instead, their evidence shows that some issuers use repurchases in an attempt to offset dilution from employee stock options in order to sustain prior growth rates in reported EPS.
13. See Hribar, P., Jenkins, N. T., & Johnson, W. B. (2006). Stock repurchases as an earnings management device. *Journal of Accounting and Economics*, 41(1-2), 3-27; and Kurt, A. C. (2018). Managing EPS and signaling undervaluation as a motivation for repurchases: The case of accelerated share repurchases. *Review of Accounting and Finance*, 17(4), 453-481.

show that the market considers whether repurchases could help the issuer hit an EPS target. In other words, under the current quarterly reporting regime, investors are not fooled by repurchases that might be used as an earnings management device.

Overall, the empirical evidence largely supports the conclusions of the SEC's 2020 Staff Study, which states the following:

*“Collectively, these findings potentially suggest that most repurchase activity does not represent an effort to artificially inflate stock prices or influence the value of option-based or EPS-linked compensation.”*

## C. Repurchases and Investment

The Proposal's introduction (but not the EA) notes that some commentators view repurchases as harmful because they divert cash to shareholders that could have been used to fund investment or increase employee compensation. We note that these comments are made by (1) Senator Elizabeth Warren and (2) William Lazonick in a 2015 essay that assesses a statement by then presidential candidate Hillary Clinton.<sup>14</sup>

Academics, including those referenced prominently in the Proposal such as Professor Jesse Fried, have questioned this notion. In a series of academic studies, essays, and blog posts, Professor Fried and

Professor Charles C.Y. Wang argue that this “accepted wisdom” is “flat out wrong.”<sup>15</sup>

Moreover, peer-reviewed academic research by Fried and Wang (2019) refutes the superficial arguments in the Lazonick essays that share repurchases harm issuers and its employees. Unfortunately, none of these discussions are in the EA.

In Lazonick (2015), the author self-cites a prior 2014 *Harvard Business Review* article titled “Profits Without Prosperity,” which argues that repurchases erode employee income gains, reduce employment levels, and limit issuers' investment in long-term projects.<sup>16</sup> Lazonick's thesis is based on estimates that issuers in the S&P 500 index used 54% of earnings for repurchases and 37% of earnings for dividends over 2003 to 2012. Lazonick (2014) argues that this leaves only 9% of earnings to invest in future growth or employees.

Despite citing the Fried testimony three times, the Proposal fails to mention research by this author demonstrating that repurchases do not sacrifice investment nor do they harm employees. For example, Fried and Wang (2018, 2019, 2021) present empirical evidence that issuers recover approximately 80% of the cash used for dividends and buybacks by engaging in new equity capital formation.<sup>17</sup> Thus, the net cash returned to shareholders is less than half the amount claimed by buyback critics such as Lazonick.

14. See Lazonick, W. (2015, August 11). Clinton's proposals on stock buybacks don't go far enough. *Harvard Business Review*. We note that the link to the Lazonick essay in the Proposal is incorrectly cited as <https://hbr.org/2015/08/clintons-proposals-on-stock-buybacks-dont-go-far-enough>. The correct link is available at <https://hbr.org/2015/08/clintons-proposals-on-stock-buybacks-dont-go-far-enough>.

15. See Fried, J., & Wang, C.C.Y. (2019, March 13). *Democratic senators and the buyback boogeyman*. Harvard Law School Forum on Corporate Governance, <https://corpgov.law.harvard.edu/2019/03/13/democratic-senators-and-the-buyback-boogeyman/>.

16. See Lazonick, W. (2014, September). Profits without prosperity. *Harvard Business Review*, 46-55, <https://hbr.org/2014/09/profits-without-prosperity>.

17. See Fried, J. M., & Wang, C. C. (2018, March-April). Are buybacks really shortchanging investment? *Harvard Business Review*, 88-95, <https://hbr.org/2018/03/are-buybacks-really-shortchanging-investment>; Fried, J. M., & Wang, C. C. (2019). Short-termism and capital flows. *Review of Corporate Finance Studies*, 8(1), 207-233; and Fried, J. M., & Wang, C. C. (2021). Short-termism, shareholder payouts and investment in the EU. *European Financial Management*, 27(3), 389-413.

Fried and Wang also note that estimating the payout ratio as a percentage of net income—as in Lazonick (2014)—fails to recognize the basic, fundamental accounting principle that net income already deducts R&D expenditures, which they estimate accounts for 25% to 30% of net income. Fried and Wang (2018, 2019, 2021) highlight flaws in viewing stock buybacks and investments as substitutes. The authors' evidence indicates that issuers can make all of the investment in capital expenditures and R&D that managers deem necessary—while still being able to repurchase shares from *surplus* cash. Thus, buybacks do not shortchange investments in the company and its employees.

The EA also misses an opportunity to discuss other literature on this topic. For example, Asness, Hazelkorn, and Richardson (2018) present empirical evidence that repurchases do not mechanically grow earnings or reduce investment.<sup>18</sup>

Edmans (2017, 2020) also argues that issuers do not systematically misuse cash for repurchases. He contends that such claims put the “cart before the horse” since issuers first allocate cash to investment based on projects that generate a return higher than the issuers' cost of capital.<sup>19</sup> Only surplus cash is used for repurchases, which is consistent with survey evidence in Brav, Graham, Harvey, and Michaely (2005) that issuers fund repurchases with residual cash flow after funding investment. Although the EA cites the 2005 Brav et al. study four times, it fails to point out that this survey provides

evidence that pushes back on the notion that repurchases sacrifice investment.

In one of the few discussions of the relation between repurchase and investment or employees, Footnote 80 of the EA points to a study by Almeida, Fos, and Kronlund (2016):

*“EPS-motivated repurchases are associated with reductions in employment and investment, and a decrease in cash holdings” and concluding that “managers are willing to trade off investments and employment for stock repurchases that allow them to meet analyst EPS forecasts.”*

Yet, a more thorough assessment of this study would uncover their statement that “[i]t is clear that EPS-induced repurchases are on average not detrimental to shareholder value or subsequent performance.”

The EA also fails to recognize the findings of the Commission's own 2020 Staff Study, which clearly notes in its conclusion that “most repurchases are conducted by companies with excess cash relative to investment opportunities.”

Moreover, although the Proposal cites Congressional testimony by Professor Jesse Fried numerous times, it fails to consider other testimony provided during the same subhearing. For example, Professor Craig Lewis opines that:<sup>20</sup>

*“Opponents of share buyback programs typically argue that they: 1) artificially inflate share price, 2)*

18. See Asness, C., Hazelkorn, T., & Richardson, S. (2018). Buyback derangement syndrome. *Journal of Portfolio Management*, 44(5), 50-57.  
19. See Edmans, A. (2017, September 15). The case for stock buybacks. *Harvard Business Review*; and Edmans, A. (2020). *Grow the pie: How great companies deliver both purpose and profit*. Cambridge University Press.  
20. See Lewis, C. M. (2019, October 17). Examining corporate priorities: The impact of stock buybacks on workers, communities, and investment, Testimony of Craig M. Lewis before the U.S. House of Representatives Subcommittee on Investor Protection, Entrepreneurship, and Capital Markets, <https://financialservices.house.gov/uploadedfiles/hhrg-116-ba16-wstate-lewisc-20191017.pdf>.



*crowd out investment, 3) result from managerial short-termism, and 4) disproportionately benefit the wealthy and corporate insiders. I argue that these conjectures are either not supported by empirical analysis or are based on misconceptions about the how share repurchase programs actually operate.”*

Professor Lewis provides empirical evidence demonstrating the repurchases are an efficient method for distributing surplus cash.<sup>21</sup>

Overall, the EA fails to deliver robust discussion of the economic implications of buybacks for corporate investment.

## **D. Repurchases to Manipulate Markets**

In the Proposal, the Commission notes that:

*“With respect to share repurchase announcements, some have suggested that managers may take advantage of positive stock price reactions to non-binding repurchase announcements and use disingenuous repurchase announcements to manipulate share prices.”*

As evidence of these allegations of market manipulation, the Proposal cites a study by Chen, Ikenberry, Wang, and Lee (2010), who note that some issuers misled investors by announcing share repurchases that the issuer did not execute. This study examines a sample

period that predates the Commission’s 2003 requirement that issuers report aggregated monthly repurchase activity on a quarterly basis (Item 703).<sup>22</sup> Such actions could be considered “cheap talk,” where issuers might announce a buyback authorization that they do not intend to execute in hopes that it will lead to short-term stock price appreciation. However, the 2010 Chen et al. paper clearly states:

*“Moreover, as we subdivide the evidence further, we also conclude that the total number of buybacks where managers may have been intending to mislead investors, while non-zero, also appears to be limited.”*

This finding does not represent a systematic market failure that requires the formal alteration of disclosure obligations. Moreover, the study is incapable of determining if there was an intent to deceive investors or whether changing business conditions now favor the execution of a repurchase program. At a minimum, the EA should replicate the approach in this study—a duration of 21 years—to determine if these limited instances of misleading investors continue to occur after the 2003 changes in repurchase disclosure frequency.

In fact, claims that repurchases are conducted to manipulate stock prices are inconsistent with the conclusions of the 2020 SEC Staff Study (p. 45), which states that:

21. See Lewis, C. M. (2019). The economics of share repurchase programs. Report commissioned by the Association of Mature American Citizens, <https://amac.us/wp-content/uploads/2019/02/The-Economics-of-Share-Repurchase-Programs1.pdf>.

22. See Chan, K., Ikenberry, D. L., Lee, I., & Wang, Y. (2010). Share repurchases as a potential tool to mislead investors. *Journal of Corporate Finance*, 16(2), 137-158; and *Purchases of Certain Equity Securities by the Issuer and Others*, Release No. 33-8335 (Nov. 10, 2003) [68 FR 64952 (Nov. 17, 2003)].

*“[R]epurchase announcements are accompanied by stock price increases. This announcement effect does not dissipate over time, as one would expect if repurchases were based on efforts to manipulate share prices.”*

Given the scarce evidence that share repurchase announcements are used to mislead markets—and that the Commission’s own staff found no cross-sectional evidence of manipulative buyback activity—the EA fails to demonstrate a market failure that warrants the proposed rulemaking.<sup>23</sup>

## II. Impact of More Frequent Disclosure on Information Asymmetry

The Proposal describes how asymmetric information might be reduced by increasing buyback disclosure frequency but does not explain why the current level of transparency would be considered a market failure. The Proposal notes:

*“[A] lack of timely disclosure could contribute to information asymmetries between investors and issuers/insiders.”*

The Proposal then conjectures that a lack of timely disclosure could lead to the market failure of *asymmetric information* between investors and issuers or insiders. The only substantive discussion of information asymmetry occurs in the introduction and is, once again, missing from the EA:

*“In particular, we are concerned that, because issuers are repurchasing their own securities, asymmetries may exist between issuers and affiliated purchasers and investors with regard to information about the issuer and its*

*future prospects. This, in turn, could exacerbate some of the potential harms associated with issuer repurchases. To help address these information asymmetries, we are proposing a new disclosure form and additional disclosure requirements about issuer repurchases.”*

The EA fails to note that asymmetric information is present in all market settings and can hardly be characterized as a market failure. Without some level of asymmetric information, there would be fewer incentives to invest in information collection, resulting in less price discovery and a corresponding reduction in liquidity (see, e.g., Grossman and Stiglitz, 1980).<sup>24</sup>

The EA argues that more frequent disclosure of repurchase activity might reduce information asymmetries between investors and issuers/insiders, which could result in greater stock price liquidity and a lower cost of equity capital. The EA posits:

23. Although the EA does not present widespread empirical evidence of market manipulation through repurchase cheap talk, it notes in Footnote 79 that even the highest concerns of manipulation do not prevent the positive effect of repurchases on price efficiency. See Busch, P., & Obernberger, S. (2017). Actual share repurchases, price efficiency, and the information content of stock prices. *Review of Financial Studies*, 30(1), 324-362.

24. See Grossman, S. J., & Stiglitz, J. E. (1980). On the impossibility of informationally efficient markets. *American Economic Review*, 70(3), 393-408.

*“We expect the proposed amendments to have positive effects on efficiency and capital formation. In particular, any decrease in the information asymmetry between issuers and investors about the value of an issuer’s securities as a result of the disclosure could lead to more informationally efficient prices, and more efficient capital allocation in investor portfolios. Decreased information asymmetries between investors and issuers as a result of the enhanced disclosure under the proposed amendments could also incrementally facilitate capital formation and reduce the cost of capital. It is difficult to determine the incremental contribution of the proposed amendments and thus the magnitude of this potential benefit.”*

Although some degree of information asymmetry will always exist between issuers and investors, the EA does not demonstrate that more frequent repurchase disclosures will have a large enough effect on capital costs or liquidity to outweigh any direct or indirect costs of additional disclosure burdens.<sup>25</sup> For asymmetric information to be considered a market failure, the Commission would need to robustly demonstrate that insiders act in their own self-interest to produce an outcome that is economically harmful to other stakeholders. The lack of such evidence likely explains the use of qualifying language (e.g., “could lead to”) in the EA’s description of potential benefits.

Within the EA, the Commission cites three studies linking decreases in information asymmetry to lower capital costs (Easley and O’Hara, 2004;<sup>26</sup> Botosan, 2006; and Lambert, Leuz, and Verrecchia, 2007). These studies are largely cross-sectional analyses that make general inferences about reductions in asymmetric information. While informative, these studies are not dispositive in the sense that they do not specifically discuss share repurchase activity. The question that the EA needs to address is whether similar effects are associated with more frequent and timely repurchase disclosures.

To this end, the EA claims it is too difficult to quantify the incremental benefits of potential reductions in asymmetric information stemming from the proposed amendments. As such, it fails to present quantitative evidence to support the conjecture that the net effect would reduce issuers’ cost of capital. There are, however, analyses the Commission could have conducted to address the necessity of more frequent disclosure of share repurchase activity. For example, the Commission could examine how investors react to more frequent repurchase disclosure across or within jurisdictions outside the United States. The staff could quantify the marginal impact of repurchase disclosure on liquidity or capital costs. Many academic studies use market and trading-based measures of liquidity—such as Amihud’s Illiquidity—to empirically measure the impact of incremental issuer disclosures on liquidity.<sup>27</sup> In fact, the studies cited in

25. At the margin, regulatory mandated transparency reduces incentives to engage in price discovery and could have the unintended consequence of reduced liquidity. Following Grossman and Stiglitz (1980), markets would indeed be more efficient with respect to information related to share repurchases but could have the countervailing effect of being less efficient with respect to other information that might have been discovered had investors been willing to invest in independent research. Without quantification, it is difficult to assess which consideration dominates.

26. The paper by Easley and O’Hara is incorrectly cited in the Proposal as being published in 2005. It was published in the August 2004 issue of the *Journal of Finance*.

27. See, for example, Balakrishnan, K., Billings, M. B., Kelly, B., & Ljungqvist, A. (2014). Shaping liquidity: On the causal effects of voluntary disclosure. *Journal of Finance*, 69(5), 2237-2278. In this study, the authors link voluntary management earnings forecasts to decreases in Amihud’s trading-based measure of illiquidity. For a discussion on this measure, see Amihud, Y. (2002). Illiquidity and stock returns: Cross-section and time-series effects. *Journal of Financial Markets*, 5(1), 31-56.

Footnote 105 utilize measures of information asymmetry and liquidity, such as the bid-ask spread (Amihud and Mendelson, 1986) and the probability of an informed trade, or “PIN” (Duarte and Young, 2009).

Alternatively, the EA could have used the quasi-natural experiments related to more frequent disclosures in other jurisdictions. For example, the EA notes that “a number of foreign jurisdictions require disclosure of greater frequency and timeliness, relative to current U.S. requirements.” The EA references studies of other jurisdictions with monthly (France) and daily (Hong Kong) repurchase disclosure requirements (Ginglinger and Hamon, 2007; Brockman and Chung, 2001). At a minimum, the Commission could compare liquidity measures of similarly sized issuers operating in the same industry that conduct buybacks across countries with quarterly (U.S.), monthly (France), and daily (“UK” or Hong Kong) repurchase disclosure requirements. Such an analysis would help establish whether higher frequency disclosures have a measurable influence on market-based measures of liquidity and information asymmetry.

Another possible avenue for quantification that the Commission does not consider would be to estimate the incremental information associated with next-day reporting for firms in jurisdictions requiring such disclosure—because the information contained in order flow on the day that a repurchase occurs would be impounded into stock prices. Next-day disclosure would be expected to resolve residual uncertainty regarding the identity of the parties. Such an analysis would quantify

the marginal impact of next-day disclosure requirements. In fact, the EA implicitly recognizes that the incremental information associated with share repurchases may already be reflected in shares prices and that the disclosure itself may not convey economically important information:

*“The benefit of the information contained in a disclosure of recent repurchase activity would be lower to the extent that large issuer repurchases already have a price impact, resulting in price discovery and indirect revelation of information to the market, even in the absence of daily disclosure.”*

By ignoring this issue, the EA fails to quantify the benefit of the proposed amendments, even though the SEC had the ability and resources to directly analyze the economic impact of more frequent disclosure. In fact, Footnote 89 of the EA admits that a study by Brockman and Chung (2001) shows that variation in repurchase frequency does not appear to influence the impact of share repurchases on liquidity.<sup>28</sup>

*“[T]hey compare their findings with those from a foreign regime with a different reporting frequency and extrapolate that “[t]he similarity of our results to the results for the Hong Kong market indicates that the choice of whether to require firms to disclose repurchases one day versus one month after execution does not affect the impact of share repurchases on liquidity”; while the study further concludes that this suggests “that there are limited benefits from requiring greater post-trade transparency of*

28. See Brockman, P., & Chung, D. Y. (2001). Managerial timing and corporate liquidity: Evidence from actual share repurchases. *Journal of Financial Economics*, 61(3), 417-448.

*share repurchases, the conclusion that greater disclosure of repurchases would have limited benefits, in our view, does not follow from the similarity of the effects of repurchases on liquidity in the two countries referenced in the study. As a further caveat, there are potentially significant comparability issues in evaluating data from different jurisdictions, which have varying legal and market conditions for repurchases.”*

Rather than provide this comparison, the EA simply caveats that variation in legal jurisdictions lead to comparability issues.<sup>29</sup> However, such differences could be addressed in a regression model that examines (or matches) on variation in the properties of periodic and ongoing disclosure obligations.<sup>30</sup>

The EA also notes that numerous studies attest market quality and liquidity are higher during repurchase periods under the current system of quarterly reporting of repurchase activity (e.g., Busch and Obernberger, 2017; Hillert et al. 2016). Thus, substantial evidence cited in the EA already calls into question the notion that greater repurchase disclosure frequency will necessarily manifest into material stock liquidity improvements, because the information contained in order flow may subsume much of the information that would be contained in more frequent disclosure.

In support of this notion, recent work by Lewis and White (2021) shows a large, positive impact of buybacks on liquidity during repurchase periods.<sup>31</sup> Lewis and White study a large sample of more than 10,000 U.S. companies over 17 years and find that issuers utilize repurchases to increase stock liquidity and reduce volatility, which stabilizes stock prices. They find that buybacks significantly reduce both realized and anticipated return volatility. The authors’ analysis shows that buybacks generate an economically large benefit for all investors, including retail investors who saved between \$2.1 billion and \$4.2 billion in transaction and price impact costs due to buybacks since 2004. They find that issuers utilize market-based estimates of future volatility to inform their buyback decisions and that when volatility is expected to be higher, issuers increase their buyback intensity to stabilize stock prices, thereby reducing costs for retail investors. Issuers respond to exogenous variation in economic policy uncertainty by strengthening their buyback activities. Issuers also expand buyback activity during critical periods when current investors sell relatively large amounts of shares. Thus, managers use buybacks to actively mitigate price pressure during periods of net selling.

The EA also fails to consider whether daily disclosure could result in so many repurchase filings that it essentially creates “noise” in the disclosure regime.

29. The following discussion is found on page 47 of the Proposal: “While we could not find studies analyzing empirically how the introduction of more frequent disclosure affected buybacks in foreign countries, we also were not able to find evidence that such disclosure requirements adversely affected shareholder value or market participants. The broad application of a disclosure requirement to issuers in a given jurisdiction makes it hard to formulate an empirical setting, such as a quasi-natural experiment, that effectively addresses the question of how the introduction of the disclosure affected buybacks and issuers that undertake them. Moreover, there are potentially significant differences between jurisdictions with respect to other repurchase regulations, market structure, taxation, composition of the subset of issuers that undertake repurchases, and the subset of investors in such issuers, complicating cross-country comparisons or extrapolation from international studies to the U.S. setting.”

30. For example, see the approach in Boone, A. L., Schumann-Foster, K., & White, J. T. (2021). Ongoing SEC disclosures by foreign firms. *The Accounting Review*, 96(3), 91-120.

31. See Lewis, C. M., & White, J. T. (2021). Corporate liquidity provision and share repurchase programs. U.S. Chamber of Commerce: Center for Capital Markets Competitiveness, Fall 2021. Available at [https://www.centerforcapitalmarkets.com/wp-content/uploads/2021/09/CCMC\\_Stock-Buybacks\\_WhitePaper\\_10.2.21.pdf](https://www.centerforcapitalmarkets.com/wp-content/uploads/2021/09/CCMC_Stock-Buybacks_WhitePaper_10.2.21.pdf).



This concern should be considered because prior academic work notes that “too much disclosure can be as costly as too little disclosure.”<sup>32</sup>

Taken together, the EA fails to robustly demonstrate the conjectured benefits of greater repurchase disclosure

frequency on stock liquidity, capital costs, and capital formation; instead, the EA provides a subjective discussion that fails to fully recognize the role of price discovery and existing studies that empirically link repurchase activity to greater liquidity under the current quarterly repurchase disclosure regime.

### III. Summary of Economic Analysis

In this comment letter, we evaluate the Proposal to increase disclosure requirements for share repurchases. Specifically, we analyze the accompanying EA to assess whether it presents a robust cost-benefit analysis that objectively informs the Proposal.

As we demonstrate above, the EA fails to convincingly demonstrate that the Proposal has merit. The EA neglects to demonstrate a market failure that requires regulation; inaccurately or incompletely characterizes the baseline; and omits important citations of studies that could inform the proposed rulemaking. Moreover, the Proposal relies heavily on an analysis by former SEC Commissioner Robert Jackson that contains empirical flaws.

The EA also largely fails to quantify the likely economic impact of the Proposal and instead argues that these analyses are infeasible due to data limitations and that “much of the discussion remains qualitative in nature.” Although this is a common problem that Commission

staff must confront when developing EAs, our comment letter identifies many straightforward methods to quantify the alleged market failures and the potential incremental benefits of the Proposal. Further, we highlight instances where the Commission’s own 2020 SEC Staff Study provides such quantification, which explicitly refutes many of the ostensible market failures referenced in the Proposal.

Taken together, the Proposal and accompanying EA fail to present robust evidence of a market failure attributable to the current disclosure requirements for share repurchases. We conclude that the Commission has failed to establish a need for additional rulemaking that deviates from the status quo.

32. See Core, J. E. (2001). A review of the empirical disclosure literature: Discussion. *Journal of Accounting and Economics*, 31(1-3), 441-456. Core notes that too much disclosure can result in stock price volatility that attracts high-frequency traders and cites Bushee and Noe (2000). See Bushee, B. J., & Noe, C. F. (2000). Corporate disclosure practices, institutional investors, and stock return volatility. *Journal of Accounting Research*, 38, 171-202.

# IV. Appendix A. Studies Cited in Proposal

Topic #	Citation Topic in Proposal	Study #	Study	Location (Footnote, or FN)	Section
1	Buybacks used by insiders to influence stock prices	1	Chan, K., Ikenberry, D. L., Lee, I., & Wang, Y. (2010). Share repurchases as a potential tool to mislead investors. <i>Journal of Corporate Finance</i> , 16(2), 137-158.	FN14, FN79, FN81	I. Introduction; IV. EA
1	Buybacks used by insiders to influence stock prices	2	Palladino, L. (2020). Do corporate insiders use stock buybacks for personal gain? <i>International Review of Applied Economics</i> , 34(2), 152-174.	FN15, FN81	I. Introduction; IV. EA
1	Buybacks used by insiders to influence stock prices	3	Palladino, L. & Lazonick, W. (2021, May). Regulation Stock Buybacks: The \$6.3 Trillion Question, <i>Roosevelt Institute Working Paper</i> .	FN15, FN17	I. Introduction
1	Buybacks used by insiders to influence stock prices	4	SEC Staff Response to Congress: Negative Net Equity Issuance, December 2020.	FN58, FN59, FN60, FN63, FN70, FN80	IV. EA
1	Buybacks used by insiders to influence stock prices	5	Jackson, Jr., R. J., (2018, June 11). <i>Stock buybacks and corporate cashouts</i> , Speech by Commissioner Jackson before the Center for American Progress.	FN15, FN17	I. Introduction
2	Buyback disclosure informs market participants	6	Bonaimé, A. A. (2015). Mandatory disclosure and firm behavior: Evidence from share repurchases. <i>The Accounting Review</i> , 90(4), 1333-1362.	FN27, FN79, FN86, FN99	II. Proposed Amendments; IV. EA
3	Broad study of buybacks	7	Grullon, G., & Ikenberry, D. L. (2000). What do we know about stock repurchases? <i>Journal of Applied Corporate Finance</i> , 13(1), 31-51.	FN28	II. Proposed Amendments
3	Broad study of buybacks	8	Farre-Mensa, J., Michaely, R., & Schmalz, M. (2014). Payout policy. <i>Annual Review of Financial Economics</i> , 6(1), 75-134.	FN58, FN64, FN70	IV. EA
4	Buybacks fluctuate during economic cycles	9	Campello, M., Graham, J. R., & Harvey, C. R. (2010). The real effects of financial constraints: Evidence from a financial crisis. <i>Journal of Financial Economics</i> , 97(3), 470-487.	FN60	IV. EA
4	Buybacks fluctuate during economic cycles	10	Dittmar, A. K., & Dittmar, R. F. (2008). The timing of financing decisions: An examination of the correlation in financing waves. <i>Journal of Financial Economics</i> , 90(1), 59-83.	FN60, FN66	IV. EA
4	Buybacks fluctuate during economic cycles	11	Floyd, E., Li, N., & Skinner, D. J. (2015). Payout policy through the financial crisis: The growth of repurchases and the resilience of dividends. <i>Journal of Financial Economics</i> , 118(2), 299-316.	FN60	IV. EA
5	Buybacks are less of a commitment than dividends	12	Healy, P. M., & Palepu, K. G. (1988). Earnings information conveyed by dividend initiations and omissions. <i>Journal of Financial Economics</i> , 21(2), 149-175.	FN61	IV. EA

Topic #	Citation Topic in Proposal	Study #	Study	Location (Footnote, or FN)	Section
5	Buybacks are less of a commitment than dividends	13	Michaely, R., Thaler, R. H., & Womack, K. L. (1995). Price reactions to dividend initiations and omissions: Overreaction or drift? <i>Journal of Finance</i> , 50(2), 573-608.	FN61	IV. EA
5	Buybacks are less of a commitment than dividends	14	Lee, B. S., & Mauck, N. (2016). Dividend initiations, increases and idiosyncratic volatility. <i>Journal of Corporate Finance</i> , 40, 47-60.	FN61	IV. EA
5	Buybacks are less of a commitment than dividends	15	Brav, A., Graham, J. R., Harvey, C. R., & Michaely, R. (2005). Payout policy in the 21st century. <i>Journal of Financial Economics</i> , 77(3), 483-527.	FN62, FN72, FN78, FN83	IV. EA
6	Buybacks substitute for dividends	16	Skinner, D. J. (2008). The evolving relation between earnings, dividends, and stock repurchases. <i>Journal of Financial Economics</i> , 87(3), 582-609.	FN63	IV. EA
6	Buybacks substitute for dividends	17	Grullon, G., & Michaely, R. (2002). Dividends, share repurchases, and the substitution hypothesis. <i>Journal of Finance</i> , 57(4), 1649-1684.	FN63	IV. EA
7	Buybacks signal stock is undervalued	18	Vermaelen, T. (1981). Common stock repurchases and market signalling: An empirical study. <i>Journal of Financial Economics</i> , 9(2), 139-183.	FN65	IV. EA
7	Buybacks signal stock is undervalued	19	Vermaelen, T. (1984). Repurchase tender offers, signaling, and managerial incentives. <i>Journal of Financial and Quantitative Analysis</i> , 19(2), 163-181.	FN65	IV. EA
7	Buybacks signal stock is undervalued	20	Constantinides, G. M., & Grundy, B. D. (1989). Optimal investment with stock repurchase and financing as signals. <i>Review of Financial Studies</i> , 2(4), 445-465.	FN65	IV. EA
7	Buybacks signal stock is undervalued	21	Hausch, D. B., & Seward, J. K. (1993). Signaling with dividends and share repurchases: A choice between deterministic and stochastic cash disbursements. <i>Review of Financial Studies</i> , 6(1), 121-154.	FN65	IV. EA
7	Buybacks signal stock is undervalued	22	McNally, W. J. (1999). Open market stock repurchase signaling. <i>Financial Management</i> , 55-67.	FN65	IV. EA
7	Buybacks signal stock is undervalued	23	Ofer, A. R., & Thakor, A. V. (1987). A theory of stock price responses to alternative corporate cash disbursement methods: Stock repurchases and dividends. <i>Journal of Finance</i> , 42(2), 365-394.	FN65	IV. EA
7	Buybacks signal stock is undervalued	24	Persons, J. C. (1997). Heterogeneous shareholders and signaling with share repurchases. <i>Journal of Corporate Finance</i> , 3(3), 221-249.	FN65	IV. EA
8	Stock price changes after buybacks	25	Dittmar, A., & Field, L. C. (2015). Can managers time the market? Evidence using repurchase price data. <i>Journal of Financial Economics</i> , 115(2), 261-282.	FN66, FN82, FN84	IV. EA



Topic #	Citation Topic in Proposal	Study #	Study	Location (Footnote, or FN)	Section
8	Stock price changes after buybacks	26	Ben-Rephael, A., Oded, J., & Wohl, A. (2014). Do firms buy their stock at bargain prices? Evidence from actual stock repurchase disclosures. <i>Review of Finance</i> , 18(4), 1299-1340.	FN66, FN84	IV. EA
8	Stock price changes after buybacks	27	Chan, K., Ikenberry, D. L., & Lee, I. (2007). Do managers time the market? Evidence from open-market share repurchases. <i>Journal of Banking &amp; Finance</i> , 31(9), 2673-2694.	FN66, FN85	IV. EA
8	Stock price changes after buybacks	28	Cook, D. O., Krigman, L., & Leach, J. C. (2004). On the timing and execution of open market repurchases. <i>Review of Financial Studies</i> , 17(2), 463-498.	FN66	IV. EA
8	Stock price changes after buybacks	29	Obernberger, S. (2014). The timing of actual share repurchases. Available at SSRN 2434214.	FN66	IV. EA
8	Stock price changes after buybacks	10	Dittmar, A. K., & Dittmar, R. F. (2008). The timing of financing decisions: An examination of the correlation in financing waves. <i>Journal of Financial Economics</i> , 90(1), 59-83.	FN60, FN66	IV. EA
8	Stock price changes after buybacks	30	Bonaimé, A. A., Hankins, K. W., & Jordan, B. D. (2016). The cost of financial flexibility: Evidence from share repurchases. <i>Journal of Corporate Finance</i> , 38, 345-362.	FN66	IV. EA
8	Stock price changes after buybacks	31	Evgeniou, T., de Fortuny, E. J., Nassuphis, N., & Vermaelen, T. (2018). Volatility and the buyback anomaly. <i>Journal of Corporate Finance</i> , 49, 32-53.	FN66	IV. EA
8	Stock price changes after buybacks	32	Barger, L., Bonaime, A., & Thomas, S. (2017). The timing and source of long-run returns following repurchases. <i>Journal of Financial and Quantitative Analysis</i> , 52(2), 491-517.	FN66	IV. EA
8	Stock price changes after buybacks	33	Peyer, U., & Vermaelen, T. (2009). The nature and persistence of buyback anomalies. <i>Review of Financial Studies</i> , 22(4), 1693-1745.	FN66	IV. EA
8	Stock price changes after buybacks	34	Fu, F., & Huang, S. (2016). The persistence of long-run abnormal returns following stock repurchases and offerings. <i>Management Science</i> , 62(4), 964-984.	FN66	IV. EA
9	Buybacks supply liquidity during selling pressure	35	Liu, H., & Swanson, E. P. (2016). Is price support a motive for increasing share repurchases? <i>Journal of Corporate Finance</i> , 38, 77-91.	FN67, FN81	IV. EA
10	Buybacks reduce agency costs of equity	36	Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. <i>American Economic Review</i> , 76(2), 323-329.	FN71	IV. EA
10	Buybacks reduce agency costs of equity	15	Brav, A., Graham, J. R., Harvey, C. R., & Michaely, R. (2005). Payout policy in the 21st century. <i>Journal of Financial Economics</i> , 77(3), 483-527.	FN62, FN72, FN78, FN83	IV. EA
10	Buybacks reduce agency costs of equity	37	Grullon, G., & Michaely, R. (2004). The information content of share repurchase programs. <i>Journal of Finance</i> , 59(2), 651-680.	FN73	IV. EA

Topic #	Citation Topic in Proposal	Study #	Study	Location (Footnote, or FN)	Section
11	Buybacks are flexible	38	Guay, W., & Harford, J. (2000). The cash-flow permanence and information content of dividend increases versus repurchases. <i>Journal of Financial Economics</i> , 57(3), 385-415.	FN74	IV. EA
11	Buybacks are flexible	39	Jagannathan, M., Stephens, C. P., & Weisbach, M. S. (2000). Financial flexibility and the choice between dividends and stock repurchases. <i>Journal of Financial Economics</i> , 57(3), 355-384.	FN74	IV. EA
11	Buybacks are flexible	40	Hoberg, G., & Prabhala, N. R. (2008). Disappearing dividends, catering, and risk. <i>Review of Financial Studies</i> , 22(1), 79-116.	FN75	IV. EA
12	Buybacks are tax efficient	41	Feng, L., Pukthuanthong, K., Thiengtham, D., Turtle, H. J., & Walker, T. J. (2013). The Effects of Cash, Debt, and Insiders on Open Market Share Repurchases. <i>Journal of Applied Corporate Finance</i> , 25(1), 55-63.	FN76	IV. EA
13	Buybacks are used to adjust target leverage	42	Baker, M., & Wurgler, J. (2002). Market timing and capital structure. <i>Journal of Finance</i> , 57(1), 1-32.	FN77	IV. EA
13	Buybacks are used to adjust target leverage	43	Ma, Y. (2019). Nonfinancial firms as cross-market arbitrageurs. <i>Journal of Finance</i> , 74(6), 3041-3087.	FN77	IV. EA
13	Buybacks are used to adjust target leverage	44	Hovakimian, A. (2004). The role of target leverage in security issues and repurchases. <i>Journal of Business</i> , 77(4), 1041-1072.	FN77	IV. EA
14	Buybacks are used for real earnings management	45	Burnett, B. M., Cripe, B. M., Martin, G. W., & McAllister, B. P. (2012). Audit quality and the trade-off between accretive stock repurchases and accrual-based earnings management. <i>The Accounting Review</i> , 87(6), 1861-1884.	FN78	IV. EA
14	Buybacks are used for real earnings management	15	Brav, A., Graham, J. R., Harvey, C. R., & Michaely, R. (2005). Payout policy in the 21st century. <i>Journal of Financial Economics</i> , 77(3), 483-527.	FN62, FN72, FN78, FN83	IV. EA
14	Buybacks are used for real earnings management	46	Hribar, P., Jenkins, N. T., & Johnson, W. B. (2006). Stock repurchases as an earnings management device. <i>Journal of Accounting and Economics</i> , 41(1-2), 3-27.	FN78	IV. EA
14	Buybacks are used for real earnings management	47	Kurt, A. C. (2018). Managing EPS and signaling undervaluation as a motivation for repurchases: The case of accelerated share repurchases. <i>Review of Accounting and Finance</i> .	FN78	IV. EA
14	Buybacks are used for real earnings management	48	Almeida, H., Fos, V., & Kronlund, M. (2016). The real effects of share repurchases. <i>Journal of Financial Economics</i> , 119(1), 168-185.	FN78, FN80	IV. EA
14	Buybacks are used for real earnings management	49	Ezekoye, O., Koller, T., & Mittal, A. (2016, April 29). How share repurchases boost earnings without improving returns, <i>McKinsey</i> .	FN78	IV. EA

Topic #	Citation Topic in Proposal	Study #	Study	Location (Footnote, or FN)	Section
15	Buybacks provide price support even when manipulation concerns are high	50	Busch, P., & Obernberger, S. (2017). Actual share repurchases, price efficiency, and the information content of stock prices. <i>Review of Financial Studies</i> , 30(1), 324-362.	FN79, FN81, FN85, FN98	IV. EA
16	Issuers do not complete all announced buybacks	1	Chan, K., Ikenberry, D. L., Lee, I., & Wang, Y. (2010). Share repurchases as a potential tool to mislead investors. <i>Journal of Corporate Finance</i> , 16(2), 137-158.	FN14, FN79, FN81	I. Introduction; IV. EA
16	Issuers do not complete all announced buybacks	51	Bonaimé, A. A. (2012). Repurchases, reputation, and returns. <i>Journal of Financial and Quantitative Analysis</i> , 47(2), 469-491.	FN79, FN95	IV. EA
16	Issuers do not complete all announced buybacks	6	Bonaimé, A. A. (2015). Mandatory disclosure and firm behavior: Evidence from share repurchases. <i>The Accounting Review</i> , 90(4), 1333-1362.	FN27, FN79, FN86, FN99	II. Proposed Amendments; IV. EA
16	Issuers do not complete all announced buybacks	52	Almazan, A., Banerji, S., & Motta, A. D. (2008). Attracting attention: Cheap managerial talk and costly market monitoring. <i>Journal of Finance</i> , 63(3), 1399-1436.	FN79	IV. EA
16	Issuers do not complete all announced buybacks	53	Bhattacharya, U., & E. Jacobsen, S. (2016). The share repurchase announcement puzzle: Theory and evidence. <i>Review of Finance</i> , 20(2), 725-758.	FN79	IV. EA
17	Buybacks are used to boost executive pay	54	Cheng, Y., Harford, J., & Zhang, T. T. (2015). Bonus-driven repurchases. <i>Journal of Financial and Quantitative Analysis</i> , 50(3), 447-475.	FN80, FN106	IV. EA
17	Buybacks are used to boost executive pay	55	Kim, S., & Ng, J. (2018). Executive bonus contract characteristics and share repurchases. <i>The Accounting Review</i> , 93(1), 289-316.	FN80	IV. EA
17	Buybacks are used to boost executive pay	56	Young, S., & Yang, J. (2011). Stock repurchases and executive compensation contract design: The role of earnings per share performance conditions. <i>The Accounting Review</i> , 86(2), 703-733.	FN80	IV. EA
17	Buybacks are used to boost executive pay	48	Almeida, H., Fos, V., & Kronlund, M. (2016). The real effects of share repurchases. <i>Journal of Financial Economics</i> , 119(1), 168-185.	FN78, FN80	IV. EA
17	Buybacks are used to boost executive pay	4	SEC Staff Response to Congress: Negative Net Equity Issuance, December 2020.	FN58, FN59, FN60, FN63, FN70, FN80	IV. EA
17	Buybacks are used to boost executive pay via EPS	57	Fields, R. (2016, September 20). Buybacks and the board: Director perspectives on the share repurchase revolution. <a href="https://corpgov.law.harvard.edu/2016/09/20/buybacks-and-the-board-director-perspectives-on-the-share-repurchase-revolution/">https://corpgov.law.harvard.edu/2016/09/20/buybacks-and-the-board-director-perspectives-on-the-share-repurchase-revolution/</a> .	FN80	IV. EA
18	Buybacks are used to boost executive pay via stock prices	1	Chan, K., Ikenberry, D. L., Lee, I., & Wang, Y. (2010). Share repurchases as a potential tool to mislead investors. <i>Journal of Corporate Finance</i> , 16(2), 137-158.	FN14, FN79, FN81	I. Introduction; IV. EA

Topic #	Citation Topic in Proposal	Study #	Study	Location (Footnote, or FN)	Section
18	Buybacks are used to boost executive pay via stock prices	58	Bonaimé, A. A., & Ryngaert, M. D. (2013). Insider trading and share repurchases: Do insiders and firms trade in the same direction? <i>Journal of Corporate Finance</i> , 22, 35-53.	FN81, FN82	IV. EA
18	Buybacks are used to boost executive pay via stock prices	59	Cziraki, P., Lyandres, E., & Michaely, R. (2021). What do insiders know? Evidence from insider trading around share repurchases and SEOs. <i>Journal of Corporate Finance</i> , 66, 101544.	FN81, FN82	IV. EA
18	Buybacks are used to boost executive pay via stock prices	2	Palladino, L. (2020). Do corporate insiders use stock buybacks for personal gain? <i>International Review of Applied Economics</i> , 34(2), 152-174.	FN15, FN81	I. Introduction; IV. EA
18	Buybacks are used to boost executive pay via stock prices	60	Ahmed (2017). Insider trading around open-market share repurchases. Working Paper.	FN81	IV. EA
18	Buybacks are used to boost executive pay via stock prices	61	Edmans, A., Goncalves-Pinto, L., Groen-Xu, M., & Wang, Y. (2018). Strategic news releases in equity vesting months. <i>Review of Financial Studies</i> , 31(11), 4099-4141.	FN81	IV. EA
18	Buybacks are used to boost executive pay via stock prices	62	Edmans, A., Fang, V. W., & Huang, A. (2017). <i>The long-term consequences of short-term incentives</i> . European Corporate Governance Institute (ECGI)-Finance Working Paper, (527).	FN81	IV. EA
18	Buybacks are used to boost executive pay via stock prices	35	Liu, H., & Swanson, E. P. (2016). Is price support a motive for increasing share repurchases? <i>Journal of Corporate Finance</i> , 38, 77-91.	FN67, FN81	IV. EA
18	Buybacks are used to boost executive pay via stock prices	50	Busch, P., & Obernberger, S. (2017). Actual share repurchases, price efficiency, and the information content of stock prices. <i>Review of Financial Studies</i> , 30(1), 324-362.	FN79, FN81, FN85, FN98	IV. EA
19	Buybacks are timed with insider purchases to send credible signal	25	Dittmar, A., & Field, L. C. (2015). Can managers time the market? Evidence using repurchase price data. <i>Journal of Financial Economics</i> , 115(2), 261-282.	FN66, FN82, FN84	IV. EA
19	Buybacks are timed with insider purchases to send credible signal	63	Babenko, I., Tserlukevich, Y., & Vedrashko, A. (2012). The credibility of open market share repurchase signaling. <i>Journal of Financial and Quantitative Analysis</i> , 47(5), 1059-1088.	FN82	IV. EA
19	Buybacks are timed with insider purchases to send credible signal	58	Bonaimé, A. A., & Ryngaert, M. D. (2013). Insider trading and share repurchases: Do insiders and firms trade in the same direction? <i>Journal of Corporate Finance</i> , 22, 35-53.	FN81, FN82	IV. EA
19	Buybacks are timed with insider purchases to send credible signal	59	Cziraki, P., Lyandres, E., & Michaely, R. (2021). What do insiders know? Evidence from insider trading around share repurchases and SEOs. <i>Journal of Corporate Finance</i> , 66, 101544.	FN81, FN82	IV. EA
20	Issuers conduct buybacks when prices are low	15	Brav, A., Graham, J. R., Harvey, C. R., & Michaely, R. (2005). Payout policy in the 21st century. <i>Journal of Financial Economics</i> , 77(3), 483-527.	FN62, FN72, FN78, FN83	IV. EA
20	Issuers conduct buybacks when prices are low	25	Dittmar, A., & Field, L. C. (2015). Can managers time the market? Evidence using repurchase price data. <i>Journal of Financial Economics</i> , 115(2), 261-282.	FN66, FN82, FN84	IV. EA

Topic #	Citation Topic in Proposal	Study #	Study	Location (Footnote, or FN)	Section
20	Issuers conduct buybacks when prices are low	26	Ben-Rephael, A., Oded, J., & Wohl, A. (2014). Do firms buy their stock at bargain prices? Evidence from actual stock repurchase disclosures. <i>Review of Finance</i> , 18(4), 1299-1340.	FN66, FN84	IV. EA
21	Buybacks improve stock liquidity	50	Busch, P., & Obernberger, S. (2017). Actual share repurchases, price efficiency, and the information content of stock prices. <i>Review of Financial Studies</i> , 30(1), 324-362.	FN79, FN81, FN85, FN98	IV. EA
21	Buybacks improve stock liquidity	28	Cook, D. O., Krigman, L., & Leach, J. C. (2004). On the timing and execution of open market repurchases. <i>Review of Financial Studies</i> , 17(2), 463-498.	FN66, FN85	IV. EA
21	Buybacks improve stock liquidity	64	Hillert, A., Maug, E., & Obernberger, S. (2016). Stock repurchases and liquidity. <i>Journal of Financial Economics</i> , 119(1), 186-209.	FN85	IV. EA
22	SEC regulations attenuate buyback behavior	6	Bonaimé, A. A. (2015). Mandatory disclosure and firm behavior: Evidence from share repurchases. <i>The Accounting Review</i> , 90(4), 1333-1362.	FN27, FN79, FN86, FN87, FN99	II. Proposed Amendments; IV. EA
23	Liquidity declines around buybacks	65	Ginglinger, E., & Hamon, J. (2007). Actual share repurchases, timing and liquidity. <i>Journal of Banking &amp; Finance</i> , 31(3), 915-938.	FN89	IV. EA
23	Liquidity declines around buybacks	66	Brockman, P., & Chung, D. Y. (2001). Managerial timing and corporate liquidity: Evidence from actual share repurchases. <i>Journal of Financial Economics</i> , 61(3), 417-448.	FN89	IV. EA
24	Buybacks correct market undervaluation	67	Zhang, H. (2005). Share price performance following actual share repurchases. <i>Journal of Banking &amp; Finance</i> , 29(7), 1887-1901.	FN90	IV. EA
24	Buybacks correct market undervaluation	68	Drousia, A., Episcopos, A., & Leledakis, G. N. (2019). Market reaction to actual daily share repurchases in Greece. <i>Quarterly Review of Economics and Finance</i> , 74, 267-277.	FN90	IV. EA
24	Buybacks correct market undervaluation	69	Bratli, D., & Rehman, O. (2015). The price impact and timing of actual share repurchases in Norway (Master's thesis).	FN90	IV. EA
25	Disclosing buyback rationale correlates with completion rates	51	Bonaimé, A. A. (2012). Repurchases, reputation, and returns. <i>Journal of Financial and Quantitative Analysis</i> , 47(2), 469-491.	FN79, FN95	IV. EA
26	Benefits of disclosing buyback rationale may or may not be limited due by boilerplate	70	Cazier, R. A., McMullin, J. L., & Treu, J. S. (2021). Are lengthy and boilerplate risk factor disclosures inadequate? An examination of judicial and regulatory assessments of risk factor language. <i>The Accounting Review</i> , 96(4), 131-155.	FN96	IV. EA
26	Benefits of disclosing buyback rationale may or may not be limited due by boilerplate	71	Nelson, K. K., & Pritchard, A. C. (2016). Carrot or stick? The shift from voluntary to mandatory disclosure of risk factors. <i>Journal of Empirical Legal Studies</i> , 13(2), 266-297.	FN96	IV. EA

Topic #	Citation Topic in Proposal	Study #	Study	Location (Footnote, or FN)	Section
26	Benefits of disclosing buyback rationale may or may not be limited due by boilerplate	72	Campbell, J. L., Chen, H., Dhaliwal, D. S., Lu, H. M., & Steele, L. B. (2014). The information content of mandatory risk factor disclosures in corporate filings. <i>Review of Accounting Studies</i> , 19(1), 396-455.	FN96	IV. EA
27	Mandatory disclosures affect issuer behavior	73	Chuk, E. C. (2013). Economic consequences of mandated accounting disclosures: Evidence from pension accounting standards. <i>The Accounting Review</i> , 88(2), 395-427.	FN99	IV. EA
27	Mandatory disclosures affect issuer behavior	6	Bonaimé, A. A. (2015). Mandatory disclosure and firm behavior: Evidence from share repurchases. <i>The Accounting Review</i> , 90(4), 1333-1362.	FN27, FN79, FN86, FN87, FN99	II. Proposed Amendments; IV. EA
28	Decreases in information asymmetry lowers the cost of capital	74	Easley, D., & O'Hara, M. (2004). Information and the cost of capital. <i>Journal of Finance</i> , 59(4), 1553-1583.	FN100	IV. EA
28	Decreases in information asymmetry lowers the cost of capital	75	Botosan, C. A. (2006). Disclosure and the cost of capital: What do we know? <i>Accounting and Business Research</i> , 36(Sup1), 31-40.	FN100	IV. EA
28	Decreases in information asymmetry lowers the cost of capital	76	Lambert, R., Leuz, C., & Verrecchia, R. E. (2007). Accounting information, disclosure, and the cost of capital. <i>Journal of Accounting Research</i> , 45(2), 385-420.	FN100	IV. EA
29	Price impact could be disproportionate for small issuers	77	Amihud, Y., & Mendelson, H. (1986). Liquidity and stock returns. <i>Financial Analysts Journal</i> , 42(3), 43-48.	FN105	IV. EA
29	Price impact could be disproportionate for small issuers	78	Duarte, J., & Young, L. (2009). Why is PIN priced? <i>Journal of Financial Economics</i> , 91(2), 119-138.	FN105	IV. EA
30	Disproportionate impact on small issuers offset by less frequent repurchases	79	Dittmar, A. K. (2000). Why do firms repurchase stock? <i>Journal of Business</i> , 73(3), 331-355.	FN106	IV. EA
30	Disproportionate impact on small issuers offset by less frequent repurchases	54	Cheng, Y., Harford, J., & Zhang, T. T. (2015). Bonus-driven repurchases. <i>Journal of Financial and Quantitative Analysis</i> , 50(3), 447-475.	FN80, FN106	IV. EA
30	Disproportionate impact on small issuers offset by less frequent repurchases	80	Jiang, Z., Kim, K. A., Lie, E., & Yang, S. (2013). Share repurchases, catering, and dividend substitution. <i>Journal of Corporate Finance</i> , 21, 36-50.	FN106	IV. EA

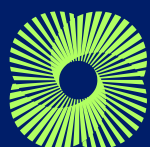
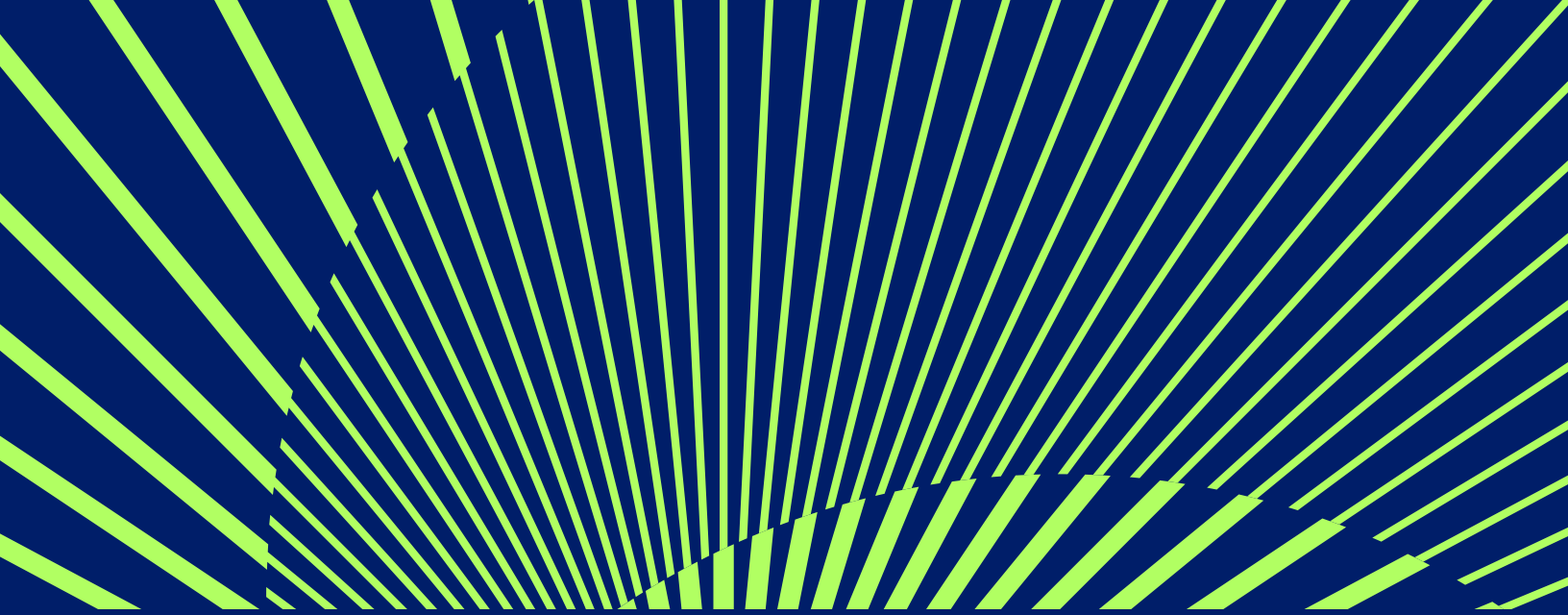


# V. Appendix B. Studies Not Cited in Proposal

Topic #	Topic in Comment Letter	Study #	Omitted Study	Section
1	Insider selling around repurchases	1	Dittmann, I., Li, A. Y., Obernberger, S., & Zheng, J. (2022). The impact of the corporate calendar on the timing of share repurchases and equity grants. Available at SSRN 4004098.	I.A.
2	Buybacks to boost executive pay	2	Fields, R.,(2016). <i>Buybacks and the board: Director perspectives on the share repurchase revolution</i> . Investor Responsibility Research Center Institute (IRRC) Institute/Tapestry Network.	I.B.
2	Buybacks to boost executive pay	3	PriceWaterhouseCoopers. (2019, July). <i>Share repurchases, executive pay and investment</i> . Report to Department for Business, Energy & Industrial Strategy, BEIS Research Paper 2019/011.	I.B.
2	Buybacks to boost executive pay	4	Bargeron, L., Kulchania, M., & Thomas, S. (2011). Accelerated share repurchases. <i>Journal of Financial Economics</i> , 101(1), 69-89.	I.B.
2	Buybacks to boost executive pay	5	Bennett, B., Bettis, J. C., Gopalan, R., & Milbourn, T. (2017). Compensation goals and firm performance. <i>Journal of Financial Economics</i> , 124(2), 307-330	I.B.
2	Buybacks to boost executive pay	6	Bens, D. A., Nagar, V., Skinner, D. J., & Wong, M. F. (2003). Employee stock options, EPS dilution, and stock repurchases. <i>Journal of Accounting and Economics</i> , 36(1-3), 51-90.	I.B.
3	Buybacks, investment, and employees	7	Fried, J., & Wang, C.C.Y. (2019, March 13). Democratic senators and the buyback boogeyman. <i>Harvard Law School Forum on Corporate Governance</i> .	I.C.
3	Buybacks, investment, and employees	8	Lazonick, W. (2014, September). Profits without prosperity. <i>Harvard Business Review</i> , 46-55.	I.C.
3	Buybacks, investment, and employees	9	Fried, J. M., & Wang, C. C. (2018). Are buybacks really shortchanging investment? <i>Harvard Business Review</i> , 96(2), 88-95.	I.C.
3	Buybacks, investment, and employees	10	Fried, J. M., & Wang, C. C. (2019). Short-termism and capital flows. <i>Review of Corporate Finance Studies</i> , 8(1), 207-233.	I.C.
3	Buybacks, investment, and employees	11	Fried, J. M., & Wang, C. C. (2021). Short-termism, shareholder payouts and investment in the EU. <i>European Financial Management</i> , 27(3), 389-413.	I.C.
3	Buybacks, investment, and employees	12	Asness, C., Hazelkorn, T., & Richardson, S. (2018). Buyback derangement syndrome. <i>Journal of Portfolio Management</i> , 44(5), 50-57.	I.C.
3	Buybacks, investment, and employees	13	Edmans, A. (2017, September 15). The case for stock buybacks. <i>Harvard Business Review</i> .	I.C.
3	Buybacks, investment, and employees	14	Edmans, A. (2020). <i>Grow the pie: How great companies deliver both purpose and profit</i> . Cambridge University Press.	I.C.
3	Buybacks, investment, and employees	15	Lewis, C. M. (2019). <i>The economics of share repurchase programs</i> . Report commissioned by the Association of Mature American Citizens.	I.C.
4	Buybacks and information asymmetry	16	Grossman, S. J., & Stiglitz, J. E. (1980). On the Impossibility of Informationally Efficient Markets. <i>American Economic Review</i> , 70(3), 393-408.	II

Topic #	Topic in Comment Letter	Study #	Omitted Study	Section
4	Buybacks and information asymmetry	17	Balakrishnan, K., Billings, M. B., Kelly, B., & Ljungqvist, A. (2014). Shaping liquidity: On the causal effects of voluntary disclosure. <i>Journal of Finance</i> , 69(5), 2237-2278	II
4	Buybacks and information asymmetry	18	Amihud, Y. (2002). Illiquidity and stock returns: Cross-section and time-series effects. <i>Journal of Financial Markets</i> , 5(1), 31-56	II
4	Buybacks and information asymmetry	19	Boone, A. L., Schumann-Foster, K., & White, J. T. (2021). Ongoing SEC disclosures by foreign firms. <i>The Accounting Review</i> , 96(3), 91-120.	II
4	Buybacks and information asymmetry	20	Lewis, C. M., & White, J.T. (2021). Corporate liquidity provision and share repurchase programs. U.S. Chamber of Commerce: Center for Capital Markets Competitiveness, Fall 2021.	II
4	Buybacks and information asymmetry	21	Core, J. E. (2001). A review of the empirical disclosure literature: Discussion. <i>Journal of Accounting and Economics</i> , 31(1-3), 441-456.	II
4	Buybacks and information asymmetry	22	Bushee, B. J., & Noe, C. F. (2000). Corporate disclosure practices, institutional investors, and stock return volatility. <i>Journal of Accounting Research</i> , 38, 171-202	II





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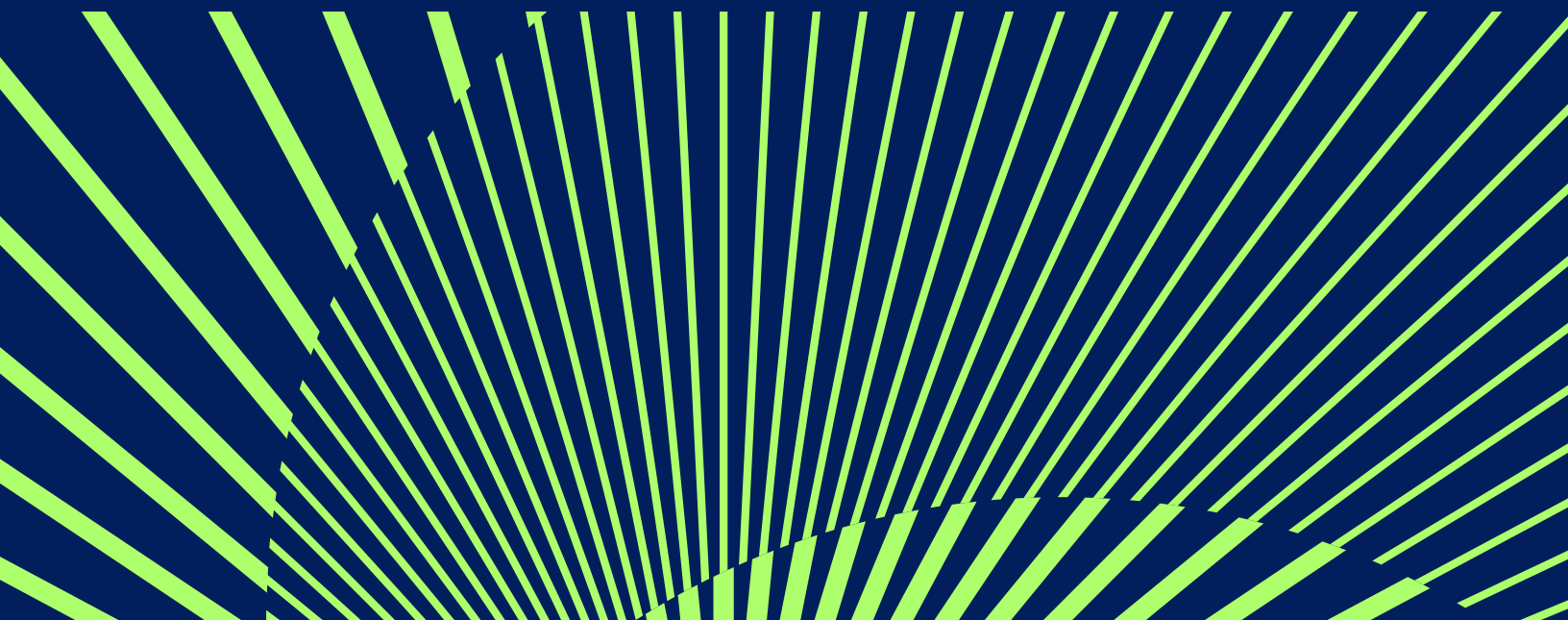
U.S. Chamber of Commerce  
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Competitiveness

Fall 2021 Report

Corporate Liquidity Provision &

# Share Repurchase Programs

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September 24, 2021

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# Executive Summary

Corporations use stock buybacks as a means to unlock value by returning surplus cash to investors. In turn, these investors can deploy the capital to more productive uses.

The popularity of stock buyback programs has attracted significant attention from academics, policymakers, and practitioners. Some vocal opponents conjecture that stock buybacks necessarily reduce investment and harm non-investor stakeholders such as employees. Although a large body of academic literature overwhelmingly refutes these claims, such vocal criticisms persist and have led some to calls for limits via taxing stock buybacks or outright bans on open market repurchases.

In this study, we present large sample evidence showing that stock buybacks have a beneficial but often overlooked effect on stock price stabilization. Using a broad sample of over 10,000 U.S.-listed companies across a 17-year sample period of 2004 to 2020, we present strong evidence that managers strategically utilize share repurchases to increase stock liquidity and reduce volatility. The resulting stabilization in stock prices benefits all investors—including retail investors, who now account for over 20% of trading volume in U.S. equities.

Our analyses of stock buybacks have six key takeaways:

1. Greater liquidity: Companies repurchasing stock provides substantial liquidity that facilitates orderly trading and reduces transaction costs for retail investors.
2. Reduced volatility: Stock buybacks significantly reduce realized and anticipated return volatility. Imposing limitations on buyback activity would increase stock market volatility and force retail investors to bear greater amounts of downside risk.
3. Retail investors benefit: Stock buybacks generate an economically large benefit for retail investors. Since 2004, buybacks have saved retail investors \$2.1–4.2 billion in transaction and price impact costs.
4. Proactive repurchase activity: Managers utilize market-based estimates of future volatility to inform their buyback decisions. When volatility is expected to be higher, managers increase their buyback intensity to stabilize stock prices, thus reducing costs for retail investors.
5. Response to uncertainty: Studies show that economic policy uncertainty increases stock price volatility and illiquidity. Managers respond to elevated policy uncertainty by strengthening their buyback activities. Retail investors benefit from price certainty about the value of their investments during periods of greater uncertainty.
6. Strategic liquidity supplier: Managers expand stock buyback activity during critical periods when investors sell relatively large amounts of shares. Thus, managers use buybacks to actively mitigate price pressure during periods of net selling pressure.

Overall, our analyses demonstrate the beneficial impact of stock buybacks on stock liquidity and volatility. To appreciate the market stabilization benefit of buybacks, it is important to understand what stock liquidity and volatility represent. A stock is considered to be liquid if buyers and sellers can transact quickly with low price impact. Highly liquid stocks also have more stable prices and thus lower stock price volatility. Our study shows that stock buybacks enhance liquidity and lower volatility. This allows all investors—institutional and retail—to buy and sell without having a large price impact.

Stock liquidity is especially beneficial to investors during periods of greater uncertainty when, for example, some institutional investors (e.g., index funds) must transact in stocks due to fund flows in and out of their portfolio. Retail investors also benefit from more stable stock prices as it allows them to sell stocks closer to the intrinsic value even during periods of higher uncertainty. By providing price support during periods when selling pressure is relatively high, buybacks benefit investors by reducing the downside risk of their investment.

Much of the rhetoric that surrounds the current debate on stock buybacks focuses on perceived advantages conferred to wealthy shareholders. For example, U.S. Sen. Sherrod Brown, the current chair of the Senate Committee on Banking, Housing and Urban Affairs, recently commented, “Today, much of that capital is funneled back to wealthy executives in the form of stock buybacks—which used to be illegal

market manipulation—and only about 15 percent goes to the real economy.”<sup>1</sup>

Contrary to the “political” view that share repurchase programs are self-serving mechanisms for inflating executive compensation, the evidence introduced by our study overwhelmingly supports the notion that managers use stock buybacks as a market stabilizing force, especially during uncertain and volatile periods. Price stabilization is a benefit that is conferred to all shareholders, including retail investors, regardless of whether they buy and sell stock in their own accounts or participate indirectly through investment in retirement accounts. We quantify the liquidity and volatility benefits of buybacks and estimate that retail investors save \$2.1–4.3 billion during our full sample period. These benefits equate to \$126–253 million in retail investor savings per year.

Therefore, our results have important policy implications for the contemporaneous discussions on buyback activity. Based on our findings, imposing any limitations or taxes on corporate share repurchases will curb managers’ ability to supply liquidity and reduce volatility during crucial periods of uncertainty, which would ultimately harm retail investors by forcing them to incur additional transaction costs and bear greater downside risk.

1. See “Brown, Wyden unveil major new legislation to tax stock buybacks,” September 10, 2021, available at <https://www.brown.senate.gov/newsroom/press/release/brown-wyden-tax-stock-buybacks>. Sen. Brown’s comment ignores the fact that the funds directed to stock buybacks are reallocated within the economy, likely to companies that are better able to put the money to use in profitable opportunities that create even more jobs (see, e.g., Fried and Wang, 2018).

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# 1. Introduction

Corporate payouts attract significant interest from investors, lawmakers, and academics.<sup>2</sup> A debate continues to surround a specific type of payout: share repurchase programs. Proponents argue that the distribution of excess cash reserves creates incentives for managers to make efficient capital investments; signals undervalued share prices; allows investors to liquidate equity positions in a tax-efficient manner; and redirects aggregate investment capital to young, growing companies with valuable investment opportunities that should ultimately lead to job creation. By contrast, opponents argue that share repurchase plans cause artificial price inflation, lead to inadequate future investment, are an artifact of managerial short-termism, and disproportionately benefit wealthy investors and corporate insiders at the expense of employees.

This study examines the *price stabilization* role of share repurchase programs. The possibility that companies can strategically reduce volatility or provide liquidity during uncertain periods has received limited attention in the contemporaneous debate on repurchases. However, some in the media conjecture that a widespread pause in stock buyback activity can lead to market volatility.<sup>3</sup>

Several academic papers examine the link between stock buybacks and liquidity, but often focus on the liquidity role of market-makers rather than corporations

during repurchasing events. Empirical findings on this relation are dated and mixed. For example, a number of studies report a negative relation between stock repurchases and liquidity as evidenced by widening bid-ask spreads following a share repurchase announcement (e.g., Barclay and Smith, 1988; Brockman and Chung, 2001). These papers argue that market-makers demand compensation for transacting against potentially informed insiders during repurchase programs, which results in widening spreads. A second set of studies employs varying sample sizes, research designs, and sample periods, and reports small or no relation between buyback announcements and bid-ask spreads (e.g., Singh et al., 1994, Wiggins, 1994; Miller and McConnell, 1995; Franz et al., 1995).

In contrast to these findings, two studies focusing on the liquidity role of corporations through buybacks provide suggestive evidence that share repurchases can have a *beneficial* impact on stock liquidity. Cook et al. (2004) examine a sample of 64 firms that provide daily repurchase data and find some improvements in bid-ask spreads and attenuations in the price impact of order imbalances. They argue that by supplying liquidity during times when there is net selling pressure, managers can actively mitigate the price impact. Hillert et al. (2016) find similar results using a large sample of buyback activities between 2004 and 2010.

2. Throughout this study we use the terms “buybacks,” “stock buybacks,” “repurchases,” and “share repurchases” interchangeably to describe the corporate payout policy decision to repurchase equity from existing shareholders.
3. See, e.g., Erik Sherman, “Stock buybacks drop may mean more market volatility,” *Fortune*, July 3, 2019, available at <https://fortune.com/2019/07/03/share-buybacks-slowdown/>.



Motivated by the mixed findings and small or dated samples in existing studies, we revisit the relation between stock buybacks, liquidity, and volatility using a large sample of over 10,000 U.S.-listed firms over the 17-year period 2004 to 2020.<sup>4</sup> Our sample period encompasses significant changes in technology, market microstructure, and the ownership structure of U.S.-listed firms via the rise in passive indexers and retail traders. Thus, we compute a wide range of variables intended to capture multiple dimensions of buyback activities, liquidity, and volatility. We also use an econometric technique to adjust our estimates for other factors that could influence these outcomes.<sup>5</sup>

By announcing the initiation of a share repurchase program, a firm effectively notifies investors that it plans to open a window when investors can be reasonably confident that they can liquidate positions without being unduly concerned about negative price impact. Similar to Benveniste et al. (1996), we argue that share repurchase programs implicitly provide liquidating shareholders with a put option that allows them to sell at the current market price.<sup>6</sup> The benefit derived from corporate liquidity provision is similar to underwriter efforts to stabilize prices of newly listed firms immediately following initial public offerings (IPOs).<sup>7</sup> The main difference is that the firms purchase the shares in a stock buyback rather than the underwriter in an IPO. In both cases, the entity purchasing shares can strategically decide when to enter the market. The marginal benefit

of this action should be larger during periods of elevated uncertainty and when downward price pressure is the strongest.

Based on these arguments, our main prediction is that managers will repurchase shares when trading is characterized by a period of illiquidity and that strategic repurchasing will reduce stock market volatility all else equal. By limiting downside risk, buyback-induced reductions in volatility are especially beneficial to retail investors. Similarly, greater stock liquidity reduces transaction costs of investing, which benefits all shareholders, especially retail traders who tend to transact more frequently (Odean, 1999; Barber and Odean, 2000; Eaton et al., 2021).

We perform a regression analysis on several liquidity proxies and find that, as predicted, managers actively repurchase shares during periods when selling pressure is relatively high. When firms repurchase shares, their actions improve liquidity, thereby reducing transaction costs. We also find that these effects are an increasing function of buyback intensity (percentage of shares repurchased relative to shares outstanding). All of these findings are consistent with our hypothesis that share repurchase programs provide liquidity.

We next consider the impact on stock price volatility. We use three measures of volatility: historical volatility, implied volatility, and abnormal return volatility. The latter measure focuses on firm-specific

4. We start our sample in the first quarter of 2004 (1Q04) because the U.S. Securities and Exchange Commission (SEC) began requiring reporting issuers to provide quarterly disclosure of all share repurchases for issuers with fiscal periods ending on or after March 15, 2004. See SEC, Purchases of Certain Equity Securities by the Issuer and Others, Final Rule, November 10, 2003, available at <https://www.sec.gov/rules/final/33-8335.htm>.
5. Our regression models include standard control variables used in tests of liquidity and volatility, calendar-quarter fixed effects to control for time-varying factors that could influence liquidity and volatility; and industry fixed effects to control for time-invariant factors that could impact these outcomes.
6. Benveniste et al. (1996) argue that underwriter price stabilization following an initial public offering provides institutional investors with a put option as implicit compensation for revealing private information during the pre-offer period.
7. Lewellen (2006) documents that there is a substantial amount of price support in the IPO market.

risk by netting out the volatility of the overall market. We show that, regardless of the volatility metric, stock return volatility tends to be lower during periods when managers are actively repurchasing shares. Moreover, the magnitude of the volatility reduction is larger when the company repurchases a greater percentage of shares. These findings are consistent with the prediction that strategically timed share repurchases effectively provide price support by reducing the risk of stock price declines. This result does not, however, imply that repurchase programs prevent stock prices from reaching their fundamental values. Instead, it suggests that buybacks limit liquidity-induced losses and reduce transaction costs for investors.

We also provide estimates of the economic benefits to retail investors due to repurchase activity. Studies and news articles show that retail investors account for a growing portion of stock market activity in the U.S. Estimates of retail investor trading volume range from 10% to 14% before commission free trading was introduced, and more than 20% by the end of our sample period. We estimate net savings of \$2.1–4.2 billion during our sample period, most of which stems from reduced stock price volatility.

We also consider whether managers are more likely to repurchase shares during periods when near-term volatility is expected to be high relative to longer-term volatility forecasts. Using the implied volatility of short- and medium-term stock options, we predict and find that managers tend to engage in more buyback activities and strengthen the intensity of their repurchases when short-term implied volatility is relatively higher than long-term implied volatility.

We then examine periods of high political uncertainty, which prior work links to deteriorations in overall market quality and liquidity (Pasquariello and Zafeiridou, 2014). We find that when political uncertainty is high, firms with existing buyback programs are more likely to repurchase shares. We also show that firms are less likely to initiate a new buyback program during this period, perhaps due to the uncertainty of future tax or governmental policies. A graphical examination of the time series of buybacks shows that firms tend to increase the intensity of share repurchase activity just before a U.S. presidential election period. This finding is also consistent with managers using share repurchases to provide liquidity during uncertain times.

Finally, we test a “liquidity windows hypothesis” by examining whether managers alter repurchase activity during periods when institutional investors are selling more shares. We hypothesize and find that managers tend to strengthen repurchase activities when institutional selling is high. We interpret this finding as evidence that managers supply liquidity to markets by attenuating volatility pressures due to institutional selling.

Taken together, we provide substantial evidence that managers strategically use share repurchase programs to stabilize stock price and provide liquidity during periods of uncertainty. These activities mitigate share price declines and benefit the firm’s investors by reducing transaction costs and reducing downside liquidity risk. Thus, our study provides timely evidence that should be considered in the contemporaneous debate on stock

buyback activity. Based on our findings, any imposition of limits on stock buyback activity would reduce stock liquidity, elevate return volatility, and introduce risk that ultimately harms the company's investor base, which includes a substantial and growing portion of retail investors.

The rest of the paper is organized as follows: Section 2 discusses the economics of buybacks and the contemporaneous debate surrounding stock buybacks, and reviews the relevant literature. Section 3 describes the data and the metrics used in our analysis. Section 4 discusses our main results. Section 5 offers additional analyses. We conclude in Section 6.

## 2. Background Information

### A. The Economics of Buybacks

Stock buybacks are corporate payout policy decisions designed to return excess cash to shareholders. A firm that follows an optimal investment policy will first allocate capital to new and existing investments that increase firm value. Once a company invests in all projects that have a positive net present value, it will consider whether it should return any surplus cash to shareholders since further investment would likely reduce firm value. In other words, value would be reduced if firms continued to invest by directing capital to projects that earn less than the opportunity cost of capital. Rather than make value-destroying investments, firms can return surplus cash to shareholders that can then use the returned capital to invest in other companies that need to raise additional cash for investment opportunities that are value increasing.<sup>8</sup> By allowing surplus cash to find a better use, economy-wide corporate investment is more efficiently allocated.

### Share Repurchase Regulation

Prior to 1982, companies conducting open market share repurchases were subject to potential stock price manipulation penalties under Sections 9(a)(2) and

10(b) of the Securities Exchange Act of 1934 (Exchange Act). During this period, firms were effectively forced to rely on ordinary or special dividends to return surplus cash to shareholders. Since ordinary dividends are taxed as ordinary income, it results in the double taxation of corporate income since the distributed cash was generated by earnings that were already taxed at the corporate level.

Under Rule 10b-18, which the SEC adopted in 1982 and updated in 2003, firms can receive a safe harbor from liability for manipulation based solely on the timing or price of repurchases.<sup>9</sup> Importantly, managers can still violate the anti-fraud and anti-manipulation provisions of the Exchange Act if they, for example, engage in repurchases while in possession of material, nonpublic information that could impact the company's stock price. Thus, most share repurchases actively seek this safe harbor by following a standard process.<sup>10</sup>

### Share Repurchase Mechanics

Before engaging in buybacks, the board of directors must explicitly authorize and approve a formal share repurchase program. The firm then publicly discloses the repurchase program prior to its

8. It is important to note that the buyback cash paid to shareholders does not necessarily exit capital markets or the economy. Investors that tender their shares during the share repurchase program can reinvest the cash received at other companies or spend it to consume goods and services. Thus, share repurchases can have a reallocation effect by allocating capital to a more efficient use.

9. See SEC, Purchases of Certain Equity Securities by the Issuer and Others, Final Rule, November 10, 2003, available at <https://www.sec.gov/rules/final/33-8335.htm>.

10. The SEC's Division of Trading and Markets provides a set of questions and answers to assist companies in meeting the voluntary safe harbor from liability for manipulation under Rule 10b-18. See SEC, "Division of Trading and Markets: Answers to frequently asked questions concerning Rule 10b-18 ('Safe Harbor' for Issuer Repurchases)," modified December 2, 2016, available at <https://www.sec.gov/divisions/marketreg/r10b18faq0504.htm>.

commencement. This disclosure informs market participants on the timing, size, objective, and method of repurchase. Although this disclosure is not a firm commitment to repurchase shares, the market response to repurchase announcements has historically been positive, indicating that investors approve of the board's decision and view the disclosure as a credible non-binding commitment (see, e.g., Ikenberry et al., 1995; Oded, 2005; Barger et al., 2011). Over the course of an active repurchase program, firms are required to periodically report the actual shares repurchased on SEC Forms 10-Q and 10-K (and 20-F for foreign private issuers).<sup>11</sup>

There are several methods for repurchasing shares. The most common approach is called an open market repurchase (OMR) program, where the firm buys back its shares over a period that can last several months or multiple years. Academic studies (e.g., Oded, 2005; Farre-Mensa et al., 2014) have shown that OMRs constitute as much as 90% of the dollar volume of all announced repurchases. An advantage of an OMR is that a firm can determine how many shares to repurchase as a function of changing market conditions (Stephens and Weisbach, 1998; Cook et al., 2004).

Companies also employ structural buyback programs with features designed to achieve specific objectives. One example is an accelerated share repurchase (ASR) program. A firm that employs an ASR retains an investment bank to collect a large position in the firm's common stock for which the firm pays a fixed as opposed to uncertain price to repurchase.

In effect, an ASR functions much like a reverse equity issuance. In some cases, the cash used to execute an ASR comes from the issuance of new debt, which substantively increases the relative amount of debt in the firm's capital structure. ASR programs, however, are less flexible than OMR programs as managers have less flexibility to alter ASR terms once this type of repurchase program is announced (Barger et al., 2011). Other less frequently employed forms of repurchases include privately negotiated repurchases (Peyer and Vermaelen, 2005) and tender offers through a Dutch auction (Comment and Jarrell, 1991) or at a fixed price (Masulis, 1980).

### **Motivations for Repurchasing Stock**

Firms engage in stock buybacks for a number of reasons. As noted above, share repurchases are a mechanism for distributing surplus cash, which is the amount of cash left over after funding new investment opportunities. By returning surplus cash to investors, managers can attenuate the temptation to invest in negative net present value projects (i.e., projects that earn less than the opportunity cost of capital) that sub-optimally grow the size of the firm's assets.

Prior to the SEC's safe harbor for share repurchases, there was considerable evidence that some managers would use surplus cash for projects or acquisitions that increased the size of assets under their control. These actions generated managerial prestige and boosted compensation, thereby destroying firm value (Jensen, 1986).

11. In contrast to quarterly reporting of buyback activity by the firm, its insiders—defined as top executives, directors, and 10% owners—must report buys and sales within two business days after the transaction under Section 16(a) of the Securities Exchange Act of 1934. See SEC, "Exchange Act Section 16 and related rules and forms," modified August 11, 2010, available at <https://www.sec.gov/divisions/corpfin/guidance/sec16interp.htm>.

Repurchasing shares and paying dividends limits the resources under management control, thereby requiring firms to engage with capital market participants to fund new investment. Such engagement can create value by adding another layer of monitoring on corporate investment decisions. There also is strong evidence that investors negatively view surplus cash left on the balance sheet rather than being returned via payouts. For example, Dittmar and Mahrt-Smith (2007) show that the market value of \$1.00 on the balance sheet of a poorly governed firm is worth less than \$1.00. Taken together, academic evidence shows that payout surplus cash via dividends and stock buybacks is a way to unlock value.

In comparison to dividends, share repurchases have a number of additional advantages. First, share repurchases can be a more *tax-efficient* method for returning surplus cash. Consider a dividend paid to all investors simultaneously. Tax laws typically treat the dividend as ordinary income and, thus, paying a dividend triggers potential tax obligations for all investors. In the case of a share repurchase, selling shareholders will be subject to capital gains taxes. If the capital gains tax rate is lower than the ordinary income tax rate, these investors will realize a higher after-tax rate of return on their investment. Moreover, only those investors that tender shares trigger tax obligations since shareholders that do not sell defer tax obligations to a future sale date. Yet, non-selling shareholders still benefit from any corresponding increase in the stock price. On net, share repurchases allow shareholders to determine when they are exposed to personal taxes rather than imposing taxes on retail investors.

A second advantage of share repurchases is the *flexibility* for managers to adjust to changes in market conditions under an OMR program. Dividends carry the implied promise that the company will continue to pay the same or an increasing dividend. Indeed, academic evidence shows that dividend initiations are typically met with an increase in the stock price, which is often attributed to signaling confidence that future profitability will remain strong enough to pay additional dividends. For example, Kale et al. (2012) study a sample of firms initiating their first dividend after an IPO and find a 1.7% positive abnormal price response. However, dividend cuts are typically met with a strongly negative market response. For instance, Henry et al. (2017) find an average -6% stock price decline around the announcement of dividend reduction for a sample of firms during 1997 to 2015.

Several studies find a positive market response to the announcement of share repurchases, which is frequently attributed to signaling undervalued stock prices and a reduction in agency costs by reducing surplus cash (e.g., Ikenberry et al., 1995; Oded, 2005; Barger et al., 2011). Barger et al. (2020) also show that the suspension of a previously announced open market repurchase program is met with a negative stock price response, but the magnitude of the response is smaller than the response associated with dividend cuts. For example, Barger et al. (2020) report a -1.35% abnormal return to disclosing repurchase suspensions over 1984 to 2010, which is substantially less negative than the -6% stock price decline to dividend cuts reported in Henry et al. (2017).



Consistent with repurchases being more flexible than dividends, Stephens and Weisbach (1998) find that “quarterly repurchases are positively related to both the expected and surprise components of the firm’s quarterly cash flows, suggesting that managers adjust their stock repurchases for unexpected changes in the firm’s cash position.” They note that such adjustments would not be possible if managers had to pre-commit to specific amounts or timing in repurchases.

Firms also repurchase shares to adjust their capital structure. For firms that grant stock or issue options to employees, share repurchases help offset the dilutive impact of equity compensation. Similarly, a firm that issues stock to fund an acquisition might wish to repurchase those shares over time to achieve a target capital structure. Firms might also repurchase shares as part of a large change in their capital structure, such as the issuance of debt to repurchases shares, which is known as a leveraged buyback. When companies have slowing growth and unused debt capacity, a leveraged buyback allows firms to optimize their capital structure and avail themselves to valuable tax benefits of debt financing. Prior work (e.g., Lei and Zhang, 2016) shows that leveraged buybacks are met with both positive announcement and long-term stock returns, likely due to the dual governance effect of reducing surplus cash and additional monitoring by creditors. Thus, repurchases can be value-enhancing by reducing agency costs of equity.

## B. Contemporaneous Debate on Buybacks

### Opponents of Stock Buybacks

The popularity of share repurchase programs attracts its share of critics. Some claim that buybacks sacrifice long-term value creation that harms non-investor stakeholders. For example, Lazonick (2014) argues that share repurchases erode employee income gains, harm employment levels, limit corporate investment, and contribute to a wealth gap between investors and other Americans. Lazonick points to a statistic that, over 2003 to 2012, companies in the Standard and Poor’s S&P500 index used 54% of earnings to buy back stock and 37% to pay dividends. Lazonick (2014) notes that these high payout rates leave only 9% to invest in the future growth of companies. Similar criticisms were lodged by Lazonick et al. (2020) and echoed by prominent investors such as BlackRock’s Chairman and CEO Laurence Fink in a letter to S&P500 CEOs in 2014.<sup>12</sup>

In response to these concerns, U.S. Sens. Chuck Schumer and Bernie Sanders penned an opinion article for the *New York Times* in February 2019.<sup>13</sup> They cite the same 90% payout statistic as Lazonick (2014) and assert that managers overly focus on shareholder value rather than worker productivity or corporate resiliency. These senators argue that share repurchases are bad for U.S. workers and the long-term strength of the economy. Moreover, they claim that share repurchases constrain

12. In a letter to S&P500 CEOs, Fink states, “Too many companies have cut capital expenditures and even increased debt to boost dividends and share buybacks. We certainly believe that returning cash to shareholders should be part of a balanced capital strategy; however, when done for the wrong reasons and at the expense of capital investment, it can jeopardize a company’s ability to generate sustainable long-term returns.” See “Text of letter sent by Larry Fink, BlackRock’s Chairman and CEO, encouraging a focus on long-term growth strategies,” *Wall Street Journal*, March 21, 2014, available at <https://online.wsj.com/public/resources/documents/blackrockletter.pdf>.
13. See Schumer and Sanders, “Limit corporate stock buybacks,” *New York Times*, February 3, 2019, available at <https://www.nytimes.com/2019/02/03/opinion/chuck-schumer-bernie-sanders.html>.



company investment in research and development (R&D) and reduce firms' ability to pay their workers higher wages. In the article, the senators threaten to introduce legislation that would limit share repurchase activity by modifying the corporate tax code. In July 2019, U.S. Sen. Sherrod Brown introduced legislation seeking to curb stock buybacks by repealing the safe harbor under Rule 10b-18 and creating a "worker dividend" equal to \$1 for every \$1 million invested in stock buybacks, dividend increases, and special dividends.<sup>14</sup> In September 2021, Sens. Brown and Ron Wyden unveiled a bill titled the Stock Buyback Accountability Act that proposes a 2% excise tax on the amount of stock buybacks.<sup>15</sup>

Criticisms of stock buyback activity also surfaced during the onset of the COVID-19 pandemic. For example, in March 2020, then presidential candidate Joe Biden called upon CEOs to commit to forgo stock repurchases for a full year under the pretext that CEOs should focus on their employees and their community.<sup>16</sup> Specific restrictions on stock buybacks and dividends were also included by Congress in the text of the economic stimulus and relief acts in 2020 and 2021 as well as recently proposed legislation focusing on infrastructure investment.<sup>17</sup>

## Proponents of Stock Buybacks

Several academics have responded to criticisms of share repurchases by either highlighting logical flaws in the critiques of buybacks or noting overlooked aspects of corporate financial policies that call into question the premise that buybacks are the source of so many negative economic outcomes. We briefly summarize the rebuttal to the criticism of share repurchases below.

Fried and Wang (2018, 2019) argue that the "90% payout statistic" cited by Lazonick (2014) and U.S. Sens. Schumer and Sanders is misleading. They present empirical evidence that public companies recover about 80% of the cash distributed to shareholders by raising new equity. Thus, the net amounts of cash being returned to shareholders is less than half the amount claimed by buyback critics. Fried and Wang (2018, 2019) also argue that when critics cite the payout ratio—shareholder payouts as a percentage of net income—they fail to recognize that net income has already deducted R&D expenditures, which they estimate accounts for 25–30% of net income. They note that "net income at best is a measure of the amount available for capital expenditures (CAPEX) and additional R&D."

14. See Stock Buyback Reform and Worker Dividend Act of 2019, S.2391, 116th Cong. (2019), available at <https://www.congress.gov/bills/116th-congress/senate-bill/2391/text>.

15. See "Brown, Wyden unveil major new legislation to tax stock buybacks," September 10, 2021, available at <https://www.brown.senate.gov/newsroom/press/release/brown-wyden-tax-stock-buybacks>. A copy of the bill is available at [https://www.brown.senate.gov/imo/media/doc/stock\\_buy\\_back\\_accountability\\_act\\_bill\\_text.pdf](https://www.brown.senate.gov/imo/media/doc/stock_buy_back_accountability_act_bill_text.pdf).

16. See tweet by Joe Biden, "I am calling on every CEO in America to publicly commit now to not buying back their company's stock over the course of the next year. As workers face the physical and economic consequences of the coronavirus, our corporate leaders cannot cede responsibility for their employees. Every CEO in America should be focusing on workers, families, and communities—not executive compensation and share prices." March 20, 2020, available at <https://twitter.com/JoeBiden/status/1240998489498288129>.

17. The Coronavirus Aid, Relief, and Economic Security Act, which provided \$2.2 trillion in economic stimulus, was signed into law on March 27, 2020. The legislation provides loans and loan guarantees to businesses with the restriction that, "[U]ntil the date 12 months after the date the loan or loan guarantee is no longer outstanding, the eligible business shall not pay dividends or make other capital distributions with respect to the common stock of the eligible business." See <https://www.govinfo.gov/content/pkg/PLAW-116publ136/pdf/PLAW-116publ136.pdf>. Similar restrictions were placed on contractors and air carriers in the \$900 billion Consolidated Appropriations Act of 2021 (see <https://www.govinfo.gov/content/pkg/BILLS-116hr133enr/pdf/BILLS-116hr133enr.pdf>) and the \$1.9 trillion American Rescue Plan of 2021 (see <https://www.congress.gov/117/bills/hr1319/BILLS-117hr1319enr.pdf>).

Fried and Wang (2018, 2019) highlight the flaw in viewing stock buybacks and investments as substitutes. Their evidence indicates that firms are able to make all of the investment in CAPEX and R&D that managers deem necessary and repurchase shares out of surplus cash from net income. Thus, buybacks do not shortchange investments in the company and its employees. Similarly, buybacks do not necessarily sacrifice investments in the community because investors in general tend to invest in local companies (see, e.g., Coval and Moskowitz, 1999). Therefore, it stands to reason that funds directed to stock buybacks are more likely to be reinvested locally.

Fried and Wang (2018, 2019) conclude that shareholder payouts are not wasted from an investment or innovation perspective. Moreover, buybacks and dividends do not constrain firms' ability to invest since shareholders supply investment capital by buying newly issued shares. They also argue that limiting repurchases for public companies would make it harder to return surplus capital to investors who can reinvest in young and growing private firms, which contribute substantially to employment growth. Moreover, they argue that buybacks do not meaningfully contribute to income inequality.

Asness et al. (2018) also push back on the notion that share repurchases are harmful. In their study, they characterize the political attacks on share repurchases as "buyback derangement syndrome." They first reject claims by critics that current levels of buyback activities are abnormally high. In their analysis, they demonstrate that, when properly measured, aggregate share repurchase activity is far

below historically high levels. Moreover, when netting repurchases against debt issuance, they claim that share repurchases are essentially a "non-event" in terms of changes in capital structure. Asness et al. (2018) also argue that repurchases did not mechanically create earnings growth or stifle aggregate investment activity as critics often claim. They also contend that buybacks were not the primary cause of the stock market strength during the 2010s and that the "myths" of the buyback programs should be discarded.

Edmans (2017, 2020) systematically challenges critics' claims that companies are misappropriating corporate funds towards buybacks by reviewing several academic studies. He first points to empirical evidence showing that firms are not reducing investment at the expense of long-term value creation. In fact, he argues that this viewpoint "puts the cart before the horse" since firms first allocate money to investment based on investment opportunities that generate a return greater than the firms' cost of capital. Any remaining or "surplus" cash is then available to use for buybacks, which is supported by both empirical and survey evidence that repurchases are made out of residual cash flow after investment spending (Brav et al., 2005).

Edmans (2017, 2020) also points to studies showing that stock repurchases tend to occur when firms' growth opportunities are poor (Grullon and Michaely, 2002) or stock prices are low (Dittmar and Fields, 2015). He argues that buybacks do not necessarily weaken companies in the long term. For example, he points to studies showing that firms engaging in buybacks tend to outperform the market (Ikenberry

et al., 1995). Edmans (2017, 2020) also confronts the premise behind the critique of buybacks that “more investment is better than less investment.” He notes that a fundamental principle of finance is that value is created only if the returns from investment are higher than other projects that shareholders could invest in.

Edmans warns that restrictions on repurchases could harm the economy as it would incentivize companies to “empire build” by investing the capital to sub-optimally grow the size of the firm. Limiting or taxing buybacks would also damage the ability to efficiently reallocate money to young, smaller companies that fuel growth and employment (see, e.g., Fried and Wang, 2018). He also notes that repurchases increase the ownership percentages of insiders such as the CEO, which further aligns their stakes with shareholders.

Given that numerous academic studies refute the claims that buybacks are leading to short-termism that deprives public firms of investment capital and harms stakeholders, it is puzzling that the negative buyback rhetoric continues to persist as part of the political dialogue. In other words, how does one reconcile that some politicians continue to seek ways to limit buyback activity by pointing to claims of short-termism that are not backed up by the preponderance of scientific studies?

To shed light on this phenomenon, Roe and Shapira (2020) examine the power of narrative in corporate lawmaking. They note that “short-termism” is a powerful and persistent narrative of a seemingly dichotomous managerial choice of investing for the short versus long term, which is not true. This narrative argues that market forces encourage short-term actions such as buybacks that necessarily sacrifice long-term value creation and ultimately damage the economy. The narrative is powerful due to forces such as its connotation of good versus bad and psychological tendencies such as confirmation bias by those wishing to limit or tax corporate actions. Roe and Shapira (2020) warn that politicians can use the narrative of short-termism to push for limits on company actions that are not justified by the data, which will inevitably result in sub-optimal policymaking.

## C. Buybacks, Liquidity, and Volatility

In this subsection, we review academic literature linking elements of buyback activity to stock liquidity or volatility.<sup>18</sup> Existing studies provide mixed evidence as to whether stock buybacks increase or decrease stock liquidity.

Theoretically, there are several reasons why share repurchase activity could impact liquidity. For example, one implication of the seminal theory on payout by Miller and Modigliani (1961) is that trading

18. Other prior work focuses on the liquidity of the company rather than the liquidity of its stock. For example, Stephens and Weisbach (1998) show that quarterly repurchase activity is positively related to the expected and surprise components of cash flows. This finding implies that managers adjust their repurchase activity when they experience unanticipated changes in their cash holdings (i.e., have fewer liquid assets to use for repurchases). Consistent with this notion, Bargeron et al. (2011) note that, in comparison to OMR buyback programs, ASR programs reduce the flexibility of managers to alter buybacks in response to unexpected shocks to cash flow. Moreover, they note that similar arguments apply to changes in stock price or liquidity after the buyback program is announced. The lack of flexibility is likely one reason that firms buy back greater amounts of stock through OMR rather than ASR programs. Manconi et al. (2019) examine buyback activity around the world and show that buybacks create long-term shareholder value, especially in countries with poor stock market liquidity. However, shareholder returns crucially depend on the liquidity of equity markets. They note that average stock liquidity is the only country-level characteristic that is robustly related to long-term abnormal stock returns, indicating that investors might underreact in the near-term to the positive information contained in buyback announcements.

frictions, such as liquidity costs, could impact firms' payout policy decisions. Similar to the role of underwriters in IPOs (see, e.g., Benveniste et al., 1996), share repurchase activity could contribute to price stabilization, thereby increasing liquidity and reducing volatility by allowing existing and large shareholders to sell at the current market price. However, Holden et al. (2014) note that repurchases could negatively impact liquidity by simply reducing the number of shares traded in the market.

Holden et al. (2014) note that repurchases could also influence liquidity indirectly if they alter the behavior of market-makers, who are key suppliers of market liquidity. This influence will depend on whether market-makers perceive repurchase activities as informed trading by corporate insiders. On the one hand, buybacks could reduce liquidity if market-makers demand compensation for transacting against informed insiders. In this case, market-makers could widen the spread to compensate for their opportunity cost of time and invested capital. On the other hand, share repurchases could induce competition amongst market-makers, who supply liquidity, thereby having a positive impact on liquidity.

Empirical evidence on the relation between buybacks and liquidity is mixed as existing studies document positive, negative, and negligible effects on liquidity. Cook et al. (2004) find a positive relation between buybacks and liquidity. They posit that firms can provide liquidity and lower their capital costs through OMR trades during periods of low trading volume or higher selling pressure. For example, they argue that firms can directly impact quoted bid-ask spreads by placing a limit order to buy

shares if the price declines to a certain level. Cook et al. (2004) study buyback activity during 1993 and 1994 for a sample of 64 firms that respond to a questionnaire about buyback activities. Using intra-day trading data, they find that repurchases positively influence liquidity by narrowing bid-ask spreads and attenuating the price impact of order imbalances on days when repurchase trades are completed.

More recently, Hillert et al. (2016) also find a positive relation between share repurchases and liquidity using a sample of companies over 2004 to 2010. Using an instrumental variables approach, these authors report that stock buyback intensity reduces bid-ask spreads and other measures of stock illiquidity. Moreover, they find that firms use buybacks to provide price support via contrarian trading strategies, such as increasing buyback intensity when order imbalances and short selling interest is higher, both of which put downward pressure on stock prices. Thus, these studies provide initial evidence suggesting that firms repurchase stock to provide liquidity.

Other studies find a negative relation between buybacks and liquidity. For example, Barclay and Smith (1988) find that bid-ask spreads widened after stock repurchase announcements during 1983 to 1986. They argue that the widening of bid-ask spreads reflects actions by market-makers to increase compensation for transacting against informed company insiders. Consistent with these findings, Brockman and Chung (2001) also find that buyback activity significantly reduces stock liquidity. They study repurchases by companies listed on the Stock Exchange of Hong Kong, which uniquely requires listed firms to disclose all repurchases

by the start of the next business day. Brockman and Chung (2001) find that bid-ask spreads widen on days when share repurchases are executed versus non-repurchase days. They conclude that buyback activities impose a cost in the form of lower liquidity. Similar findings are reported by Ginglinger and Hamon (2007) for a sample of 352 firms listed in France.

Other studies find negligible evidence of share repurchase announcements influencing stock liquidity. For example, Singh et al. (1994) match a sample of 181 OMR announcements over 1984 to 1990 to a control sample of non-repurchasing firms with similar market capitalizations. They present regressions that fail to uncover differences in bid-ask spreads around the announcement date. Wiggins (1994) studies a sample of 195 repurchase announcements over 1988 to 1990 and finds a negligible decline rather than increase in spreads and no evidence of a shift in depths following the announcement of repurchases. Similarly, Miller and

McConnell (1995) study 248 repurchase announcements over 1984 to 1988 and find no relation between repurchases and bid-ask spreads. Franz et al. (1995) study 157 buyback announcements over 1983 to 1987 and find a decline in bid-ask spreads after adjusting for dealers' order-processing and inventory-holding costs.

Taken together, existing research is mixed on whether one might expect a positive or negative relation between buyback activity and measures of stock liquidity. Many of the existing studies examine non-U.S.-listed firms or utilize small or older sample periods that predate changes in SEC rules, technology, and the rise of passive indexing and retail investors. Moreover, there is sparse literature on the influence between stock buybacks and volatility. Thus, we revisit the relation between buybacks, liquidity, and volatility for a large cross-section and time series of over 10,000 firms across 17 years. We also use a wide range of measures of liquidity and volatility that we define in the next section.



# 3. Sample and Research Design

## A. Buybacks and Sample Selection

We construct our sample by first downloading all firms in the Center for Research in Security Prices (CRSP)/Compustat merged databases from Wharton Research Data Services over 2004 to 2020. We begin our sample in the first quarter of 2004 because this period coincides with the December 2003 effective data of SEC rules requiring companies to report quarterly share repurchase activity. Thus, Compustat’s full coverage of the number of shares repurchased each quarter begins in 2004. After dropping firms with missing values for our measures of stock liquidity, the final sample includes 10,928 unique firms and 340,327 firm-quarters.

### Buyback Activity

We construct two measures of buyback activity. First, we create an indicator variable, buyback active (*BB\_ACTIVE*), that equals 1 if a firm repurchases any shares during a quarter, and otherwise 0. Thus, *BB\_ACTIVE* is meant to proxy for the *extent* of buyback activity during the quarter. Second, we measure the *intensity* of buyback activity by dividing the number of shares repurchased during the quarter by the shares outstanding at the end of the prior quarter, which we label *BB\_PCTOUT*. For firms with missing information on buyback activity, we assume they repurchased zero shares during the quarter. In regression estimates, we take the natural log of 1 plus the ratio of shares repurchased to shares outstanding, to normalize this measure.

### Buyback Disclosure

We also capture buyback disclosure using data from the S&P Capital IQ–Key Developments (CIQ-KD) database. The CIQ-KD database contains summaries of events and news that could have a material impact on stock prices. We retain all news events related to share repurchases. We then classify news on buyback programs into three categories: announcements, updates, and expansions.

To identify announcements of new buyback programs, we retain all news events with event identification numbers 36 (“Buybacks”), 152 (“Potential Buybacks”), and 232 (“Buyback Transaction Announcements”) in the CIQ-KD database. A random sample of these events shows that they tend to correspond to the announcement of a new buyback plan, firms seeking board or shareholder approval of a buyback plan, or board authorization of a new buyback plan. We create a variable, *BB\_ANNOUNCE*, that equals 1 for firms with any of these three event types during a calendar-quarter, and otherwise 0.

To detect updates on quarterly share repurchases, we retain event identification number 231 (“Buyback Tranche Update”) in the CIQ-KD database. This event reflects disclosures of buyback activity from a previously announced repurchase program. The event type almost always reports the quarter of reporting, the number of shares repurchased, and often the repurchase price or percentage of repurchase program

that is complete. We generate an indicator variable, *BB\_UPDATE*, that equals 1 if a firm provides at least one disclosure of this event type during the quarter, and otherwise 0.

We also measure buyback expansions, which are event identification number 230 (“Buyback—Change in Plan Terms”) in the CIQ-KD database. We analyze a random sample of these disclosures and find they mostly reflect an extension of time to repurchase shares under an existing program or an increase in the authorized number of shares they can repurchase. We generate the indicator variable, *BB\_EXPAND*, that equals 1 if any of these event type disclosures are made during a quarter, and otherwise 0.<sup>19</sup>

## B. Measures of Stock Liquidity

The academic literature designates a stock as having higher liquidity if market participants can quickly trade large quantities at a low cost with little price impact (Liu, 2006). Thus, stock liquidity is a function of trading quantity, speed, cost, and price impact. Given that stock liquidity is highly dimensional, prior researchers have employed a number of metrics to capture these properties.

### Amihud Illiquidity

Amihud (2002) introduces a measure of stock illiquidity that is among the most widely used measures of trading cost-based liquidity in the academic literature (Le and Gregoriou, 2020). Amihud’s (2020) illiquidity (*ILLIQ*) measure is a

return-to-volume metric that captures the sensitivity of daily stock price movements per \$1 of trading volume. Thus, it captures the price impact of stock trading. It is calculated in Equation (1) as follows:

$$ILLIQ_{it} = \frac{1}{D_{it}} \sum_{d=1}^{D_{it}} \frac{|R_{idt}|}{Dvol_{idt}}$$

where *ILLIQ* is the illiquidity ratio of stock *i* in period *t*, *D<sub>it</sub>* is the number of trading days in the period *t* for stock *i*, *|R<sub>idt</sub>|* is the absolute value of the daily return for stock *i* on day *d* in the period *t*, and *Dvol<sub>idt</sub>* is dollar trading volume for stock *i* on day *d* in the period *t*. We average *ILLIQ* over calendar-quarters during our sample period. Higher values of *ILLIQ* indicate that the stock is less liquid because the return to trading volume is higher.

In comparison to other liquidity measures, *ILLIQ* has the advantages that it is both widely available for all stocks with basic trading data and captures the effects of trading volume on stock price movements. Thus, *ILLIQ* reflects transaction costs (Acharya and Pedersen, 2005). Some work criticizes *ILLIQ* by arguing that the volume effect on stock returns is caused by mispricing and not compensation for illiquidity (Lou and Shu, 2017). Others note that *ILLIQ* suffers from a size bias due to the positive correlation between trading volume and market capitalization (Cochrane, 2005). Thus, in the case of two stocks with identical returns, the one with a smaller market capitalization will mechanically have a higher value of *ILLIQ*. Amihud’s *ILLIQ* also ignores time-series and cross-sectional variation in trading frequency.

19. The CIQ-KD database also contains event types 234 (“Buyback Transaction Closings”) and 233 (“Buyback Transaction Cancellations”), which are present in 3.96% and 0.02% of sample quarters, respectively.



## Bid-ask Spread

Another set of liquidity measures reflects the costs associated with executing a stock trade. One of the most popular and strongest transaction costs measures of liquidity utilizes the spread of the bid and ask price for stocks (Fong et al., 2017). Prior work notes that bid-ask spreads reflect three dimensions of trading costs: order processing costs, information asymmetry, and inventory costs (Demsetz, 1968; Stoll, 1978; Ho and Stoll, 1981).

We measure bid-ask spreads as the closing percentage quoted spread (*SPREAD*) introduced by Chung and Zhang (2014). It is estimated using daily closing bid and ask prices and is calculated in Equation (2) as follows:

$$SPREAD_{it} = \frac{1}{D_{it}} \sum_{d=1}^{D_{it}} \frac{Closing\ ask_{idt} - Closing\ bid_{idt}}{(Closing\ ask_{idt} - Closing\ bid_{idt})/2}$$

where  $SPREAD_{it}$  is the closing percentage quoted spread of stock  $i$  in the period of time  $t$ ,  $D_{it}$  is the number of trading days in time  $t$ , and  $Closing\ ask_{idt}$  and  $Closing\ bid_{idt}$  are the closing ask and bid prices of stock  $i$  on day  $d$ , respectively. Stocks with higher values of *SPREAD* are considered to be less liquid.

## Dollar Trading Volume

Trading volume-based measures of liquidity utilize the number of stock transactions to identify whether the security is more or less liquid. We use two standard measures of trading volume: dollar trading volume and stock turnover. Trading volume-based measures are intuitively linked to bid-ask spreads since a stock transaction will execute only when the bid and ask price overlap. Thus, larger bid-ask spreads imply potentially lower trading volume. However, trading volume can also impact bid-ask spreads. Easley and O'Hara (1992) argue that greater trading volume leads to larger spreads due to the information component of the bid-ask spread.

Dollar trading volume (*DVOLUME*) is the value of traded shares between buyers and sellers. Prior work shows that trading volume is a significant determinant of the liquidity component of stock prices (O'Hara, 2003) and impacts the cost of holding stocks for broker-dealers (Stoll, 1978). It is calculated in Equation (3) as:

$$DVOLUME_{it} = \sum_{j=1}^n P_{ikt} \times Vol_{ikt}$$

where  $DVOLUME_{it}$  is the dollar trading volume of stock  $i$  over the period of time  $t$ . It is computed as the sum of the dollar value of  $n$  transactions of stock  $i$  during period  $t$ .  $P_{ikt}$  and  $Vol_{ikt}$  are the price and quantity of stock  $i$  for transaction  $k$  at the time period  $t$ , respectively. Stocks with higher *DVOLUME* are considered to be more liquid. *DVOLUME* is widely used as a proxy for liquidity in the academic literature (e.g., Lee, 1993; Chordia et al., 2001).

## Stock Turnover Ratio

Another trading volume-based measure of stock liquidity is the turnover ratio (*TURN*). This measure is calculated as the number of traded shares divided by the number of shares outstanding in Equation (4) as follows:

$$TURN_{it} = \frac{1}{D_{it}} \sum_{d=1}^{D_{it}} \frac{Vol_{idt}}{Shrout_{idt}}$$

where  $TURN_{it}$  is the turnover ratio of stock  $i$  during the period of time  $t$ ,  $D_{it}$  is the number of trading days, and  $Vol_{idt}$  and  $Shrout_{idt}$  are the daily number of shares trading and shares outstanding of stock  $i$ , respectively. Prior work (e.g., Easley and O'Hara, 1992) shows that *TURN* reflects market information from trading and thus impacts stock liquidity. Moreover, since *TURN* accounts for the market capitalization of stocks, it is likely a superior trading volume-based measure of stock liquidity when compared to *DVOLUME*.

## Zero Return Days

One drawback of liquidity measures such as *ILLIQ* is that they do not account for days without trading, which likely reflects important dimensions of illiquidity (Le and Gregoriou, 2020). Thus, we compute an additional measure of liquidity based on the number of trading days with zero returns. In Equation (5), we follow Lesmond et al. (1999) by computing the ratio of the number of days with zero return divided by the total number of observable trading days (*ZEROS*):

$$ZEROS_{it} = \frac{Zero\ daily\ returns_{it}}{D_{it}}$$

where  $ZEROS_{it}$  is the ratio of the number of days with returns equal to zero for stock  $i$  during the period of time  $t$ , *Zero daily returns<sub>it</sub>* is the number of zero return days of stock  $i$  over time  $t$ , and  $D_{it}$  is the number of available trading days.

Stocks with higher values of *ZEROS* are considered less liquid. This measure is based intuitively on difficulties in trading highly illiquid stocks, higher transaction costs, and periods when investors with private information are less likely to trade (Lesmond et al., 1999; Lesmond, 2005). Prior work confirms that *ZEROS* is a strong proxy for stock liquidity (Goyenko et al., 2009).

## C. Measures of Volatility

We compute three proxies of volatility, two of which are historical measures based on realized changes in stock prices using data from CRSP. Stock return volatility (*RETVOL*) is the standard deviation of daily stock returns over the calendar-quarter. We also compute abnormal stock returns by subtracting out the daily returns of the CRSP value-weighted index. We then estimate abnormal stock return volatility (*ARETVOL*) as the standard deviation of abnormal daily returns over the calendar-quarter. Higher values of *RETVOL* and *ARETVOL* indicate greater realized return volatility. We annualize both measures by *multiplying by  $\sqrt{252}$* .

For our third measure, we ascertain implied volatility (*IVOL*) derived from the prices of stock options. These data are obtained from the OptionMetrics Standardized Options database. Following Goyal and Saretto (2009), we average the implied volatilities of the call and put contracts that are closest to at-the-money (ATM) and are one month to maturity (30 days). Higher values of *IVOL* indicate that, over the life of the option, the market expects larger changes in the underlying stock price.

Tests of stock return volatility focus on a subsample of 340,215 firm-quarters. A subsample of 194,222 firm-quarters has data on implied volatility during 2004 to 2020.

# 4. Main Results

## A. Summary Statistics

In Table 1, we present summary statistics. Firms actively repurchase shares in 27.8% of firm-quarters during our sample period. The average firm repurchases 0.3% of

shares outstanding each quarter. When conditioning on non-zero repurchase activity, sample firms repurchase an average of 1.1% of shares outstanding each quarter. We discuss time trends in buybacks in the next subsection.

	Mean	Median	Standard Deviation	Firm Quarters
<b>Buyback Activity</b>				
<i>BB_PCTOUT</i>	0.003	0.000	0.020	340,327
<i>BB_PCTOUT (non-zero)</i>	0.011	0.005	0.037	94,776
<i>BB_PCTOUT (log-transformed)</i>	0.003	0.000	0.013	340,327
<i>BB_ACTIVE</i>	0.278	0.000	0.448	340,327
<b>Buyback Disclosure</b>				
<i>BB_ANNOUNCE</i>	0.053	0.000	0.224	340,327
<i>BB_UPDATE</i>	0.267	0.000	0.442	340,327
<i>BB_EXPAND</i>	0.017	0.000	0.129	340,327
<b>Stock Liquidity</b>				
<i>ILLIQ</i>	0.191	0.001	0.955	340,327
<i>SPREAD</i>	0.009	0.002	0.018	340,327
<i>DVOLUME (\$ millions)</i>	35.700	3.196	185.135	340,327
<i>DVOLUME (log-transformed)</i>	14.746	14.977	2.706	340,327
<i>TURN</i>	0.659	0.361	9.467	340,327
<i>TURN (log-transformed)</i>	-1.163	-1.019	1.192	340,327
<i>ZERO</i>	0.033	0.016	0.047	340,327
<b>Volatility</b>				
<i>RETVOL</i>	0.499	0.395	0.435	340,219
<i>ARETVOL</i>	0.467	0.362	0.430	340,219
<i>IVOL</i>	0.474	0.408	0.257	194,222
<b>Firm Characteristics</b>				
<i>SIZE</i>	6.637	6.630	2.223	340,327
<i>LEVERAGE</i>	0.227	0.170	0.227	340,327
<i>MTB</i>	1.597	1.082	1.761	340,327
<i>ROA</i>	-0.002	0.010	0.064	340,327
<i>CASH</i>	0.202	0.097	0.241	340,327
<i>DIVIDENDS</i>	0.003	0.000	0.006	340,327
<i>R&amp;D</i>	0.013	0.000	0.031	340,327
<i>FOROPS</i>	0.370	0.000	0.483	340,327
<i>ANALYSTS</i>	4.640	2.000	6.200	340,327
<i>RANALYSTS</i>	0.002	-0.132	1.000	340,327

	Mean	Median	Standard Deviation	Firm Quarters
<i>OPTIONS</i>	0.011	0.001	0.028	340,327
<i>S&amp;P500</i>	0.099	0.000	0.299	340,327
<b>Uncertainty Measures</b>				
<i>HIEXPVOL</i>	0.500	1.000	0.500	187,192
<i>EPU</i>	0.135	0.126	0.063	340,327

Table 1: Summary Statistics

In terms of disclosure, 5.3% of firm-quarters have a new buyback announcement, which includes either plans for the board to vote on a share repurchase program or announcing that the board has approved a new program. We find that 26.7% of firm-quarters include a buyback disclosure update on the number of shares repurchased and the average repurchase price. Approximately 1.7% of firm-quarters include a disclosure to expand the duration or size of the previously announced repurchase program.

Table 1 also provides sample statistics on our key measures of liquidity and volatility. Recall that each of these measures is estimated at the daily level and then averaged across the calendar-quarter. Sample firms have an average daily Amihud illiquidity value of 0.19 and average (median) bid-ask spread of 90 (20) basis points. The average firm has \$35.7 million in daily trading volume and its stock turns over 0.66 times each day. The average sample firm has 3.3% of trading days each quarter with zero returns. The standard deviation of daily stock returns is just over 3%, which annualizes to just under 50%. Table 1 shows similar estimates of abnormal stock return volatility and implied volatility, as the average firm has an annualized average of 47% for both measures.

Across firm characteristics, the median firm has 17% debt, a return on assets close to 1%, and approximately 10% of assets in cash. These firms invest an average of 1.3% of assets in quarterly R&D, pay an average of 0.3% of assets in quarterly cash dividends, and have an average (median) market-to-book value of 1.6 (1.1). Approximately 37% of sample firms have foreign operations and the average (median) firm has 4.6 (2) analysts providing quarterly earnings forecasts. Approximately 10% of sample firms are included in the S&P500 index.

## B. Time Trends in Buybacks

### Full Sample Repurchase Activity

Figure 1 shows the time-series trend for both measures of buyback activity over the full sample period. In this figure, quarterly buyback intensity (*BB\_PCTOUT*) is depicted using bars that correspond to the left y-axis. The percentage of firms actively repurchasing shares (*BB\_ACTIVE*) is depicted as a line graph whose scale is provided on the right y-axis.

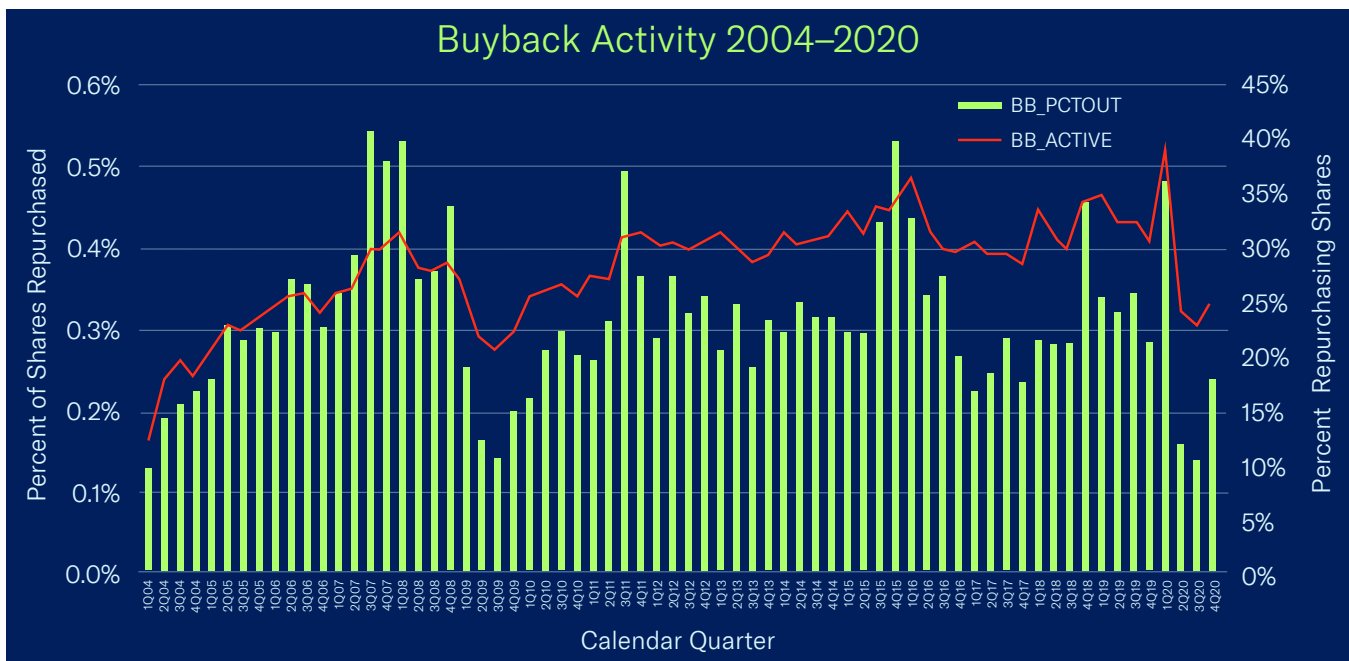


Figure 1: Buybacks over time

The plots show that both measures of buyback activity increase from 2004 to 2007. Buybacks decline during the financial crisis of 2008 and bottom out in 3Q09 before increasing again. These patterns likely correspond to periods when firms have surplus cash that can be returned to investors.

Buyback intensity spikes during 1Q08, 3Q11, 4Q15, 4Q18, and 1Q20, which tend to align with the approximate start of presidential election years. These patterns motivate us to conduct additional analyses of presidential elections in Subsection 5.2.

The presence of buyback activity increases over 1Q04 to a peak of 32% in 1Q08, before falling to 21% in 3Q09. Buyback activity increases again and peaks at 36% in 1Q16, then oscillates before it reaches a high of 39% in 1Q20.

Buyback activity fell precipitously in 2Q20 to 23%, which is a decline of over 40% from the prior quarter, likely due to the onset of the COVID-19 pandemic.

### Repurchase Activity by S&P500 Index Membership

Prior academic literature shows that buyback activity varies based on factors such as firm size and profitability (e.g., Bhattacharya and Jacobsen, 2016). Thus, in Figures 2 and 3, we further analyze time-series variation in buyback activity by partitioning our sample based on whether the firm is a member of the S&P500 index. S&P determines the constituents of the S&P500 index, which includes large capitalization stocks.<sup>20</sup>

20. A discussion of the index methodology is provided by S&P in “S&P U.S. indices methodology,” June 2021, available at <https://www.spglobal.com/spdji/en/documents/methodologies/methodology-sp-us-indices.pdf>.

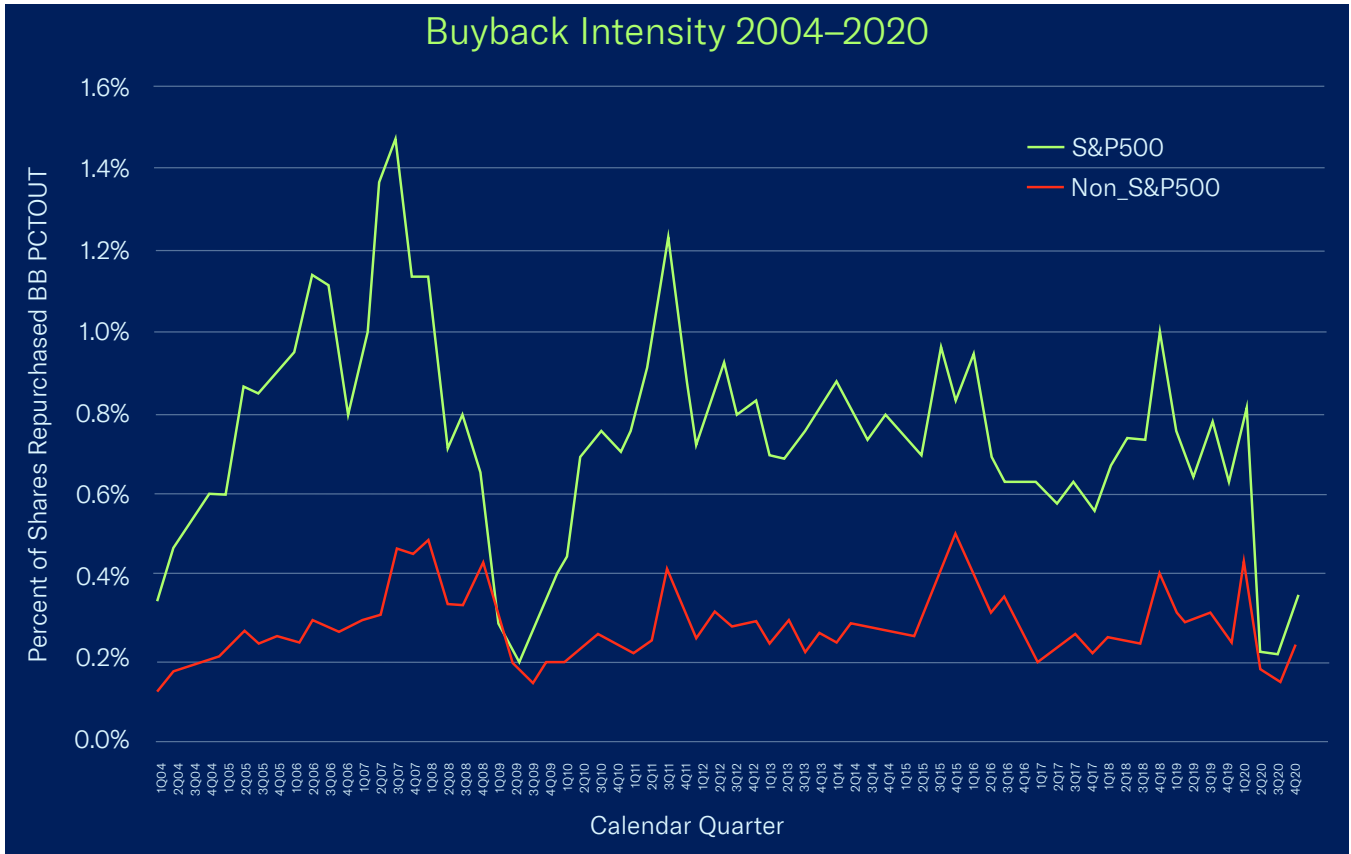


Figure 2: Share buyback intensity for S&P500 and non-S&P500 firms

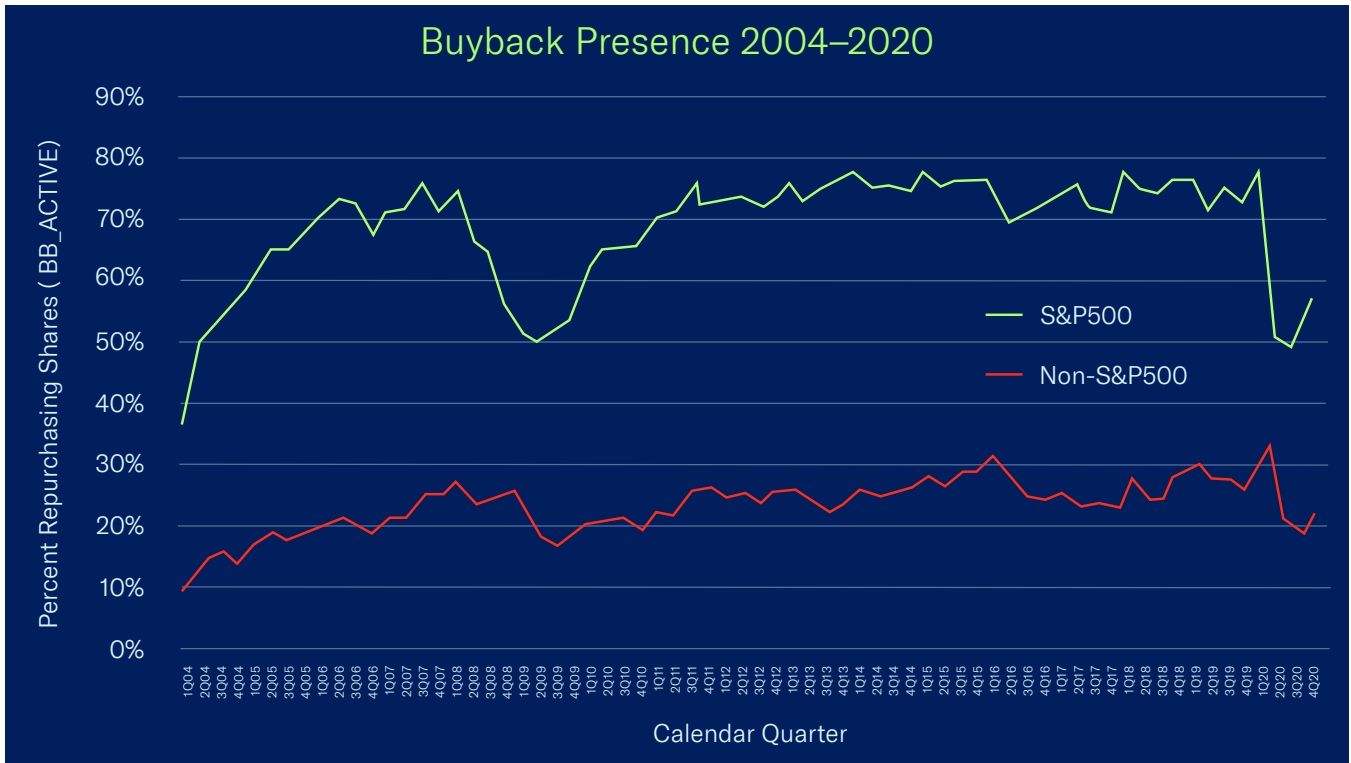


Figure 3: Share buyback presence for S&P500 and non-S&P500 firms



Figure 2 shows that variation in buyback intensity (*BB\_PCTOUT*) over time is substantially higher for firms that are members of the S&P500. For example, increases in buyback activity during 2004 to 2007 and 2009 to 2011 are more pronounced for S&P500 members. Similarly, the proportional decline in buyback activity during 2008 to 2009 and in early 2020 are stronger for S&P500 index members.

Figure 3 shows similar trends for the percentage of firms actively repurchasing shares (*BB\_ACTIVE*). For the full sample, the average percentage of repurchasing shares is 69% for S&P500 members and 23% for non-S&P500 members. These differences likely reflect substantial differences in variation in surplus cash, as larger and profitable firms, such as members of the S&P500, tend to generate

greater amounts of free cash flow. This graph reinforces the notion that younger, smaller firms need cash for investment and R&D and have less surplus cash for buyback investment than older, larger firms that tend to compose the S&P500.

### Payouts Over Time

Firms can pay out surplus cash via dividends or stock buybacks. Prior literature points to the flexibility of share repurchases as one of their desirable traits versus dividends (e.g., Brav et al., 2005). In Figure 4, we plot time-series variation in buybacks and dividends as a percentage of net income. Figure 4 shows that stock repurchase exhibits substantially more variation than dividends, especially during periods when profitability are higher (e.g., 2007) or lower (e.g., 2009).

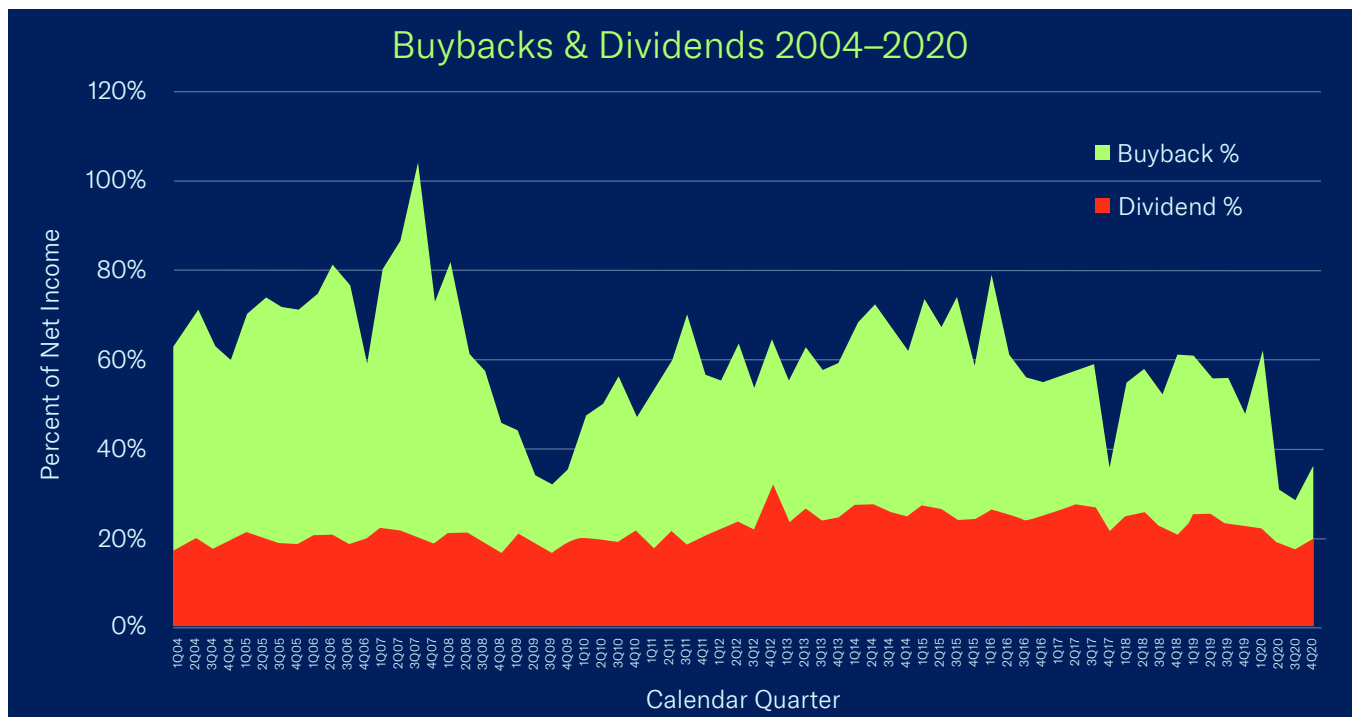


Figure 4: Payouts over time

## C. Correlation of Buybacks with Stock Liquidity and Volatility

We present a pairwise correlation matrix of our buyback, liquidity, and volatility measures in Table 2. Columns (1) and (2) provide initial evidence that buyback activity is correlated with lower levels of stock illiquidity and volatility. For example, the presence of buyback activity in a calendar-

quarter is correlated with 15.4% lower bid-ask spreads, on average, and a 17% reduction in stock return volatility in Column (2), both of which are statistically different from zero at the 5% level or better. Moreover, Column (3) shows that the measures of liquidity and volatility are highly, but not perfectly, correlated with each other. Thus, each of these measures likely reflects unique dimensions of liquidity and volatility.

	<i>BB_PCTOUT</i>	<i>BB_ACTIVE</i>	<i>ILLIQ</i>	<i>SPREAD</i>	<i>DVOLUME</i>	<i>TURN</i>	<i>ZERO</i>	<i>RETVOL</i>	<i>ARETVOL</i>	<i>IVOL</i>
<i>BB_PCTOUT</i>	1.0000									
<i>BB_ACTIVE</i>	0.2502*	1.0000								
<i>ILLIQ</i>	-0.0172*	-0.0706*	1.0000							
<i>SPREAD</i>	-0.0360*	-0.1541*	0.6890*	1.0000						
<i>DVOLUME</i>	0.0770*	0.3016*	-0.3876*	-0.6155*	1.0000					
<i>TURN</i>	0.0448*	0.0839*	-0.3320*	-0.4554*	0.6867*	1.0000				
<i>ZERO</i>	-0.0363*	-0.1614*	0.2668*	0.4056*	-0.5408*	-0.3930*	1.0000			
<i>RETVOL</i>	-0.0354*	-0.1660*	0.2303*	0.4257*	-0.2224*	0.1500*	0.0987*	1.0000		
<i>ARETVOL</i>	-0.0400*	-0.1868*	0.2562*	0.4663*	-0.2765*	0.1072*	0.1480*	0.9891*	1.0000	
<i>IVOL</i>	-0.0624*	-0.2577*	0.0509*	0.4900*	-0.4382*	0.2240*	0.2244*	0.7447*	0.7431*	1.0000

Table 2: Correlation Matrix

## D. Buybacks and Liquidity

In this subsection, we formally test the relation between buyback activity and stock liquidity by estimating the following equation using ordinary least squares (OLS) regressions in Equation (6):

$$Liquidity_{it} = \alpha + \beta_1 Buyback_{it} + X_{it} + Industry\ FE + Time\ FE + \epsilon_{it}$$

where each of the liquidity *measures* (*ILLIQ*, *SPREAD*, *DVOLUME*, *TURN*, *ZERO*) of stock *i* during the calendar-quarter *t* are tested separately as the dependent variables. The variable of interest, *Buyback<sub>it</sub>*, is estimated separately using *BB\_PCTOUT* and *BB\_ACTIVE*, which allows us to estimate the intensive and extensive margins of stock repurchases on liquidity. We include calendar-quarter fixed effects, which adjust for time trends in liquidity and volatility, and industry fixed effects using two-digit Standard Industrial Classification

(SIC) codes to control for time-invariant industry-level factors.<sup>21</sup> For each regression, we estimate  $t$ -statistics based on robust standard errors double clustered at the firm and calendar-quarter level.

Based on extant academic research (e.g., Bhattacharya and Jacobsen, 2016), we include a vector of firm controls ( $X_{it}$ ) that adjust our regression estimates for a wide range of firm characteristics. The Appendix defines these variables, which include standard controls such as firm size (*SIZE*), debt financing (*LEVERAGE*), market-to-book (*MTB*), return on assets (*ROA*), cash holdings (*CASH*), dividend payouts (*DIVIDENDS*), and investments in research and development (*R&D*) based on quarterly data from Compustat. All quarterly control variables are measured in the fiscal period that ends during the same calendar-quarter as the dependent measures of liquidity. However, the relation between buybacks and liquidity is similar if we lag these variables by one fiscal period.

Using annual Compustat data, we generate a foreign operations indicator variable (*FOROPS*) that equals 1 if the firm has a non-missing, non-zero value for pre-tax income from foreign operations in the fiscal year. We also control for analyst coverage (*ANALYSTS*) by counting the number of analysts providing quarterly earnings per share estimates using data from I/B/E/S. For our regressions, we orthogonalize analysts following with respect to firm size since large firms tend to attract more analysts. Thus, the variable residual analyst following (*RANALYSTS*) gauges the portion of analyst coverage not explained by firm size. We control for stock options by taking the natural log of 1 plus the ratio of stock options granted to common shares outstanding in the prior fiscal year (*OPTIONS*). Finally, we use a Python script to obtain information on membership in the Standard & Poor's 500 index (*S&P500*) from the CRSP database.

We report estimates of Equation (6) in Table 3. Panel A uses buyback intensity (*BB\_PCTOUT*) as the variable of interest. Across all five measures of liquidity, the coefficient on *BB\_PCTOUT* is statistically different from zero at the 1% level and indicates that greater buyback intensity is correlated with better stock liquidity. For example, in tests of *SPREAD* in Column (2), the coefficient on *BB\_PCTOUT* is  $-0.023$  with a  $t$ -statistic of  $-4.77$  ( $p$ -value  $< 0.001$ ), which indicates that, all else equal, firms buying back a greater portion of their outstanding shares within a calendar-quarter tend to have significantly lower average bid-ask spreads.

21. The relation between buybacks and liquidity are similar if we replace industry fixed effects with firm fixed effects. We utilize industry fixed effects to avoid a reduction in sample size due to singleton observations.

	<i>ILLIQ</i>	<i>SPREAD</i>	<i>DVOLUME</i>	<i>TURN</i>	<i>ZERO</i>
Panel A: Intensity of buybacks					
<i>BB_PCTOUT</i>	-0.754*** (-3.95)	-0.023*** (-4.77)	5.959*** (8.99)	3.185*** (7.44)	-0.035*** (-4.18)
<i>SIZE</i>	-0.160*** (-11.60)	-0.005*** (-15.55)	1.082*** (70.37)	0.246*** (18.55)	-0.011*** (-26.19)
<i>LEVERAGE</i>	0.176*** (5.92)	0.005*** (7.42)	-0.651*** (-11.31)	0.138*** (3.46)	0.014*** (10.69)
<i>MTB</i>	-0.050*** (-7.98)	-0.001*** (-10.65)	0.396*** (35.70)	0.065*** (7.75)	-0.005*** (-20.45)
<i>ROA</i>	-0.319** (-2.57)	-0.025*** (-8.95)	0.799*** (2.74)	-1.075*** (-4.26)	-0.043*** (-5.59)
<i>CASH</i>	-0.253*** (-6.77)	-0.006*** (-8.12)	0.843*** (15.01)	0.709*** (16.19)	-0.005*** (-3.43)
<i>DIVIDENDS</i>	-3.808*** (-5.66)	-0.086*** (-6.27)	3.198 (1.61)	-13.969*** (-9.57)	-0.251*** (-7.65)
<i>R&amp;D</i>	-1.588*** (-6.04)	-0.035*** (-7.66)	1.809*** (4.28)	0.297 (0.85)	-0.022* (-1.99)
<i>FOROPS</i>	-0.031*** (-2.75)	-0.001*** (-5.17)	0.190*** (7.32)	0.006 (0.30)	-0.003*** (-5.59)
<i>ANALYSTS</i>	-0.001 (-0.16)	-0.001*** (-6.79)	0.431*** (27.77)	0.161*** (16.44)	-0.003*** (-11.83)
<i>OPTIONS</i>	-0.629*** (-3.43)	-0.016*** (-3.42)	1.601*** (3.20)	1.458*** (3.33)	-0.035*** (-3.88)
<i>S&amp;P500</i>	0.338*** (11.73)	0.009*** (15.31)	0.141*** (3.30)	-0.330*** (-9.79)	0.017*** (14.55)
Industry FE	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Firm Quarters	340,323	340,323	340,323	340,323	340,323
Adjusted R <sup>2</sup>	0.120	0.320	0.792	0.292	0.277

	<i>ILLIQ</i>	<i>SPREAD</i>	<i>DVOLUME</i>	<i>TURN</i>	<i>ZERO</i>
Panel B: Extent of buybacks					
<i>BB_ACTIVE</i>	-0.047*** (-5.35)	-0.002*** (-9.02)	0.242*** (13.88)	0.009 (0.68)	-0.003*** (-7.59)
<i>SIZE</i>	-0.158*** (-11.54)	-0.005*** (-15.47)	1.076*** (70.06)	0.247*** (18.51)	-0.011*** (-25.92)
<i>LEVERAGE</i>	0.173*** (5.84)	0.005*** (7.33)	-0.635*** (-11.01)	0.139*** (3.47)	0.014*** (10.56)
<i>MTB</i>	-0.050*** (-7.97)	-0.001*** (-10.64)	0.395*** (35.74)	0.064*** (7.67)	-0.005*** (-20.50)
<i>ROA</i>	-0.303** (-2.43)	-0.024*** (-8.75)	0.734** (2.51)	-1.050*** (-4.15)	-0.042*** (-5.43)
<i>CASH</i>	-0.258*** (-6.89)	-0.006*** (-8.33)	0.870*** (15.45)	0.712*** (16.12)	-0.005*** (-3.62)
<i>DIVIDENDS</i>	-3.660*** (-5.43)	-0.081*** (-5.91)	2.422 (1.22)	-14.028*** (-9.61)	-0.243*** (-7.40)
<i>R&amp;D</i>	-1.586*** (-6.04)	-0.035*** (-7.67)	1.806*** (4.28)	0.302 (0.86)	-0.022* (-1.98)
<i>FOROPS</i>	-0.029** (-2.54)	-0.001*** (-4.84)	0.179*** (6.96)	0.008 (0.37)	-0.003*** (-5.33)
<i>ANALYSTS</i>	0.001 (0.33)	-0.001*** (-6.19)	0.422*** (27.49)	0.163*** (16.59)	-0.003*** (-11.42)
<i>OPTIONS</i>	-0.636*** (-3.46)	-0.016*** (-3.45)	1.643*** (3.24)	1.463*** (3.33)	-0.035*** (-3.90)
<i>S&amp;P500</i>	0.347*** (11.91)	0.010*** (15.63)	0.100** (2.36)	-0.323*** (-9.68)	0.017*** (15.10)
Industry FE	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Firm Quarters	340,323	340,323	340,323	340,323	340,323
Adjusted R <sup>2</sup>	0.121	0.321	0.792	0.291	0.278

Table 3: Buybacks and Liquidity

In Panel B, we report regression results where the buyback indicator (*BB\_ACTIVE*) is the variable of interest. Across all measures of liquidity except turnover, the presence of buyback activity is statistically related to liquidity improvements in the stock at the 1% level. Moreover, the magnitude of improvements in liquidity is economically meaningful. For example, in tests of *SPREAD* in Column (2), the coefficient on *BB\_ACTIVE* is  $-0.00155$  (which is rounded to  $-0.002$  in the table). This 15.5-basis-point reduction is a 17.9% relative decline in bid-ask spreads from the sample mean (0.00867) for firms that are actively repurchasing shares.

**Key Takeaway 1:** Companies that repurchase shares provide liquidity to the stock market. Greater investment in stock buybacks equates to larger improvements in liquidity. In turn, this liquidity reduces transaction costs for all investors and helps facilitate orderly markets.

## E. Buybacks and Volatility

We next test the formal relation between buyback activity and return volatility by estimating Equation (7) using OLS:

$$\text{Volatility}_{it} = \alpha + \beta_1 \text{Buyback}_{it} + X_{it} + \text{Industry FE} + \text{Time FE} + \epsilon_{it}$$

where each of the liquidity *measures* (*RETVOL*, *ARETVOL*, *IVOL*) of stock *i* during the calendar-quarter *t* are tested separately as the dependent variables. The variables of interest, fixed effects, standard error clustering, and control variables are all identical to tests of liquidity in Equation (6). The results are reported in Table 4.

	<i>RETVOL</i>	<i>ARETVOL</i>	<i>IVOL</i>	<i>RETVOL</i>	<i>ARETVOL</i>	<i>IVOL</i>
<i>BB_PCTOUT</i>	-0.632*** (-4.89)	-0.626*** (-5.01)	-0.658*** (-6.68)			
<i>BB_ACTIVE</i>				-0.050*** (-14.21)	-0.053*** (-17.19)	-0.037*** (-14.76)
<i>SIZE</i>	-0.058*** (-29.87)	-0.069*** (-27.50)	-0.059*** (-32.48)	-0.057*** (-29.55)	-0.067*** (-27.26)	-0.059*** (-32.08)
<i>LEVERAGE</i>	0.206*** (11.49)	0.211*** (11.53)	0.136*** (13.23)	0.203*** (11.39)	0.208*** (11.43)	0.133*** (12.90)
<i>MTB</i>	-0.008*** (-4.38)	-0.011*** (-5.33)	-0.017*** (-11.48)	-0.008*** (-4.34)	-0.011*** (-5.30)	-0.017*** (-11.44)
<i>ROA</i>	-1.347*** (-20.37)	-1.329*** (-21.17)	-1.126*** (-23.04)	-1.328*** (-20.29)	-1.308*** (-21.05)	-1.105*** (-22.57)
<i>CASH</i>	0.036** (2.43)	0.034** (2.45)	0.131*** (12.41)	0.030** (2.08)	0.028** (2.06)	0.124*** (11.98)
<i>DIVIDENDS</i>	-5.833*** (-17.88)	-5.678*** (-17.95)	-4.858*** (-17.41)	-5.679*** (-17.56)	-5.514*** (-17.60)	-4.737*** (-17.00)

	<i>RETVOL</i>	<i>ARETVOL</i>	<i>IVOL</i>	<i>RETVOL</i>	<i>ARETVOL</i>	<i>IVOL</i>
<i>R&amp;D</i>	-0.754*** (-5.92)	-0.789*** (-6.22)	0.054 (0.59)	-0.753*** (-5.93)	-0.787*** (-6.23)	0.050 (0.55)
<i>FOROPS</i>	-0.021*** (-5.89)	-0.027*** (-7.39)	-0.025*** (-7.71)	-0.018*** (-5.18)	-0.024*** (-6.68)	-0.023*** (-7.20)
<i>ANALYSTS</i>	-0.009*** (-5.15)	-0.011*** (-6.72)	-0.015*** (-10.86)	-0.007*** (-3.97)	-0.009*** (-5.44)	-0.014*** (-10.04)
<i>OPTIONS</i>	0.122*** (2.70)	0.106** (2.49)	0.332** (2.29)	0.114** (2.57)	0.097** (2.33)	0.324** (2.29)
<i>S&amp;P500</i>	0.045*** (7.92)	0.059*** (10.01)	0.023*** (5.65)	0.055*** (9.38)	0.070*** (11.57)	0.030*** (7.57)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm Quarters	340,215	340,215	194,222	340,215	340,215	194,222
Adjusted R <sup>2</sup>	0.332	0.322	0.605	0.334	0.324	0.608

Table 4: Buybacks and Volatility

Columns (1) to (3) use buyback intensity (*BB\_PCTOUT*) as the variable of interest and (4) to (6) use buyback presence (*BB\_ACTIVITY*). Across all six regression estimates, we find strong evidence that stock buybacks are statistically related to lower volatility at the 1% level. For example, the coefficient in Column (4) indicates that firms actively repurchasing their shares have a 5.0 percentage point reduction in return volatility (*RETVOL*) during the quarter, which is significant at the 1% level. When compared to the average quarterly volatility of 0.499, this indicates that the presence of buyback activity is associated with 10% lower stock return variation during the quarter. The results are similar if we use abnormal stock return volatility (*ARETVOL*) that adjusts for total stock market variation or use forward-looking estimates of implied volatility (*IVOL*) for the subsample that has traded stock options.

Key Takeaway 2: Stock buybacks are associated with significant reductions in both realized and anticipated stock return volatility. Thus, bans or limitations on buyback activity would likely result in higher stock market volatility.

## F. Buybacks and Investor Savings

Firms that repurchase shares provide liquidity support to investors that want to sell positions. Liquidity support has three separate components: (1) the reduction in actual transaction costs (narrowing the bid-ask spread), (2) the reduction of price impact costs stemming from lower volatility, and (3) the implicit level of price support that a firm provides when it actively attempts to maintain prices at their fundamental values. We provide estimates of the cost savings related to lower transaction and price impact costs. The third benefit is unobservable and does not lend itself to estimation.



## Transaction Costs

We first consider how improvements in bid-ask spreads benefit all investors by reducing transaction costs. Recall from Table 2 that in tests of *SPREAD*, the coefficient on *BB\_ACTIVE* was  $-0.00155$ . This result indicates that firms actively repurchasing shares have a 15.5-basis-point reduction in transaction costs.<sup>22</sup> To quantify the total bid-ask spread savings (*SPREAD SAVINGS*) for investors in our sample, we specify Equation (8) as follows:

$$SPREAD\ SAVINGS_{i,t} = -0.0155 \times SPREAD_{i,t} \times DVOLUME_{i,t} \times BB\_ACTIVE_{i,t}$$

where *SPREAD* is the average closing bid-ask spread for stock *i* in period *t*, which we define in Subsection 3.2.2.; *DVOLUME* is the sum of dollar trading volume of stock *i* over the period of time *t*, which we define in Subsection 3.2.3.; and *BB\_ACTIVE* equals 1 for firms repurchasing shares during the quarter. Thus, *SPREAD SAVINGS* represent the transaction cost savings for each stock and quarter in our sample. We scale this value by the number of trading days to calculate the daily average savings in bid-ask spreads and present the results in Panel A of Table 5.

	Full Sample	Buyback Percent Quintiles				
		Q1	Q2	Q3	Q4	Q5
<b>Panel A. Transaction Costs</b>						
<i>Spread Savings</i>						
Average per day (\$)	53.7	65.2	40.7	50.5	55.8	56.4
Average per quarter (\$)	3,381	4,110	2,554	3,181	3,513	3,548
Total per year (\$ millions)	18.8	4.6	2.8	3.5	3.9	4.0
Total all years (\$ millions)	320.4	77.9	48.4	60.3	66.6	67.3
<b>Panel A. Transaction Costs</b>						
<i>Price Impact Savings (PIS)</i>						
Average per day (\$)	13.09	1.70	7.04	13.16	17.64	25.94
Average per quarter (\$)	3,554	3	118	1,458	4,760	11,431
Total per year (\$ millions)	1,245	0.2	8.3	102.2	333.5	800.8
Total all years (\$ millions)	21,164	3	141	1,737	5,670	13,614

Table 5: Buybacks and Investor Savings

22. One basis point is equivalent to 0.01% or 1/100th of a percent.

The average buyback firm generates \$53.7 in savings in bid-ask spreads per trading day. Summing this value for each sample firm across the calendar-quarter shows that the average buyback firm saves investors \$3,381 in spreads per quarter. Using the percentage of shares repurchased (*BB\_PCTOUT*) each quarter, we sort repurchasing firms into quintiles. We then report the estimates of spread savings for each quintile, which range from \$2,554 per quarter for those in the second quintile to \$3,548 per quarter for those in the highest quintile. Interestingly, the average firm in the lowest quintile of buyback intensity (Q1) has the largest amount of spread savings at \$4,110 per quarter. Across all firms in our sample, spread savings total to \$18.8 million per year or \$320.4 million for the full sample period.<sup>23</sup>

## Price Impact

We next estimate the buyback savings to investors stemming from reductions in the price impact aspect of liquidity. Since price impact typically increases with volatility, firms that provide liquidity during periods when there is net selling pressure will reduce the corresponding price impact associated with investor demand for liquidity.<sup>24</sup> We estimate the price impact savings from buyback-induced reductions in volatility using the so-called “square-root” model (Gomes and Waelbroeck, 2015). According to this model, price impact (*PI*) is a function of the square root of the

relative trade size and daily price volatility, which we define in Equation (9) as:

$$PI_{i,t} = 2.8\sigma_{i,t} \sqrt{Q_{i,t} / V_{i,t}}$$

where  $\sigma_{i,t}$  is the daily stock return volatility for firm  $i$  on day  $t$ ,  $Q_{i,t}$  is the number of shares of firm  $i$  repurchased on day  $t$ , and  $V_{i,t}$  is average daily trading volume for firm  $i$  on day  $t$ . The estimate of the 2.8 scale factor is obtained from Gomes and Waelbroeck (2015).

We then estimate the price impact savings (*PIS*) in Equation (10) as:

$$PIS_{i,t} = 2.8 \frac{0.05}{\sqrt{252}} \sqrt{Q_{i,t} / V_{i,t}} \times BB\_ACTIVE_{i,t}$$

where 0.05 is the coefficient on *BB\_ACTIVE* from Table 4, which is the reduction in annualized volatility for firms that repurchase shares in a specific quarter  $q$ . For estimation purposes, we convert the quarterly number of shares repurchased to a daily estimate by assuming that shares are purchased ratably over the quarter—that is,  $Q_{i,t}$  is estimated as a rolling average of daily trading volume in stock  $i$  over the 60 trading days prior to day  $t$ .  $V_{i,t}$  equals 1 for firms that are actively repurchasing shares during the quarter, and otherwise 0.

23. An alternative approach to estimating transaction cost savings is to estimate bid-ask spread savings based on the average daily dollar volume in our sample, which is \$74.1 million for firms that are actively repurchasing shares. Multiplying the average daily dollar volume times the savings in bid-ask spread of 15.5 basis points indicates that investors save \$74.1 million  $\times$  0.00155 = \$114,855 per trading day, which multiplied by 62.91 trading days per quarter equates to \$7.23 million per quarter on average. Our sample period includes 68 calendar-quarters, indicating the savings in bid-ask spreads totals \$497.4 million over 2004 to 2020.

24. Although a reduction in volatility seems intuitively beneficial, a brief discussion is warranted. In finance, the classical view is that risk—such as volatility—and expected return are positively related as risk-averse investors demand compensation for bearing more risk. For example, the Capital Asset Pricing Model posits that the expected returns of a well-diversified investor’s portfolio are positively related to the portfolio’s exposure to the risk of the overall market. Thus, one might erroneously conclude that if buybacks reduce volatility, it follows that investors will experience lower returns. This type of logic is flawed because buybacks are designed to reduce temporary volatility spikes associated with price pressure and would not be expected to affect systemic risk.

Next, in Equation (11), we estimate the dollar value of the price impact on day  $t$  for firm  $i$  as:

$$DPIS_{i,t} = PIS_{i,t} Q_{i,t} \hat{P}_{i,t}$$

where  $\hat{P}_{i,t}$  is the average of the closing prices on days  $t-1$  and  $t$  for firm  $i$ . The results of Equations (10) and (11) are presented in Panel B of Table 5.

The mean price impact savings per trade is 13.09 basis points. Across the quintiles of percentage of shares repurchased, estimates of price impact range from 1.70 to 25.94 basis points for firms in the lowest and highest quintiles of share repurchase intensity. As one would expect, the price impact benefits associated with the provision of liquidity via buybacks are the highest for firms that are the most active.

The mean dollar price impact savings per trade is \$3,554. Estimates of the price

impact savings range from \$3 to \$11,431 for firms in the lowest and highest repurchase intensity quintiles. The aggregate cost savings per year over the full sample is \$1,245 million, which totals to \$21,165 million of liquidity-induced losses that investors were able to avoid for the full sample period. We note that the estimated price impact savings in this table are losses that investors are able to avoid when companies provide liquidity via repurchases. These savings are not related to losses attributable to changes in the underlying intrinsic value of the firm's stock.

In Figure 5, we graph the aggregate investor benefits from spread savings and price impact across each year in our sample period. As the figure shows, the majority of buyback-induced liquidity savings stem from reductions in price impact. The peak savings in bid-ask spreads occur in 2008 at \$55 million, while the peak price impact occurs in 2018 at just over \$2 billion.

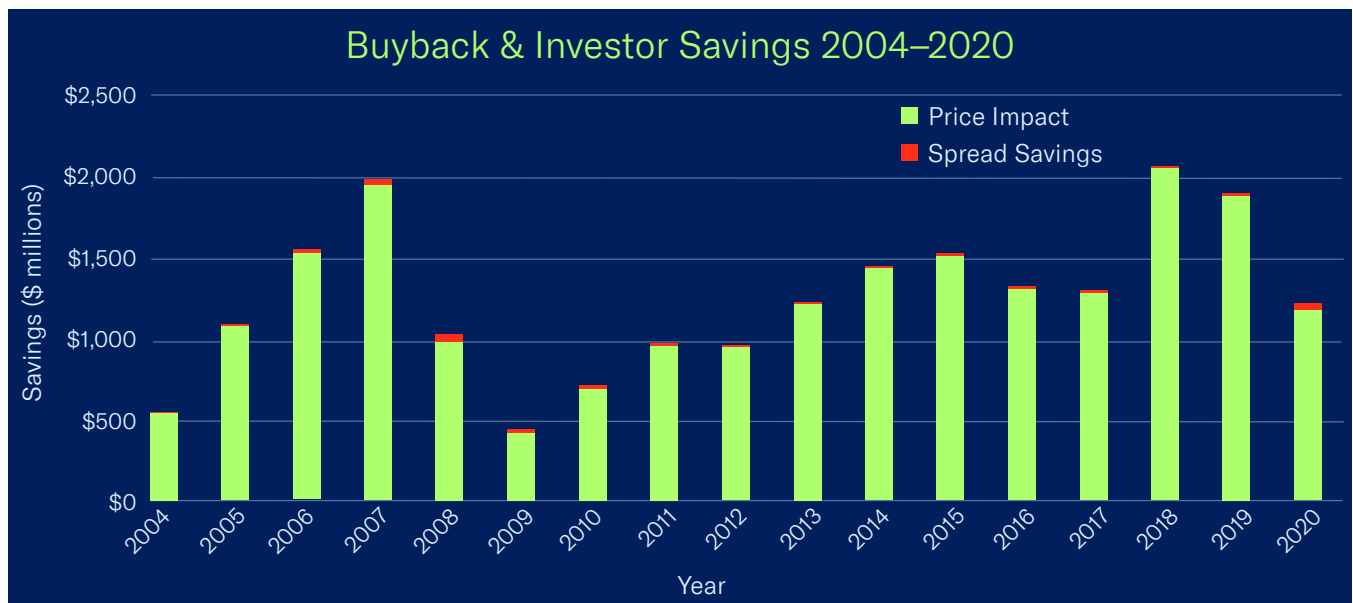


Figure 5: Investor benefits of buybacks

## Retail Investors

We next consider how the price impact and transaction cost benefits of share repurchases benefit retail investors. To quantify the benefit for retail investors, we first consider their fraction of market participation. Estimates of retail investor participation range from 10% to 14% of U.S. equity trades before commission-free trading was introduced in 2013, and now represent as much as 23% in 2021.<sup>25</sup>

Table 5 shows that, during our sample period, buybacks generated \$320 million in spread savings and \$21,164 million in price impact savings for investors. Given that retail investors represent from 10% to 20% of order flow, we estimate that the liquidity provision of buybacks saved retail investors \$2.1 to \$4.3 billion during our full sample period. These values equate to retail investor savings of \$126 to \$253 million per year due to buyback activity.

Key Takeaway 3: Stock buybacks generate economically large benefits for retail investors. Since the SEC revised buyback activity disclosures in 2004, we estimate that buybacks have saved retail investors \$2.1 to \$4.2 billion in transaction and price impact costs.

25. See Katie Martin and Robin Wigglesworth, "Rise of the retail army: the amateur traders transforming markets," *Financial Times*, March 8, 2021, available at <https://www.ft.com/content/7a91e3ea-b9ec-4611-9a03-a8dd3b8bddb5>; Bloomberg Intelligence, "Stock-market gamification unlikely to end soon or draw new rules," *Bloomberg*, February 19, 2021, available at <https://www.bloomberg.com/professional/blog/stock-market-gamification-unlikely-to-end-soon-or-draw-new-rules/>; and Bill Hertz and David Aferiat, "Survey on the 2021 State of the Independent Retail Investor," *Nasdaq*, May 25, 2021, available at <https://www.nasdaq.com/articles/survey-on-the-2021-state-of-the-independent-retail-investor-2021-05-25>.

## 5. Additional Tests

### A. Buybacks and Future Uncertainty

The evidence so far indicates that stock repurchase activity is correlated with reductions in stock illiquidity and volatility. In this subsection, we ask whether market-based measures of future volatility and uncertainty influence the properties of stock buybacks. For these tests, we compute expected volatility (*EXPVOL*) as the ratio of the implied volatility on the 30-day ATM stock options divided by the *adjusted* implied volatility on the 91-day ATM stock options on the first day of each calendar-quarter. For this measure, we adjust the implied volatility of the 91-day options to remove the implied volatility component of the 30-day options. We then partition the sample with data in OptionMetrics and create a variable, *HIEXPVOL*, that equals 1 if the firm's expected volatility is above the sample median value for each calendar-quarter; and else 0. We then estimate Equation (12) as follows:

$$Buyback_{it} = \alpha + \beta_1 HIEXPVOL_{it} + X_{it} + Industry\ FE + Time\ FE + \epsilon_{it}$$

where each of the buyback measures (*BB\_PCTOUT*, *BB\_ACTIVE*, *BB\_ANNOUNCE*, *BB\_UPDATE*, and *BB\_EXPAND*) of stock *i* during the calendar-quarter *t* are tested separately as the dependent variables. All control variables, fixed effects, and standard error clustering are identical to Equations (6) and (7). Since these regressions include high dimensional fixed effects, we follow the advice of Greene (2004) in using a linear probability model via OLS rather than a *maximum likelihood estimator* to test the dependent indicator variables *BB\_ACTIVE*, *BB\_ANNOUNCE*, *BB\_UPDATE*, and *BB\_EXPAND*. If managers strategically use stock repurchases to calm markets during periods of high expected volatility, we anticipate that firms with higher *expected volatility* will be more proactive in repurchasing shares during the quarter in order to attenuate the market's expectation of volatility. Thus, we expect a positive coefficient on  $\beta_1$ .

	<i>BB_PCTOUT</i>	<i>BB_ACTIVE</i>	<i>BB_ANNOUNCE</i>	<i>BB_UPDATE</i>	<i>BB_EXPAND</i>
<i>HIEXPVOL</i>	0.002*** (11.18)	0.119*** (17.47)	0.017*** (8.55)	0.121*** (11.73)	0.012*** (9.28)
<i>SIZE</i>	-0.000 (-1.39)	0.006** (2.02)	0.012*** (8.60)	0.005 (1.54)	-0.000 (-0.09)
<i>LEVERAGE</i>	0.001** (2.13)	-0.046** (-2.50)	-0.035*** (-6.12)	-0.098*** (-4.59)	-0.008** (-2.46)
<i>MTB</i>	-0.000*** (-8.89)	-0.007*** (-2.98)	-0.001 (-1.63)	-0.014*** (-5.94)	0.000 (0.39)
<i>ROA</i>	0.019*** (12.29)	0.869*** (12.22)	0.256*** (10.47)	1.007*** (12.19)	0.147*** (6.81)

	<i>BB_PCTOUT</i>	<i>BB_ACTIVE</i>	<i>BB_ANNOUNCE</i>	<i>BB_UPDATE</i>	<i>BB_EXPAND</i>
<i>CASH</i>	0.002* (1.77)	-0.124*** (-5.88)	0.022*** (3.61)	-0.106*** (-3.87)	0.005 (1.23)
<i>DIVIDENDS</i>	-0.048*** (-4.16)	1.281* (1.89)	-0.212 (-1.09)	2.968*** (4.30)	-0.060 (-0.46)
<i>R&amp;D</i>	0.008 (1.62)	-0.029 (-0.17)	0.135*** (2.67)	-0.076 (-0.41)	0.079* (1.90)
<i>FOROPS</i>	0.001*** (3.99)	0.064*** (6.83)	-0.001 (-0.44)	0.062*** (5.79)	0.002 (1.27)
<i>ANALYSTS</i>	0.000*** (7.22)	0.041*** (10.59)	-0.000 (-0.28)	0.025*** (6.58)	0.002*** (2.93)
<i>OPTIONS</i>	0.001 (0.54)	-0.202** (-2.07)	0.015 (0.66)	-0.347** (-2.45)	-0.008 (-0.59)
<i>S&amp;P500</i>	0.003*** (9.30)	0.237*** (16.85)	0.002 (0.35)	0.135*** (8.09)	0.008*** (3.26)
Industry FE	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Firm Quarters	186,863	186,863	186,863	186,863	186,863
Adjusted R <sup>2</sup>	0.049	0.195	0.024	0.286	0.016

Table 6: Future Uncertainty and Buybacks

The results are reported in Table 6. Columns (1) and (2) indicate that firms with higher expected volatility on the first day of the quarter—where *HIEXPVOL* equals 1—tend to be more active and intensive with their buyback activity during the quarter. For example, the positive coefficient on *HIEXPVOL* in Column (2) is significant at the 1% level and indicates that firms with above-median values of expected volatility are 11.9% more likely to actively repurchase shares.

Column (3) shows that firms with higher expected volatility are also more likely to authorize a new buyback (*BB\_ANNOUNCE*). The coefficient of 0.017 on *HIEXPVOL* is 32% of the sample mean of buyback announcements (0.053) and

is significantly different from zero at the 1% level (*p-value*<0.001). The results in Columns (4) and (5) indicate that firms with high expected volatility also provide substantially more buyback updates and are more likely to expand the duration or magnitude of the repurchase program.

Overall, the regression estimates in Table 4 imply that managers can potentially influence volatility through their buyback activity. Table 6 extends this result and shows that managers utilize forward-looking estimates of volatility to inform their buyback decisions. The latter result is important as it helps attenuate potential concerns of coefficient bias due to endogeneity via reverse causality. In other words, one might

be concerned that the negative relation between buybacks and volatility shown in Table 4 could be interpreted as either (1) that buybacks reduce volatility or (2) that managers conduct more buybacks when volatility is lower. However, the results in Table 6 show that buyback activity is stronger when forward-looking volatility is higher and not lower as would be the case with reverse causality under interpretation (2). Thus, the evidence indicates that managers use buybacks to reduce volatility.

**Key Takeaway 4:** Managers attenuate volatility through their buyback activities and utilize market-based estimates of future volatility to inform their buyback decisions. When future volatility is expected to be higher, managers increase their buyback intensity.

## B. Buybacks and Policy Uncertainty

To shed more light on the direction of causality between uncertainty and buyback activity, we conduct an additional analysis using exogenous variation in political uncertainty. Prior work links political uncertainty to plausibly exogenous deteriorations in overall market quality and liquidity (Pasquariello and Zafeiridou, 2014; Boone et al., 2021). For these tests, we use the economic policy uncertainty (*EPU*) index developed by Baker et al. (2016), which we obtain from the website [policyuncertainty.com](http://policyuncertainty.com). For our analyses, we download the normalized monthly *EPU* index based on the relative volume of news articles discussing terms that reflect policy-related economic uncertainty. We then average these values at the calendar-quarter level

and estimate regressions of buyback activity and disclosure as dependent variables.<sup>26</sup>

In particular, we estimate Equation (13) using OLS regressions:

$$Buyback_{it} = \alpha + \beta_1 EPU_t + X_{it} + Firm\ FE + \epsilon_{it}$$

where each of the buyback measures (*BB\_PCTOUT*, *BB\_ACTIVE*, *BB\_ANNOUNCE*, *BB\_UPDATE*, and *BB\_EXPAND*) of stock *i* during the calendar-quarter *t* are tested separately as the dependent variables. All control variables are identical to Equations (6) and (7). However, since the variable of interest, *EPU*, is identical across all firms in a calendar-quarter, we do not include calendar-quarter fixed effects as these would absorb all variation in the *EPU* index. We also use firm fixed effects (which absorbs industry fixed effects) but the results are similar with either choice. We cluster standard errors at the firm level.

26. To confirm that economic policy uncertainty induces market volatility, we examine the correlation between the *EPU* index and the CBOE Volatility Index (*VIX*). We find a 49% correlation between quarterly variation in the *EPU* index and *VIX* during 2004 to 2020, which is statistically different from zero at the 1% level.



	<i>BB_PCTOUT</i>	<i>BB_ACTIVE</i>	<i>BB_ANNOUNCE</i>	<i>BB_UPDATE</i>	<i>BB_EXPAND</i>
<i>EPU</i>	-0.000 (-0.34)	0.114*** (5.72)	-0.073*** (-9.95)	1.136*** (48.38)	0.007 (1.63)
<i>SIZE</i>	0.000** (2.24)	0.059*** (17.95)	0.009*** (9.46)	0.119*** (27.68)	0.006*** (10.43)
<i>LEVERAGE</i>	-0.001** (-2.01)	-0.062*** (-5.35)	-0.046*** (-12.26)	-0.041*** (-2.67)	-0.011*** (-4.23)
<i>MTB</i>	-0.000*** (-7.04)	-0.004*** (-3.15)	-0.002*** (-5.47)	0.002* (1.71)	0.000 (0.32)
<i>ROA</i>	0.004** (2.30)	0.087*** (3.19)	0.091*** (8.89)	-0.276*** (-8.58)	0.026*** (3.96)
<i>CASH</i>	-0.000 (-0.18)	-0.001 (-0.06)	0.012*** (2.97)	0.036** (2.23)	0.005** (2.01)
<i>DIVIDENDS</i>	0.020*** (2.65)	2.827*** (9.14)	0.489*** (3.07)	6.417*** (15.29)	0.252*** (2.83)
<i>R&amp;D</i>	0.005* (1.89)	0.381*** (6.18)	0.071*** (3.45)	0.513*** (6.91)	0.069*** (4.86)
<i>FOROPS</i>	0.000 (1.23)	0.046*** (5.85)	-0.001 (-0.22)	0.103*** (10.07)	0.003* (1.79)
<i>ANALYSTS</i>	0.001*** (6.71)	0.041*** (10.87)	0.008*** (5.54)	0.074*** (15.78)	0.003*** (3.20)
<i>OPTIONS</i>	0.000 (0.32)	-0.093*** (-2.61)	0.012 (1.03)	-0.348*** (-3.52)	-0.029*** (-2.84)
<i>S&amp;P500</i>	0.001*** (3.20)	0.075*** (4.86)	0.006 (1.11)	0.070*** (3.54)	0.009*** (2.96)
Firm FE	Yes	Yes	Yes	Yes	Yes
Time FE	No	No	No	No	No
Firm Quarters	340,043	340,043	340,043	340,043	340,043
Adjusted R <sup>2</sup>	0.097	0.439	0.058	0.467	0.067

Table 7: Political Uncertainty and Buybacks

The regression estimates of Equation (13) are presented in Table 7. In Column (1), the coefficient on *EPU* is not statistically different from zero, indicating that policy uncertainty does not influence the intensity of buyback activity per se. However, Column

(2) shows that firms are more likely to repurchase shares during periods when the *EPU* index is higher. Interestingly, the results in Column (3) show that firms are less likely to announce a new buyback program during periods when the *EPU* index

is higher. However, firms are substantially more likely to provide updates on buyback activity during periods of high policy uncertainty (Column 4). Thus, economic policy uncertainty seems to mostly influence

*existing* buyback programs by inducing more firms to repurchase shares and provide updates on their repurchase activity during periods of exogenous spikes in uncertainty.

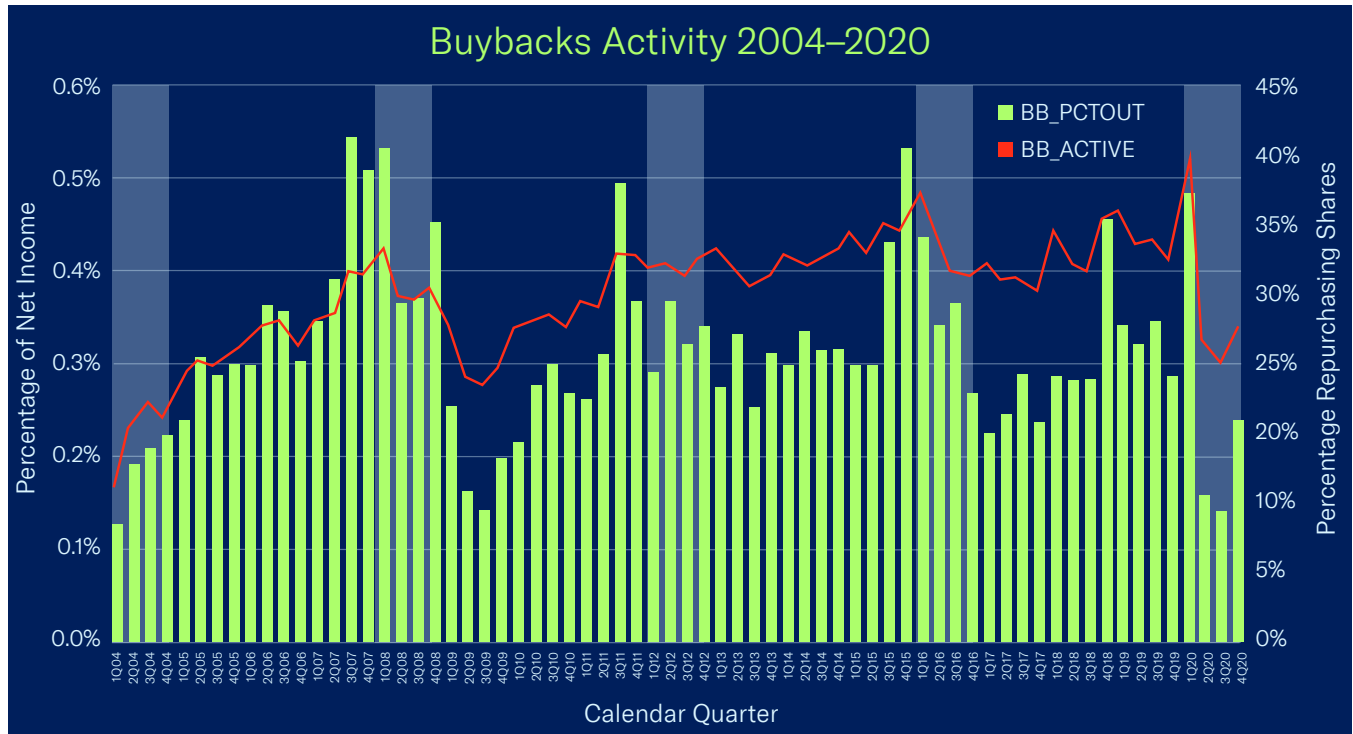


Figure 6: Buybacks and U.S. presidential elections

As an additional measure of how political uncertainty can influence repurchase activity, we again graph buybacks over time in Figure 6. This graph is similar to Figure 1 except we add gray shaded areas that depict U.S. presidential election periods, which we define as starting with the first primary election—the Iowa caucus—in January or February (Q1) and ending with the election in November (Q4).<sup>27</sup> Figure 6 shows that the intensity and presence of buyback activity tend to spike in the one or two quarters just before the presidential election period and persist into the first quarter of the election year, but often return swiftly to the prior level as the election

period enters Q2. We observe a similar pattern in 4Q19 except buyback intensity dropped even further in 2Q20, likely due to the COVID-19 pandemic and its impact on business uncertainty and excess cash availability. Thus, this graph provides further evidence that uncertainty and volatility likely factor into firms’ buyback decisions.

**Key Takeaway 5:** Economic policy uncertainty increases stock return volatility and reduces stock liquidity. Managers respond to transient variation in economic policy uncertainty by strengthening their buyback activities. When economic policy uncertainty can be anticipated, such as

27. The Iowa caucus dates during our sample period are January 19, 2004; January 3, 2008; January 3, 2012; February 1, 2016; and February 3, 2020. The U.S. presidential election dates are November 2, 2004; November 4, 2008; November 6, 2012; November 8, 2016; and November 3, 2020.

with presidential elections, managers proactively increase their buyback activities and, in the aggregate, likely have a calming effect on stock markets.

### C. Buybacks and Institutional Trading

In this subsection, we examine the relationship between institutional trading and buyback activity. We hypothesize that managers will use buyback activity to provide price support and liquidity to their stock when institutional selling pressure is high, which we refer to as the “liquidity windows hypothesis.”

Using data from the Thomson Reuters 13-F database, we measure three properties of institutional ownership. First, we measure the quarterly level of shares owned by institutions with more than \$100 million in assets under management. We divide total institutional ownership by shares outstanding and label this variable *IOPCT\_OWN*.

We also generate two measures of quarterly flows at the firm level using 13-F data. For each firm, we separately sum institutional buys and sells of stock based on the quarter-over-quarter net change in stock

ownership. If an institution reduces its quarterly position, we consider it a “sell.” We then calculate the percentage of institutional shares sold divided by total institutional ownership (*IOPCT\_SELL*). Similarly, if an institution increases its quarterly position in a stock, we consider it a “buy.” The ratio of shares bought during the quarter divided by total institutional ownership is labeled *IOPCT\_BUY*. We then estimate buyback activity in Equation (14) using OLS regressions:

$$Buyback_{it} = \alpha + \beta_1 IOPCT\_SELL_{it} + \beta_2 IOPCT\_BUY_{it} + \beta_3 IOPCT\_OWN_{it} + X_{it} + Industry\ FE + Time_t FE + \epsilon_{it}$$

where each of the buyback measures (*BB\_PCTOUT*, *BB\_ACTIVE*, *BB\_ANNOUNCE*, *BB\_UPDATE*, and *BB\_EXPAND*) of stock *i* during the calendar-quarter *t* are tested separately as the dependent variables. All control variables, fixed effects, and standard error clustering are identical to Equations (6) and (7). If firms strengthen the presence or intensity of buyback activity to provide liquidity when institutions are more likely to be selling rather than buying shares, then we expect a positive coefficient on  $\beta_1$  that is larger (i.e., more positive) than the coefficient on  $\beta_2$ . The results are presented in Table 8.

	<i>BB_PCTOUT</i>	<i>BB_ACTIVE</i>	<i>BB_ANNOUNCE</i>	<i>BB_UPDATE</i>	<i>BB_EXPAND</i>
<i>IOPCT_SELL</i>	0.067*** (3.93)	3.010*** (5.60)	0.706* (1.99)	3.701*** (9.43)	0.358 (1.29)
<i>IOPCT_BUY</i>	0.011 (0.66)	0.761* (1.67)	-0.103 (-0.69)	1.643*** (2.92)	0.018 (0.12)
<i>IOPCT_OWN</i>	0.002*** (10.96)	0.164*** (15.19)	-0.005 (-1.28)	0.124*** (7.20)	0.009*** (5.74)
<i>SIZE</i>	0.000*** (2.74)	0.019*** (9.71)	0.012*** (12.13)	0.016*** (7.11)	0.001*** (3.40)

	<i>BB_PCTOUT</i>	<i>BB_ACTIVE</i>	<i>BB_ANNOUNCE</i>	<i>BB_UPDATE</i>	<i>BB_EXPAND</i>
<i>LEVERAGE</i>	0.000 (0.43)	-0.060*** (-4.63)	-0.034*** (-9.47)	-0.095*** (-6.17)	-0.009*** (-4.51)
<i>MTB</i>	-0.000*** (-5.18)	-0.001 (-0.41)	-0.000 (-0.36)	-0.004** (-2.20)	0.001 (1.55)
<i>ROA</i>	0.008*** (6.89)	0.389*** (9.80)	0.129*** (10.51)	0.476*** (9.27)	0.066*** (7.05)
<i>CASH</i>	0.001 (1.54)	-0.094*** (-7.39)	0.005 (1.46)	-0.097*** (-5.97)	0.000 (0.05)
<i>DIVIDENDS</i>	-0.005 (-0.58)	3.361*** (6.79)	0.136 (0.96)	5.062*** (8.67)	0.126 (1.50)
<i>R&amp;D</i>	0.001 (0.22)	-0.020 (-0.23)	0.048* (1.89)	-0.136 (-1.40)	0.025 (1.40)
<i>FOROPS</i>	0.000*** (4.57)	0.049*** (7.32)	0.001 (0.80)	0.051*** (6.35)	0.002* (1.71)
<i>ANALYSTS</i>	0.000*** (4.44)	0.029*** (7.82)	0.002** (2.08)	0.017*** (4.63)	0.002*** (2.93)
<i>OPTIONS</i>	0.001 (0.66)	-0.176*** (-3.74)	0.027* (1.76)	-0.246*** (-3.80)	-0.012* (-1.71)
<i>S&amp;P500</i>	0.003*** (11.17)	0.261*** (19.46)	0.007 (1.61)	0.147*** (8.79)	0.011*** (4.59)
Industry FE	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Firm Quarters	340,043	340,043	340,043	340,043	340,043
Adjusted R <sup>2</sup>	0.036	0.200	0.024	0.273	0.014

Table 8: Institutional Trading and Buybacks

Column (1) shows that the intensity of buybacks (*BB\_PCTOUT*) is stronger when institutions are selling rather than buying shares. Whereas the coefficient on *IOPCT\_SELL* is positive (0.067) and statistically significant at the 1% level ( $p$ -value<0.001), the coefficient on *IOPCT\_BUY* is not statistically different from zero ( $p$ -value=0.511). The results are similar in Column (2), where the dependent variable is the presence of buyback

activity (*BB\_ACTIVE*). The coefficient on *IOPCT\_SELL* (3.010) is statistically different from zero at the 1% level ( $p$ -value<0.001). The coefficient on *IOPCT\_BUY* is smaller (0.761) and is only marginally different from the 10% level ( $p$ -value=0.100). An *F*-test reveals that the coefficient on *IOPCT\_SELL* is statistically larger than the coefficient on *IOPCT\_BUY* in Columns (1) and (2).<sup>28</sup>

28. *F*-tests show that the coefficient on *IOPCT\_SELL* is statistically larger than the coefficient on *IOPCT\_BUY* in Column (1): *F*-statistic=5.01,  $p$ -value=0.029; Column (2): *F*-statistic=9.15,  $p$ -value=0.004; Column (3): *F*-statistic=4.50,  $p$ -value=0.038; and Column (4): *F*-statistic=10.91,  $p$ -value=0.002. The coefficients are not statistically different in Column (5): *F*-statistic=1.03;  $p$ -value=0.313.

Column (3) shows that institutional selling is marginally and positively related to announcements of a buyback plan (*BB\_ANNOUNCE*). We find no similar relation with institutional buying. In Column (4), both institutional buying and selling are related to providing buyback updates. However, the coefficient on *IOPCT\_SELL* is numerically (3.701 versus 1.643) and statistically ( $p$ -value=0.002) larger than the coefficient on *IOPCT\_BUY*, which we interpret as evidence that managers provide more buyback updates when selling pressure is higher. Neither institutional buying nor selling are related to expansion of buyback programs in Column (5).

Key Takeaway 6: Managers increase stock buyback activity when institutional investors tend to be selling shares, which indicates that buybacks help stabilize markets.

## 6. Conclusion

We study the liquidity and volatility implications of corporate share buyback programs. Using a broad sample of over 10,000 firms across 17 years, we find strong evidence that firms strategically employ share repurchases to provide an important liquidity role similar to market-makers and a market stabilization role similar to investment bankers. We find strong evidence that share repurchases are associated with overall improvements in stock liquidity and attenuations in stock return volatility. We demonstrate how market improvements from buyback activities specifically benefit retail investors, which we estimate saved retail investors \$2.1 to \$4.2 billion in transaction and price impact costs during our sample period.

We also find that firms tend to strengthen buyback presence and intensity when institutional investor selling pressure is higher, which is the period when stock liquidity and volatility likely come under pressure. Firms also strengthen buyback activities when the market anticipates higher near-term stock-specific volatility and during spikes in overall economic policy uncertainty.

Taken together, our analyses demonstrate the beneficial impact of share repurchases on stock liquidity and volatility. These relations have important policy implications for contemporaneous discussions on buyback activity. Vocal opponents of stock buybacks have either introduced or threatened to introduce legislation to limit buyback activity. These legislative threats tend to demonize open market repurchase programs, which provide additional flexibility to managers wishing to return surplus capital to investors. Based on our findings, imposing limitations on stock buybacks will limit firms' ability to calm markets, supply liquidity, and reduce volatility during the most crucial periods of uncertainty. Such limitations would ultimately harm retail investors, who now account for approximately 20% of the average daily traded volume of equities in the U.S.

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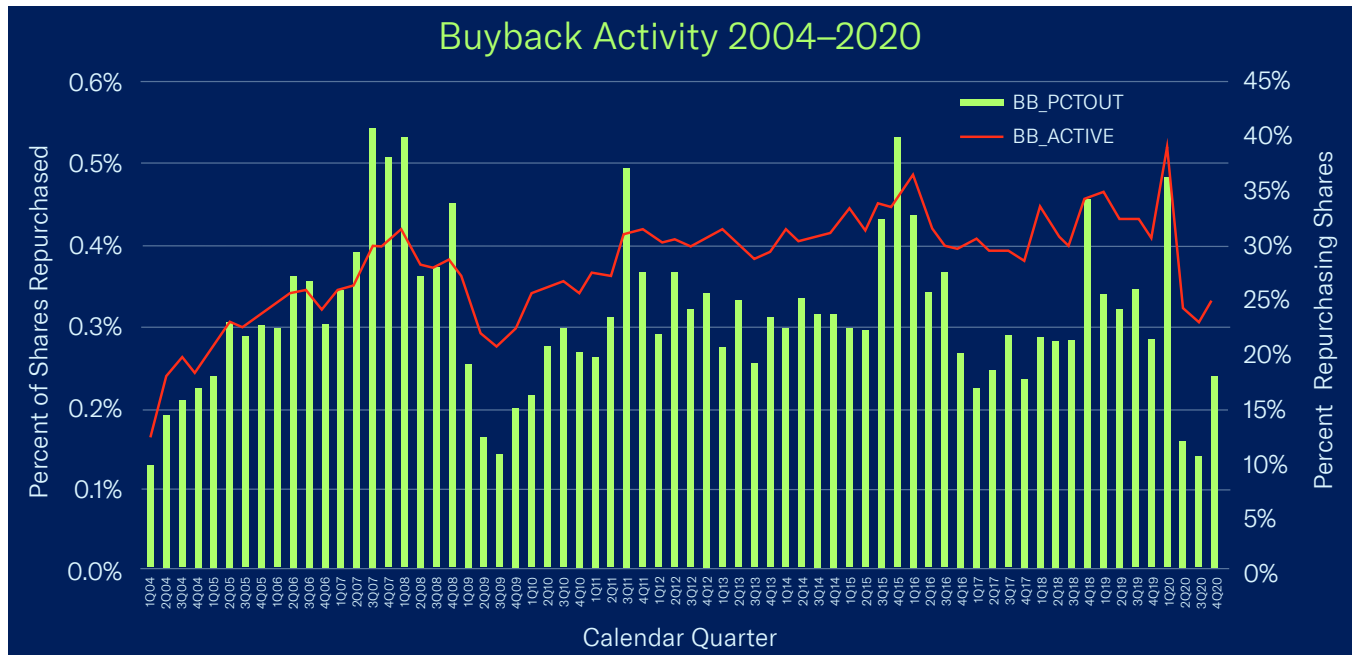
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## 8. Appendix: Variable Definitions

Variable	Definition
<b>Buyback Activity</b>	
<i>BB_PCTOUT</i>	Number of shares repurchased during the quarter by the shares outstanding at the end of the prior quarter.
<i>BB_ACTIVE</i>	Equals 1 if a firm repurchases any shares during a quarter, and otherwise 0.
<b>Buyback Disclosure</b>	
<i>BB_ANNOUNCE</i>	Equals 1 if a firm reports event types 36, 152, or 232 in the CIQ-KD database, which correspond to the announcement of a new buyback program.
<i>BB_UPDATE</i>	Equals 1 if a firm reports event type 231 in the CIQ-KD database, which corresponds to buyback tranche updates of quarterly buyback amounts.
<i>BB_EXPAND</i>	Equals 1 if a firm reports event type 230 in the CIQ-KD database, which corresponds to expanded duration or size of existing buyback programs.
<b>Liquidity</b>	
<i>ILLIQ</i>	Absolute stock return divided by dollar trading volume.
<i>SPREAD</i>	Closing percentage quoted bid-ask spread is the closing ask less the closing bid divided by the midpoint of the closing ask and bid.
<i>DVOLUME</i>	Dollar volume is log transformed value of the stock price times the shares traded.
<i>TURN</i>	Stock turnover is the natural log of shares traded divided by shares outstanding.
<i>ZERO</i>	Percentage of trading days with zero stock returns.
<b>Volatility</b>	
<i>RETVOL</i>	Annualized standard deviation of daily stock returns over the quarter.
<i>ARETVOL</i>	Annualized standard deviation of daily abnormal stock returns over the quarter, where abnormal returns adjust for the returns of the CRSP value-weighted index.
<i>IVOL</i>	Average of the implied volatilities of the call and put contracts, which are closest to ATM and are one month to maturity (30 days).
<b>Controls</b>	
<i>SIZE</i>	Natural log of total assets.
<i>LEVERAGE</i>	Sum of long-term debt and long-term debt in current liabilities divided by total assets.
<i>MTB</i>	Market value of debt and equity divided by total assets.
<i>ROA</i>	Earnings before interest and taxes divided by total assets.
<i>CASH</i>	Cash and cash equivalents divided by total assets.
<i>DIVIDENDS</i>	Common dividends divided by earnings before interest, tax, depreciation, and amortization.
<i>R&amp;D</i>	Research and development expense divided by total assets. Missing values are set to 0.
<i>FOROPS</i>	Foreign operations indicator equals 1 if the firm has a non-missing, non-zero value for pre-tax income from foreign operations during the fiscal year, and otherwise 0.
<i>ANALYSTS</i>	Number of analysts providing quarterly earnings per share estimates from the I/B/E/S adjusted summary file. We set missing values to zero.

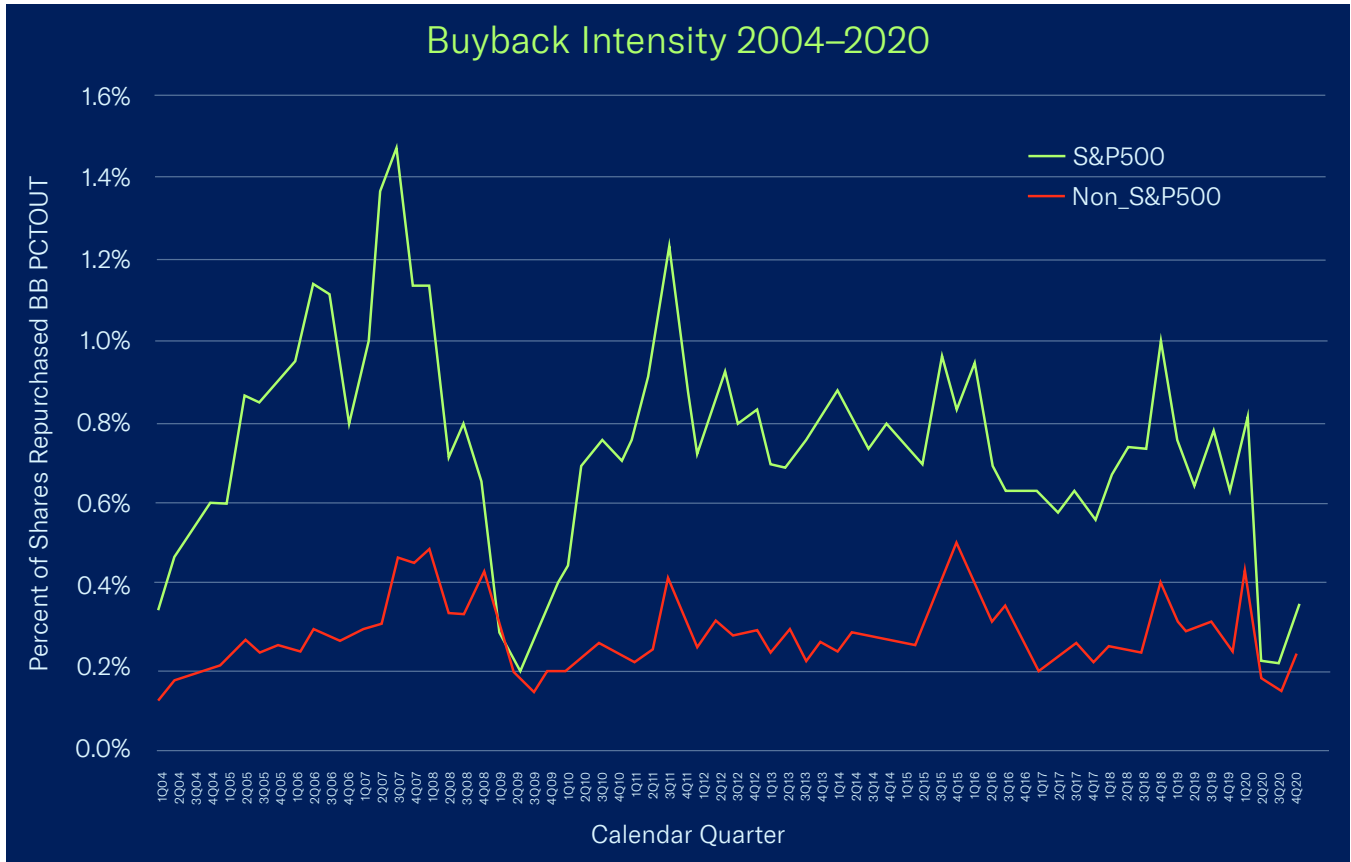
Variable	Definition
<i>RANALYSTS</i>	Residual number of analysts, which is analyst following (ANALYSTS) orthogonalized with respect to firm size (SIZE).
<i>OPTIONS</i>	Natural log of 1 plus the number of options granted divided by shares outstanding in the prior fiscal year.
<i>S&amp;P500</i>	Equals 1 if the company is a member of the S&P500 index, and otherwise 0.
<b>Other Measures</b>	
<i>HIEXPVOL</i>	High expected volatility equals 1 if the firm has an above-median quarterly value of expected volatility, which we define as the ratio of the implied volatility on the 30-day ATM call and put stock option divided by the implied volatility on the 91-day ATM call and put stock options on the first day of each calendar-quarter, and otherwise 0.
<i>EPU</i>	Normalized index value of the volume of news articles discussing economic policy uncertainty from Baker et al. (2016).
<i>IOPCT_SELL</i>	Percentage of institutional shares sold divided by institutional ownership; 0 if missing.
<i>IOPCT_BUY</i>	Percentage of institutional shares bought divided by institutional ownership; 0 if missing.
<i>IOPCT_OWEN</i>	Percentage of institutional shares owned divided by total shares outstanding; 0 if missing.

Figure 1. Buybacks Over Time



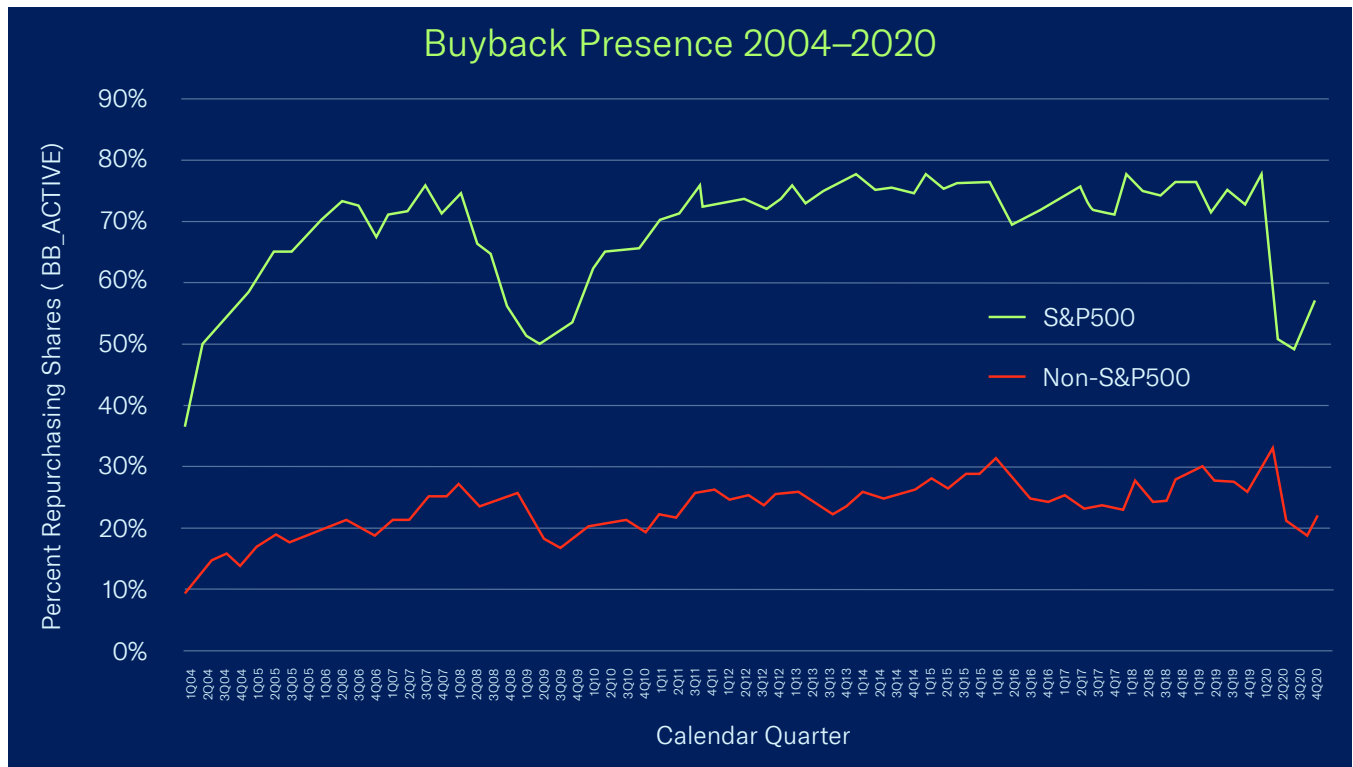
This figure plots time-series variation in buyback activity over calendar-quarters 1Q-04 to 4Q-20. The percentage of shares repurchased (*BB\_PCTOUT*) is presented as black bars that correspond to values on the left y-axis. The percentage of firms repurchasing stock (*BB\_ACTIVE*) is plotted as a gray dashed line with its scale on the right y-axis.

Figure 2. Share Buyback Intensity for S&P500 and Non-S&P500 Firms



This figure plots time-series variation in buyback intensity based on S&P500 index membership. For each sample quarter, we separately calculate the average percentage of shares repurchased (*BB\_PCTOUT*) for sample firms that are members of the S&P500 and those that are not. *BB\_PCTOUT* is depicted by the black solid line for S&P500 constituents, and by the gray dashed line for non-S&P500 sample firms.

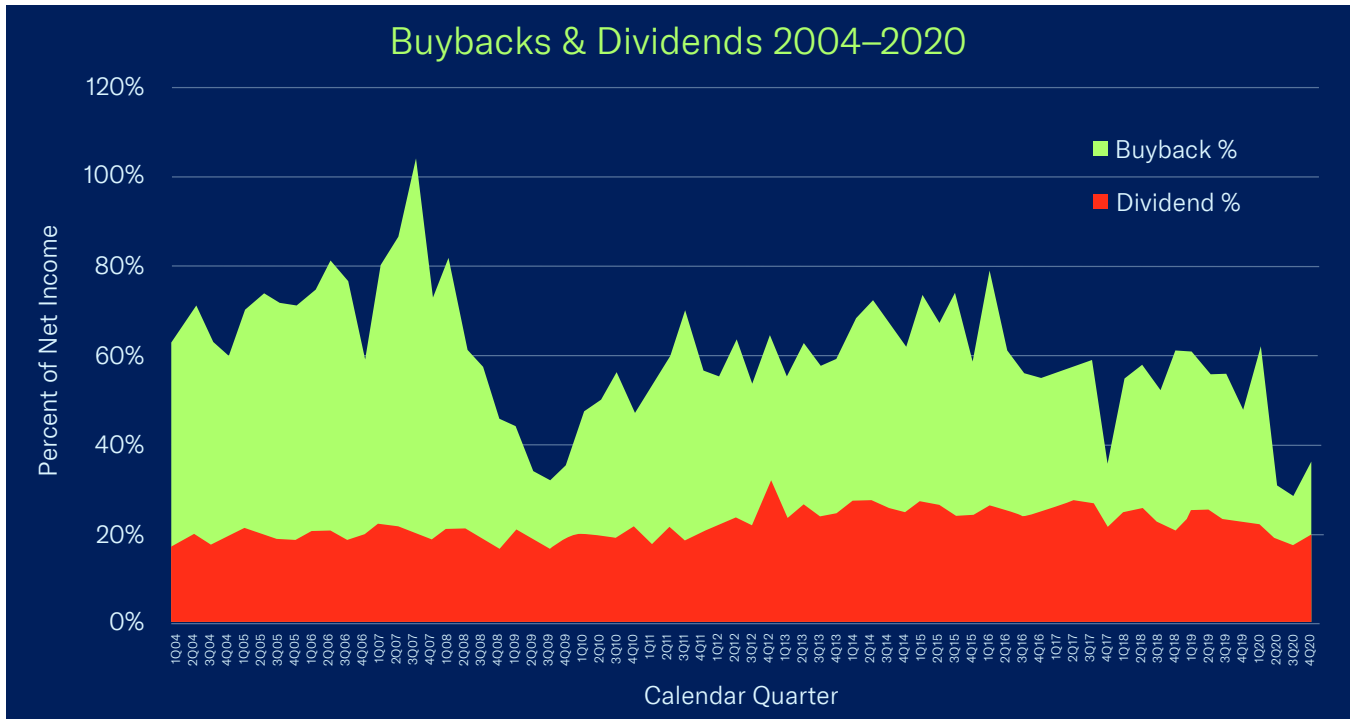
Figure 3. Share Buyback Presence for S&P500 and Non-S&P500 Firms



This figure plots time-series variation in buyback activity based on S&P500 index membership. For each sample quarter, we separately calculate the average percentage of firms repurchasing shares (*BB\_ACTIVE*) for sample firms that are members of the S&P500 and those that are not. *BB\_ACTIVE* is depicted by the black solid line for S&P500 constituents, and by the gray dashed line for non-S&P500 sample firms.

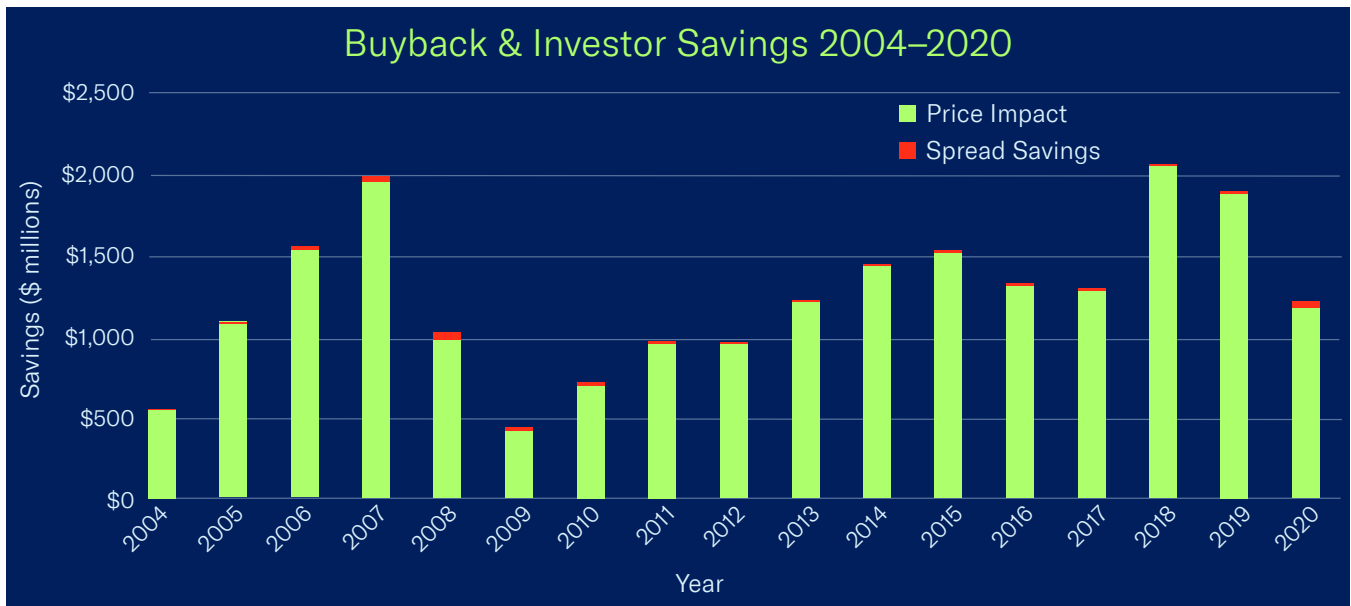


**Figure 4. Payouts Over Time**



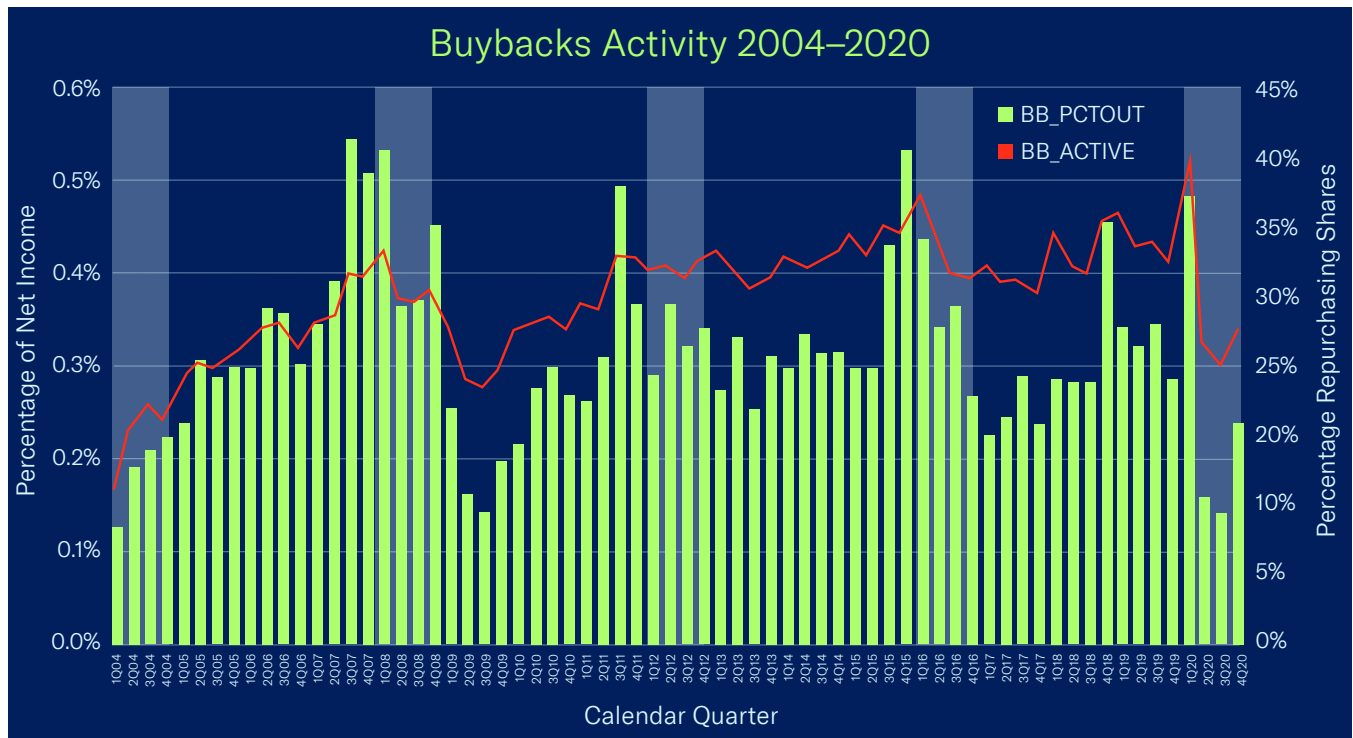
This figure plots time-series variation in payout statistics. For each sample quarter, we separately calculate dividends and buybacks as a percentage of net income. Dividend % is depicted by the area shaded in gray. Buyback % is represented by the area shaded in black.

**Figure 5. Investor Benefits of Buybacks**



This graph depicts the investor savings from buyback activity over 2004 to 2020. The graphs depict annual savings in terms of transaction costs via bid-ask spreads (*SPREAD SAVINGS*) charted in black bars and price impact savings (*PIS*) charted in gray bars.

Figure 6. Buybacks and U.S. Presidential Elections



This figure plots time-series variation in buyback activity over calendar-quarters 1Q-04 to 4Q-20. The percentage of shares repurchased (*BB\_PCTOUT*) is presented as black bars that correspond to values on the left y-axis. The percentage of firms repurchasing stock (*BB\_ACTIVE*) is plotted as a gray dashed line with its scale on the right y-axis. The gray shaded areas depict the U.S. presidential election period, which begins with the first primary election in Q1 and ends with the election in Q4 during election years.

**Table 1. Summary Statistics**

	Mean	Median	Standard Deviation	Firm Quarters
<b>Buyback Activity</b>				
<i>BB_PCTOUT</i>	0.003	0.000	0.020	340,327
<i>BB_PCTOUT (non-zero)</i>	0.011	0.005	0.037	94,776
<i>BB_PCTOUT (log-transformed)</i>	0.003	0.000	0.013	340,327
<i>BB_ACTIVE</i>	0.278	0.000	0.448	340,327
<b>Buyback Disclosure</b>				
<i>BB_ANNOUNCE</i>	0.053	0.000	0.224	340,327
<i>BB_UPDATE</i>	0.267	0.000	0.442	340,327
<i>BB_EXPAND</i>	0.017	0.000	0.129	340,327
<b>Stock Liquidity</b>				
<i>ILLIQ</i>	0.191	0.001	0.955	340,327
<i>SPREAD</i>	0.009	0.002	0.018	340,327
<i>DVOLUME (\$ millions)</i>	35.700	3.196	185.135	340,327
<i>DVOLUME (log-transformed)</i>	14.746	14.977	2.706	340,327
<i>TURN</i>	0.659	0.361	9.467	340,327
<i>TURN (log-transformed)</i>	-1.163	-1.019	1.192	340,327
<i>ZERO</i>	0.033	0.016	0.047	340,327
<b>Volatility</b>				
<i>RETVOL</i>	0.499	0.395	0.435	340,219
<i>ARETVOL</i>	0.467	0.362	0.430	340,219
<i>IVOL</i>	0.474	0.408	0.257	194,222
<b>Firm Characteristics</b>				
<i>SIZE</i>	6.637	6.630	2.223	340,327
<i>LEVERAGE</i>	0.227	0.170	0.227	340,327
<i>MTB</i>	1.597	1.082	1.761	340,327
<i>ROA</i>	-0.002	0.010	0.064	340,327
<i>CASH</i>	0.202	0.097	0.241	340,327
<i>DIVIDENDS</i>	0.003	0.000	0.006	340,327
<i>R&amp;D</i>	0.013	0.000	0.031	340,327
<i>FOROPS</i>	0.370	0.000	0.483	340,327
<i>ANALYSTS</i>	4.640	2.000	6.200	340,327
<i>RANALYSTS</i>	0.002	-0.132	1.000	340,327
<i>OPTIONS</i>	0.011	0.001	0.028	340,327
<i>S&amp;P500</i>	0.099	0.000	0.299	340,327
<b>Uncertainty Measures</b>				
<i>HIEXPVOL</i>	0.500	1.000	0.500	187,192
<i>EPU</i>	0.135	0.126	0.063	340,327

This table presents the mean, median, standard deviation, and sample observations of key variables. We define variables in the Appendix.

**Table 2. Correlation Matrix**

	<i>BB_PCTOUT</i>	<i>BB_ACTIVE</i>	<i>ILLIQ</i>	<i>SPREAD</i>	<i>DVOLUME</i>	<i>TURN</i>	<i>ZERO</i>	<i>RETVOL</i>	<i>ARETVOL</i>	<i>IVOL</i>
<i>BB_PCTOUT</i>	1.0000									
<i>BB_ACTIVE</i>	0.2502*	1.0000								
<i>ILLIQ</i>	-0.0172*	-0.0706*	1.0000							
<i>SPREAD</i>	-0.0360*	-0.1541*	0.6890*	1.0000						
<i>DVOLUME</i>	0.0770*	0.3016*	-0.3876*	-0.6155*	1.0000					
<i>TURN</i>	0.0448*	0.0839*	-0.3320*	-0.4554*	0.6867*	1.0000				
<i>ZERO</i>	-0.0363*	-0.1614*	0.2668*	0.4056*	-0.5408*	-0.3930*	1.0000			
<i>RETVOL</i>	-0.0354*	-0.1660*	0.2303*	0.4257*	-0.2224*	0.1500*	0.0987*	1.0000		
<i>ARETVOL</i>	-0.0400*	-0.1868*	0.2562*	0.4663*	-0.2765*	0.1072*	0.1480*	0.9891*	1.0000	
<i>IVOL</i>	-0.0624*	-0.2577*	0.0509*	0.4900*	-0.4382*	0.2240*	0.2244*	0.7447*	0.7431*	1.0000

This table presents a pairwise correlation matrix at the calendar-quarter level. The asterisk \* denotes correlations are statistically different from zero at the 5% level or better. We define variables in the Appendix.

**Table 3. Buybacks and Liquidity**

	<i>ILLIQ</i>	<i>SPREAD</i>	<i>DVOLUME</i>	<i>TURN</i>	<i>ZERO</i>
Panel A: Intensity of buybacks					
<i>BB_PCTOUT</i>	-0.754*** (-3.95)	-0.023*** (-4.77)	5.959*** (8.99)	3.185*** (7.44)	-0.035*** (-4.18)
<i>SIZE</i>	-0.160*** (-11.60)	-0.005*** (-15.55)	1.082*** (70.37)	0.246*** (18.55)	-0.011*** (-26.19)
<i>LEVERAGE</i>	0.176*** (5.92)	0.005*** (7.42)	-0.651*** (-11.31)	0.138*** (3.46)	0.014*** (10.69)
<i>MTB</i>	-0.050*** (-7.98)	-0.001*** (-10.65)	0.396*** (35.70)	0.065*** (7.75)	-0.005*** (-20.45)
<i>ROA</i>	-0.319** (-2.57)	-0.025*** (-8.95)	0.799*** (2.74)	-1.075*** (-4.26)	-0.043*** (-5.59)
<i>CASH</i>	-0.253*** (-6.77)	-0.006*** (-8.12)	0.843*** (15.01)	0.709*** (16.19)	-0.005*** (-3.43)
<i>DIVIDENDS</i>	-3.808*** (-5.66)	-0.086*** (-6.27)	3.198 (1.61)	-13.969*** (-9.57)	-0.251*** (-7.65)
<i>R&amp;D</i>	-1.588*** (-6.04)	-0.035*** (-7.66)	1.809*** (4.28)	0.297 (0.85)	-0.022* (-1.99)
<i>FOROPS</i>	-0.031*** (-2.75)	-0.001*** (-5.17)	0.190*** (7.32)	0.006 (0.30)	-0.003*** (-5.59)
<i>ANALYSTS</i>	-0.001 (-0.16)	-0.001*** (-6.79)	0.431*** (27.77)	0.161*** (16.44)	-0.003*** (-11.83)
<i>OPTIONS</i>	-0.629*** (-3.43)	-0.016*** (-3.42)	1.601*** (3.20)	1.458*** (3.33)	-0.035*** (-3.88)
<i>S&amp;P500</i>	0.338*** (11.73)	0.009*** (15.31)	0.141*** (3.30)	-0.330*** (-9.79)	0.017*** (14.55)
Industry FE	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Firm Quarters	340,323	340,323	340,323	340,323	340,323
Adjusted R <sup>2</sup>	0.120	0.320	0.792	0.292	0.277

	<i>ILLIQ</i>	<i>SPREAD</i>	<i>DVOLUME</i>	<i>TURN</i>	<i>ZERO</i>
Panel B: Extent of buybacks					
<i>BB_ACTIVE</i>	-0.047*** (-5.35)	-0.002*** (-9.02)	0.242*** (13.88)	0.009 (0.68)	-0.003*** (-7.59)
<i>SIZE</i>	-0.158*** (-11.54)	-0.005*** (-15.47)	1.076*** (70.06)	0.247*** (18.51)	-0.011*** (-25.92)
<i>LEVERAGE</i>	0.173*** (5.84)	0.005*** (7.33)	-0.635*** (-11.01)	0.139*** (3.47)	0.014*** (10.56)
<i>MTB</i>	-0.050*** (-7.97)	-0.001*** (-10.64)	0.395*** (35.74)	0.064*** (7.67)	-0.005*** (-20.50)
<i>ROA</i>	-0.303** (-2.43)	-0.024*** (-8.75)	0.734** (2.51)	-1.050*** (-4.15)	-0.042*** (-5.43)
<i>CASH</i>	-0.258*** (-6.89)	-0.006*** (-8.33)	0.870*** (15.45)	0.712*** (16.12)	-0.005*** (-3.62)
<i>DIVIDENDS</i>	-3.660*** (-5.43)	-0.081*** (-5.91)	2.422 (1.22)	-14.028*** (-9.61)	-0.243*** (-7.40)
<i>R&amp;D</i>	-1.586*** (-6.04)	-0.035*** (-7.67)	1.806*** (4.28)	0.302 (0.86)	-0.022* (-1.98)
<i>FOROPS</i>	-0.029** (-2.54)	-0.001*** (-4.84)	0.179*** (6.96)	0.008 (0.37)	-0.003*** (-5.33)
<i>ANALYSTS</i>	0.001 (0.33)	-0.001*** (-6.19)	0.422*** (27.49)	0.163*** (16.59)	-0.003*** (-11.42)
<i>OPTIONS</i>	-0.636*** (-3.46)	-0.016*** (-3.45)	1.643*** (3.24)	1.463*** (3.33)	-0.035*** (-3.90)
<i>S&amp;P500</i>	0.347*** (11.91)	0.010*** (15.63)	0.100** (2.36)	-0.323*** (-9.68)	0.017*** (15.10)
Industry FE	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Firm Quarters	340,323	340,323	340,323	340,323	340,323
Adjusted R <sup>2</sup>	0.121	0.321	0.792	0.291	0.278

This table presents results from an OLS regression estimate of stock liquidity and buybacks. All regressions include industry (two-digit SIC) and time (calendar-quarter) fixed effects. *T*-statistics are presented in parentheses based on robust standard errors double clustered at the firm and calendar-quarter levels. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% level, respectively. We define variables in the Appendix.

**Table 4. Buybacks and Volatility**

	<i>RETVOL</i>	<i>ARETVOL</i>	<i>IVOL</i>	<i>RETVOL</i>	<i>ARETVOL</i>	<i>IVOL</i>
<i>BB_PCTOUT</i>	-0.632*** (-4.89)	-0.626*** (-5.01)	-0.658*** (-6.68)			
<i>BB_ACTIVE</i>				-0.050*** (-14.21)	-0.053*** (-17.19)	-0.037*** (-14.76)
<i>SIZE</i>	-0.058*** (-29.87)	-0.069*** (-27.50)	-0.059*** (-32.48)	-0.057*** (-29.55)	-0.067*** (-27.26)	-0.059*** (-32.08)
<i>LEVERAGE</i>	0.206*** (11.49)	0.211*** (11.53)	0.136*** (13.23)	0.203*** (11.39)	0.208*** (11.43)	0.133*** (12.90)
<i>MTB</i>	-0.008*** (-4.38)	-0.011*** (-5.33)	-0.017*** (-11.48)	-0.008*** (-4.34)	-0.011*** (-5.30)	-0.017*** (-11.44)
<i>ROA</i>	-1.347*** (-20.37)	-1.329*** (-21.17)	-1.126*** (-23.04)	-1.328*** (-20.29)	-1.308*** (-21.05)	-1.105*** (-22.57)
<i>CASH</i>	0.036** (2.43)	0.034** (2.45)	0.131*** (12.41)	0.030** (2.08)	0.028** (2.06)	0.124*** (11.98)
<i>DIVIDENDS</i>	-5.833*** (-17.88)	-5.678*** (-17.95)	-4.858*** (-17.41)	-5.679*** (-17.56)	-5.514*** (-17.60)	-4.737*** (-17.00)
<i>R&amp;D</i>	-0.754*** (-5.92)	-0.789*** (-6.22)	0.054 (0.59)	-0.753*** (-5.93)	-0.787*** (-6.23)	0.050 (0.55)
<i>FOROPS</i>	-0.021*** (-5.89)	-0.027*** (-7.39)	-0.025*** (-7.71)	-0.018*** (-5.18)	-0.024*** (-6.68)	-0.023*** (-7.20)
<i>ANALYSTS</i>	-0.009*** (-5.15)	-0.011*** (-6.72)	-0.015*** (-10.86)	-0.007*** (-3.97)	-0.009*** (-5.44)	-0.014*** (-10.04)
<i>OPTIONS</i>	0.122*** (2.70)	0.106** (2.49)	0.332** (2.29)	0.114** (2.57)	0.097** (2.33)	0.324** (2.29)
<i>S&amp;P500</i>	0.045*** (7.92)	0.059*** (10.01)	0.023*** (5.65)	0.055*** (9.38)	0.070*** (11.57)	0.030*** (7.57)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm Quarters	340,215	340,215	194,222	340,215	340,215	194,222
Adjusted R <sup>2</sup>	0.332	0.322	0.605	0.334	0.324	0.608

This table presents results from an OLS regression estimate of stock and option volatility. All regressions include industry (two-digit SIC) and time (calendar-quarter) fixed effects. *t*-statistics are presented in parentheses based on robust standard errors double clustered at the firm and calendar-quarter levels. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% level, respectively. We define variables in the Appendix.



**Table 5. Buybacks and Investor Savings**

	Full Sample	Buyback Percent Quintiles				
		Q1	Q2	Q3	Q4	Q5
<b>Panel A. Transaction Costs</b>						
<i>Spread Savings</i>						
Average per day (\$)	53.7	65.2	40.7	50.5	55.8	56.4
Average per quarter (\$)	3,381	4,110	2,554	3,181	3,513	3,548
Total per year (\$ millions)	18.8	4.6	2.8	3.5	3.9	4.0
Total all years (\$ millions)	320.4	77.9	48.4	60.3	66.6	67.3
<b>Panel B. Transaction Costs</b>						
<i>Price Impact Savings (PIS)</i>						
Average per day (\$)	13.09	1.70	7.04	13.16	17.64	25.94
Average per quarter (\$)	3,554	3	118	1,458	4,760	11,431
Total per year (\$ millions)	1,245	0.2	8.3	102.2	333.5	800.8
Total all years (\$ millions)	21,164	3	141	1,737	5,670	13,614

This table presents summarized estimates of transaction cost and volatility savings for retail investors. Panel A estimates savings in the bid-ask spread (*SPREAD SAVINGS*) due to repurchase activity. Panel B estimates price impact savings (*PIS*) due to repurchase activity. We sort repurchasing firms into quintiles based on the percentage of shares repurchased (*BB\_PCTOUT*) over the full sample. Firms in the lowest quintile (Q1) repurchase the smallest percentage of shares outstanding in a given quarter, while firms in the highest quintile (Q5) repurchase the largest percent of shares outstanding. The notation bps represents basis points. One basis point is equal to 0.001.

**Table 6. Future Uncertainty and Buybacks**

	<i>BB_PCTOUT</i>	<i>BB_ACTIVE</i>	<i>BB_ANNOUNCE</i>	<i>BB_UPDATE</i>	<i>BB_EXPAND</i>
<i>HIEXPVOL</i>	0.002*** (11.18)	0.119*** (17.47)	0.017*** (8.55)	0.121*** (11.73)	0.012*** (9.28)
<i>SIZE</i>	-0.000 (-1.39)	0.006** (2.02)	0.012*** (8.60)	0.005 (1.54)	-0.000 (-0.09)
<i>LEVERAGE</i>	0.001** (2.13)	-0.046** (-2.50)	-0.035*** (-6.12)	-0.098*** (-4.59)	-0.008** (-2.46)
<i>MTB</i>	-0.000*** (-8.89)	-0.007*** (-2.98)	-0.001 (-1.63)	-0.014*** (-5.94)	0.000 (0.39)
<i>ROA</i>	0.019*** (12.29)	0.869*** (12.22)	0.256*** (10.47)	1.007*** (12.19)	0.147*** (6.81)
<i>CASH</i>	0.002* (1.77)	-0.124*** (-5.88)	0.022*** (3.61)	-0.106*** (-3.87)	0.005 (1.23)
<i>DIVIDENDS</i>	-0.048*** (-4.16)	1.281* (1.89)	-0.212 (-1.09)	2.968*** (4.30)	-0.060 (-0.46)
<i>R&amp;D</i>	0.008 (1.62)	-0.029 (-0.17)	0.135*** (2.67)	-0.076 (-0.41)	0.079* (1.90)
<i>FOROPS</i>	0.001*** (3.99)	0.064*** (6.83)	-0.001 (-0.44)	0.062*** (5.79)	0.002 (1.27)
<i>ANALYSTS</i>	0.000*** (7.22)	0.041*** (10.59)	-0.000 (-0.28)	0.025*** (6.58)	0.002*** (2.93)
<i>OPTIONS</i>	0.001 (0.54)	-0.202** (-2.07)	0.015 (0.66)	-0.347** (-2.45)	-0.008 (-0.59)
<i>S&amp;P500</i>	0.003*** (9.30)	0.237*** (16.85)	0.002 (0.35)	0.135*** (8.09)	0.008*** (3.26)
Industry FE	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Firm Quarters	186,863	186,863	186,863	186,863	186,863
Adjusted R <sup>2</sup>	0.049	0.195	0.024	0.286	0.016

This table presents results from an OLS regression estimate of the ratio of buyback activity and disclosures. The variable *HIEXPVOL* equals 1 if the ratio of the implied volatility on 30-day ATM stock options divided by the adjusted implied volatility on the 91-day ATM stock options on the first day of the quarter is above the sample median for each calendar-quarter. All regressions include industry (two-digit SIC) and time (calendar-quarter) fixed effects. *t*-statistics are presented in parentheses based on robust standard errors double clustered at the firm and calendar-quarter levels. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% level, respectively. We define variables in the Appendix.

**Table 7. Political Uncertainty and Buybacks**

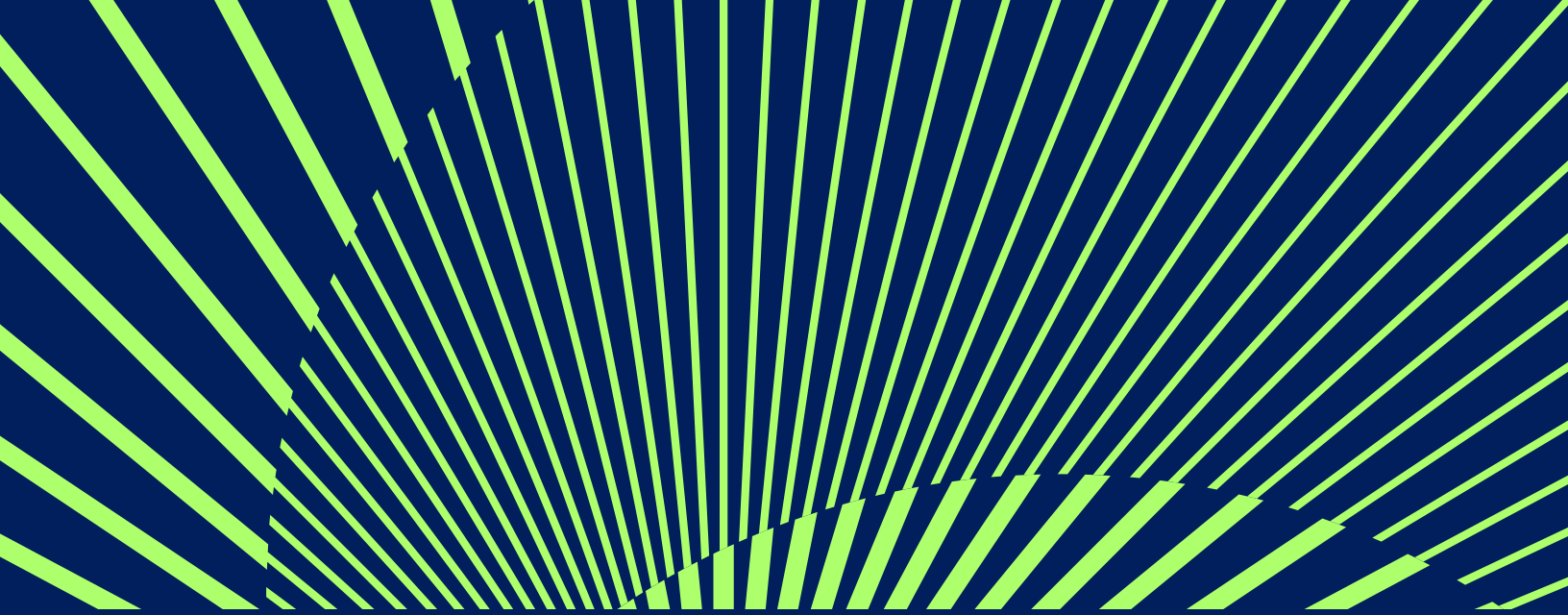
	<i>BB_PCTOUT</i>	<i>BB_ACTIVE</i>	<i>BB_ANNOUNCE</i>	<i>BB_UPDATE</i>	<i>BB_EXPAND</i>
<i>EPU</i>	-0.000 (-0.34)	0.114*** (5.72)	-0.073*** (-9.95)	1.136*** (48.38)	0.007 (1.63)
<i>SIZE</i>	0.000** (2.24)	0.059*** (17.95)	0.009*** (9.46)	0.119*** (27.68)	0.006*** (10.43)
<i>LEVERAGE</i>	-0.001** (-2.01)	-0.062*** (-5.35)	-0.046*** (-12.26)	-0.041*** (-2.67)	-0.011*** (-4.23)
<i>MTB</i>	-0.000*** (-7.04)	-0.004*** (-3.15)	-0.002*** (-5.47)	0.002* (1.71)	0.000 (0.32)
<i>ROA</i>	0.004** (2.30)	0.087*** (3.19)	0.091*** (8.89)	-0.276*** (-8.58)	0.026*** (3.96)
<i>CASH</i>	-0.000 (-0.18)	-0.001 (-0.06)	0.012*** (2.97)	0.036** (2.23)	0.005** (2.01)
<i>DIVIDENDS</i>	0.020*** (2.65)	2.827*** (9.14)	0.489*** (3.07)	6.417*** (15.29)	0.252*** (2.83)
<i>R&amp;D</i>	0.005* (1.89)	0.381*** (6.18)	0.071*** (3.45)	0.513*** (6.91)	0.069*** (4.86)
<i>FOROPS</i>	0.000 (1.23)	0.046*** (5.85)	-0.001 (-0.22)	0.103*** (10.07)	0.003* (1.79)
<i>ANALYSTS</i>	0.001*** (6.71)	0.041*** (10.87)	0.008*** (5.54)	0.074*** (15.78)	0.003*** (3.20)
<i>OPTIONS</i>	0.000 (0.32)	-0.093*** (-2.61)	0.012 (1.03)	-0.348*** (-3.52)	-0.029*** (-2.84)
<i>S&amp;P500</i>	0.001*** (3.20)	0.075*** (4.86)	0.006 (1.11)	0.070*** (3.54)	0.009*** (2.96)
Firm FE	Yes	Yes	Yes	Yes	Yes
Time FE	No	No	No	No	No
Firm Quarters	340,043	340,043	340,043	340,043	340,043
Adjusted R <sup>2</sup>	0.097	0.439	0.058	0.467	0.067

This table presents results from an OLS regression estimate of the ratio of buyback activity and disclosures. The variable *EPU* is the quarterly average value of the normalized index value of the volume of news articles discussing economic policy uncertainty from Baker et al. (2016). All regressions include firm fixed effects (which absorbs industry fixed effects), but do not include time fixed effects as these would absorb the *EPU* variable. t-statistics are presented in parentheses based on robust standard errors clustered at the firm level. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% level, respectively. We define variables in the Appendix.

**Table 8. Institutional Trading and Buybacks**

	<i>BB_PCTOUT</i>	<i>BB_ACTIVE</i>	<i>BB_ANNOUNCE</i>	<i>BB_UPDATE</i>	<i>BB_EXPAND</i>
<i>IOPCT_SELL</i>	0.067*** (3.93)	3.010*** (5.60)	0.706* (1.99)	3.701*** (9.43)	0.358 (1.29)
<i>IOPCT_BUY</i>	0.011 (0.66)	0.761* (1.67)	-0.103 (-0.69)	1.643*** (2.92)	0.018 (0.12)
<i>IOPCT_OWN</i>	0.002*** (10.96)	0.164*** (15.19)	-0.005 (-1.28)	0.124*** (7.20)	0.009*** (5.74)
<i>SIZE</i>	0.000*** (2.74)	0.019*** (9.71)	0.012*** (12.13)	0.016*** (7.11)	0.001*** (3.40)
<i>LEVERAGE</i>	0.000 (0.43)	-0.060*** (-4.63)	-0.034*** (-9.47)	-0.095*** (-6.17)	-0.009*** (-4.51)
<i>MTB</i>	-0.000*** (-5.18)	-0.001 (-0.41)	-0.000 (-0.36)	-0.004** (-2.20)	0.001 (1.55)
<i>ROA</i>	0.008*** (6.89)	0.389*** (9.80)	0.129*** (10.51)	0.476*** (9.27)	0.066*** (7.05)
<i>CASH</i>	0.001 (1.54)	-0.094*** (-7.39)	0.005 (1.46)	-0.097*** (-5.97)	0.000 (0.05)
<i>DIVIDENDS</i>	-0.005 (-0.58)	3.361*** (6.79)	0.136 (0.96)	5.062*** (8.67)	0.126 (1.50)
<i>R&amp;D</i>	0.001 (0.22)	-0.020 (-0.23)	0.048* (1.89)	-0.136 (-1.40)	0.025 (1.40)
<i>FOROPS</i>	0.000*** (4.57)	0.049*** (7.32)	0.001 (0.80)	0.051*** (6.35)	0.002* (1.71)
<i>ANALYSTS</i>	0.000*** (4.44)	0.029*** (7.82)	0.002** (2.08)	0.017*** (4.63)	0.002*** (2.93)
<i>OPTIONS</i>	0.001 (0.66)	-0.176*** (-3.74)	0.027* (1.76)	-0.246*** (-3.80)	-0.012* (-1.71)
<i>S&amp;P500</i>	0.003*** (11.17)	0.261*** (19.46)	0.007 (1.61)	0.147*** (8.79)	0.011*** (4.59)
Industry FE	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Firm Quarters	340,043	340,043	340,043	340,043	340,043
Adjusted R <sup>2</sup>	0.036	0.200	0.024	0.273	0.014

This table presents results from an OLS regression estimate of the buyback activity and institutional trading. The variables *IOPCT\_SELL*, *IOPCT\_BUY*, and *IOPCT\_OWN* represents the percentage of shares sold, bought, and owned by institutional investors during the quarter. All regressions include industry (two-digit SIC) and time (calendar-quarter) fixed effects. t-statistics are presented in parentheses based on robust standard errors double clustered at the firm and calendar-quarter levels. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% level, respectively. We define variables in the Appendix.



U.S. Chamber of Commerce  
Center for Capital Markets  
Competitiveness

## **Coalition Comment of April 1, 2022**

April 1, 2022

Ms. Vanessa Countryman  
Secretary  
U.S. Securities and Exchange Commission  
100 F Street NE  
Washington, DC 20549

**Re: Share Repurchase Disclosure Modernization (Release Nos. 34-93783, IC-34440; File No. S7-21-21); Rule 10b5-1 and Insider Trading (Release Nos. 33-11013, 34-93782; File No. S7-20-21)**

Dear Ms. Countryman:

The undersigned organizations appreciate the opportunity to comment on the recent and interrelated rule proposals issued by the Securities and Exchange Commission (“SEC”) regarding stock buybacks (“Share Repurchase Proposal”) and Rule 10b5-1 plans (“Rule 10b5-1 Proposal”).

Our organizations support efforts by Congress and the SEC to ensure that America’s capital markets maintain their status as the most competitive, transparent, and liquid in the world. Investors in the U.S. capital markets must have confidence that bad actors are held accountable and that corporate insiders are not able to game the system or bend the rules in their own favor.

At the same time, regulations must be properly calibrated in a way that guards against such abuses without disincentivizing market participants from engaging in legitimate activities that benefit investors. Complex, prescriptive regulations can often impose costs on shareholders that vastly outweigh their purported benefits.

It is with these principles in mind that we offer our perspectives on the Share Repurchase Proposal and the Rule 10b5-1 Proposal. As explained throughout this letter, we are concerned that as drafted these proposals could negatively impact long-term shareholders and undermine past actions the SEC has taken to increase transparency surrounding stock buybacks and 10b5-1 plans.

### **Share Repurchase Proposal**

Over 50% of the American public is invested in the stock market, either through direct ownership of shares or through mutual funds or retirement vehicles such as a 401(k) plan. These investors depend on companies to deliver long-term financial returns in order to have a dignified retirement, send a child off to college, or to save for any other life goal.



Public companies and their boards have a responsibility to allocate capital in a manner that furthers the best interests of these investors. Sometimes that means investing in new and existing projects, in hiring and retaining employees, or in research and development (“R&D”). Other times – for example when a company has excess cash – that can mean returning profits to shareholders in the form of dividends or share buybacks. Each of these major capital allocation decisions are undertaken pursuant to management’s and the board’s fiduciary duty to shareholders and are subject to rigorous discussion and analysis by companies and review and approval by a company’s board of directors.

Share buybacks are a well-established and well-understood strategy that helps shareholders earn a return on their investment. Repurchases give shareholders an opportunity to reinvest back into the underlying company or use these gains to create new businesses or invest elsewhere. In other words, share buybacks contribute positively to the economic cycle in the United States.

Issuers are currently subject to a host of reporting requirements regarding share buybacks. Item 703 of Regulation S-K mandates that issuers disclose on their Form 10-K information about the total number of shares purchased and the average price per share in a buyback. Exchange listing standards also generally require that issuers disclose information surrounding board authorization of a buyback.

Regrettably, the debate surrounding share buybacks over the last several years has been defined more by conjecture and hyperbole than it has been by evidence and facts. The most common argument in opposition to stock buybacks is that buybacks divert capital away from other purposes, such as R&D or workforce investments. This argument has been soundly refuted by recent research.<sup>1</sup> Further, R&D spending has reached historic highs,<sup>2</sup> and companies are planning wage increases for 2022 that outpace increases from 2020 and 2021.<sup>3</sup>

Another critique of stock buybacks is that they are used by companies to inflate share prices which, in turn, increases executive compensation. However, the Share Repurchase Proposal offers little research or evidence to support this claim. In fact, the SEC’s own staff stated in a 2020 study their conclusion that, based on the research available, there is likely no correlation between repurchase activity and efforts to “artificially” inflate stock prices.<sup>4</sup>

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<sup>1</sup> See e.g. Edmans, A. “The Case for Stock Buybacks” Harvard Business Review (September 15, 2017) (“A comprehensive survey of financial executives concluded that “repurchases are made out of the residual cash flow after investment spending.”). Other studies find that CEOs repurchase more stock when growth opportunities are poor, and when they have excess capital. Asness, C., Hazelkorn, T., & Richardson, S. Buyback derangement syndrome. Journal of Portfolio Management, available at [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3082460](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3082460)

<sup>2</sup> [The Economics of Stock Buybacks | Tax Foundation](#)

<sup>3</sup> Willis Towers Watson employer survey (July 2021), available at: <https://www.wtwco.com/en-US/News/2021/07/us-employers-planning-larger-pay-raises-for-2022-willis-towers-watson-survey-finds>

<sup>4</sup> SEC staff report “Response to Congress: Negative Net Equity Issuance” at 45 (“Three facts suggest that the theories inconsistent with firm value maximization cannot account for the majority of

The Share Repurchase Proposal unfortunately relies on misconceptions about buybacks and does not properly consider the benefits that share buybacks provide for shareholders. It also neglects to consider the impact and efficacy of existing disclosure requirements and whether they are truly failing to provide investors with material information.

The Share Repurchase Proposal contains prescriptive next-day reporting requirements that will fundamentally alter issuers' compliance obligations and significantly increase costs. Next-day reporting after an issuer "executes" a buyback could also have disruptive market implications and costs that are not fully explored in the proposal. For example, an issuer that conducts a buyback over the period of several consecutive days may see the cost of those repurchases rise as the market becomes aware the company is buying back its stock. Ultimately, the main beneficiaries of the next-day reporting requirement could be sophisticated traders that can use the new disclosures to their advantage—not the long-term shareholders the proposed rule purports to protect. This proposed reporting requirement would thus be contrary to the "information symmetry" that Chair Gary Gensler has supported in public statements, as sophisticated investors are permitted longer time frames to report their equity holdings under the current disclosure regime.

We are also concerned by the proposed amendments to Item 703 of Regulation S-K, which would require issuers to explain their "objective or rationale" for share repurchases. This new disclosure will provide little-to-no useful information to investors beyond what is already required.

Accordingly, we urge the SEC to reconsider the assumptions underpinning its Share Repurchase Proposal and to delay further consideration of the proposed rule until it has conducted further economic analysis of its potential impact, including its relation to the Rule 10b5-1 Proposal, as described in more detail below.

### **Rule 10b5-1 Proposal**

We appreciate the SEC's efforts to ensure regulations governing executive trading plans under Rule 10b5-1 do not contain loopholes and that investors are provided with adequate disclosure regarding these plans. Corporate executives are often in possession of material nonpublic

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repurchase activity. First, repurchase announcements are accompanied by stock price increases. This announcement effect does not dissipate over time, as one would expect if repurchases were based on efforts to manipulate share prices. Second, most of the money spent on repurchases over the past two years was at companies that either do not link managerial compensation to EPS-based performance targets or whose boards considered the impact of repurchases when determining whether EPS-based performance targets were met or in setting the targets, suggesting that other rationales motivated the repurchases. Third, option-based managerial compensation cannot account for the increased substitution from dividends to repurchases, since option pay has declined over the past 20 years. Collectively, these findings potentially suggest that most repurchase activity does not represent an effort to artificially inflate stock prices or influence the value of option-based or EPS-linked compensation.")

information (“MNPI”) regarding their company. It is critical for investors to have confidence in SEC rules that are designed to prohibit insider trading based off MNPI.

Rule 10b5-1 provides an affirmative defense for an individual that, prior to becoming aware of MNPI, enters into a binding contract to purchase or sell the company’s shares at a predetermined amount, price, and date. Since the SEC’s adoption of Rule 10b5-1 in 2000, these plans have been an effective tool to guard against perceptions that insiders are regularly using their knowledge of MNPI to trade.

In seeking to update Rule 10b5-1, the SEC should be careful that any new requirements do not make operating a plan so cost-prohibitive that insiders refrain from establishing a plan in the first place. We also urge the SEC to consider the wide universe of individuals at many companies that enter into 10b5-1 plans. It is not just named executive officers (“NEOs”) of large public companies that rely on Rule 10b5-1. In many cases mid-level executives at smaller issuers – whose net worth may be completely tied up in the company’s stock – rely on 10b5-1 plans to sell company stock over a set period of time. We also encourage the SEC to remain mindful of corporate uses of Rule 10b5-1 plans – namely, to effectuate share repurchases. The affirmative defense endemic to Rule 10b5-1 enables company employees to realize their compensation and companies to effectively manage capital reserves, and we are concerned that the SEC’s proposed rule could disincentivize the usage of 10b5-1 plans.

While we understand in principle the desire for a “cooling off” period to begin trading once a 10b5-1 plan is adopted, we question whether 120 days is appropriate or whether the period should be shorter. Since 120 days would always extend beyond the quarterly reporting period when a plan is first established, the underlying issuer will have released the most recent quarterly financial results before that cooling off period is over. We believe the SEC should explore whether a shorter time frame would achieve the same goal without mandating a long delay for the commencement of trading under a 10b5-1 plan.

We also echo Commissioner Peirce’s concern that the “good faith” requirement will create an “unintended incentive for directors or officers to consider their Rule 10b5-1 plans in connection with corporate actions long after establishing their plans” and that the safe harbor under 10b5-1 could be contingent upon a retroactive subjective judgement as to whether certain aspects of the plan were operated in “good faith.”<sup>5</sup> As noted above and when considered along with other aspects of the Rule 10b5-1 Proposal, we are concerned these provisions as currently written could be a major disincentive for individuals to adopt a 10b5-1 plan.

Finally, we believe that the SEC should consider the interrelated nature of the Share Repurchase Proposal and the Rule 10b5-1 Proposal and conduct a further analysis as to the impact of having both of those rules in effect. Unfortunately, the economic analysis contained in each rule does

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<sup>5</sup> Commissioner Hester Peirce - Statement on Rule 10b5-1 and Insider Trading Proposing Release (Dec. 15, 2021)

not appropriately consider the potential effect of the other and how, for example, daily disclosure of share buybacks implemented pursuant to a 10b5-1 plan could impact the repurchase cost for the issuer or how new limitations on 10b5-1 plans could impact companies' repurchase programs. We implore the SEC to consider these rules together rather than in isolation.

**Conclusion**

We appreciate the opportunity to comment on these proposals. We look forward to being a resource for the SEC and to working with commissioners and staff on these critical issues.

Sincerely,

American Property Casualty Insurance Association

American Securities Association

Center On Executive Compensation

U.S. Chamber of Commerce

Nareit

National Association of Manufacturers

NIRI: The Association for Investor Relations

**Supplemental Letter of September 20, 2022**



September 20, 2022

Ms. Vanessa Countryman  
Secretary  
U.S. Securities and Exchange Commission  
100 F Street NE  
Washington, DC 20549

**Re: Proposed Rule, Securities and Exchange Commission; Share Repurchase Disclosure Modernization Supplemental Letter; 87 Fed. Reg. 8443 (April 1, 2022)**

Dear Ms. Countryman:

The U.S. Chamber of Commerce’s (the Chamber) Center for Capital Markets Competitiveness appreciates the Commission taking the time to meet with us on September 1, 2022, to obtain additional information and comments about its proposed Share Repurchase Disclosure Modernization Rule (Proposed Rule). As discussed at our meeting, we are submitting this supplemental letter to memorialize and expand on two comments we provided verbally.

*First*, the Commission must redo its cost-benefit analysis of the Proposed Rule in light of the Inflation Reduction Act’s new excise tax on buybacks.

“The APA’s arbitrary-and-capricious standard requires that agency action be reasonable and reasonably explained.” *FCC v. Prometheus Radio Project*, 141 S. Ct. 1150, 1158 (2021). As part of that reasoned-decisionmaking requirement, an agency must take stock of a meaningful intervening event that occurs *after* a rule is proposed but *before* it is finalized—after all, if circumstances have changed, the assumptions and analyses that justified the rule in the first place may no longer hold. *See, e.g., Portland Cement Ass’n v. EPA*, 665 F.3d 177, 187 (D.C. Cir. 2011); *see also API v. Johnson*, 541 F. Supp. 2d 165, 185 (D.D.C. 2008) (finding arbitrary and capricious agency failure to consider intervening change in law). That commonsense requirement applies with particular force where, as here, an agency is charged by statute with “appris[ing] itself” of the “economic consequences of a proposed regulation before it decides whether to adopt the measure.” *U.S. Chamber of Com. v. SEC*, 412 F.3d 133, 144 (D.C. Cir. 2005).

Here, there are good reasons to think the Inflation Reduction Act's excise tax will have a material effect on the costs and benefits of the Proposed Rule. To name just a few:

- Much of the Proposed Rule was driven by a perceived “growth” in share buybacks, 87 Fed. Reg. at 8445, and the idea that this increased prevalence would justify the notable “fixed” compliance costs that would come with this new disclosure regime, *id.* at 8459. However, following the excise tax, the volume of buybacks will likely decline. Given that lower volume, it is doubtful this already strained tradeoff will continue to hold together. Rather, the fixed costs of the Proposed Rule will likely dwarf any investor benefits.
- The Proposed Rule acknowledges that it may harm investors because it may deter companies from using buybacks even when it “would otherwise be optimal for shareholder value.” *Id.* at 8459. It is likely that these harms will be compounded by the new excise tax, because the cost of that tax *plus* the costs of complying with the Proposed Rule may ultimately price out an even greater number of buybacks that otherwise would have been “optimal” for shareholders.
- One of the principal justifications for adopting the Proposed Rule is the notion companies use buybacks opportunistically—to manage earnings, inflate share prices, and the like. As the Chamber wrote before, that is seriously misguided. In all events, the new tax will change the economic calculus behind *any* buyback program. If the Commission determines that the tax itself will sufficiently deter what it sees as “opportunistic” buybacks (as opposed to “optimal” ones), the Proposed Rule may become even more of a regulation in search of a problem.

Given these possible effects of the new buyback excise tax, the Commission must assess the Proposed Rule's costs and benefits afresh. Anything less would be arbitrary and capricious. The Commission cannot reasonably maintain it has “apprised itself” of the Proposed Rule's real world “economic consequences,” as required by law, when its economic analysis was performed against a backdrop that no longer exists. In other words, because there is a strong possibility the Inflation Reduction Act's excise tax may have altered the costs and benefits of the Proposed Rule, the Commission is obliged to analyze the Proposed Rule against the *current* landscape before finalizing any regulation.

Thus, *even if* the Commission thinks its original cost-benefit analysis was sound—although, as the Chamber explained in its April 1, 2022 letter, the Proposed Rule harbors serious flaws—the Commission *still* must redo its analysis given that the facts on the ground have materially changed since the Rule was proposed. Although the Commission may decide to stay the course, under the APA, it cannot simply ignore intervening events and stick to its pre-Inflation Reduction Act analysis without, at minimum, first assessing whether that analysis has become outdated. Reasoned



decision-making requires up-to-date information. The Commission may not blind itself to changed circumstances so as to regulate on yesterday's data.

What's more, if the Commission performs a new cost-benefit analysis, it also must provide an appropriate opportunity for the public to comment on that analysis before the rule is finalized.

*Second*, the Proposed Rule contravenes the First Amendment.

The Supreme Court has made clear that the First Amendment broadly guards against compelled speech, even in the commercial context. *See, e.g., NIFLA v. Becerra*, 138 S. Ct. 2361, 2372 (2018). As then-Judge Kavanaugh summarized the law: "To justify a compelled commercial disclosure, assuming the Government articulates a substantial governmental interest, the Government must show that the disclosure is purely factual, uncontroversial, not unduly burdensome, and reasonably related to the Government's interest," at the very least. *Am. Meat Inst. v. USDA*, 760 F.3d 18, 34 (D.C. Cir. 2014) (*AMI*) (Kavanaugh, J., concurring in the judgment); *see also NIFLA*, 138 S. Ct. at 2372.

The Proposed Rule runs afoul of this established standard. Foremost, its "rationale or objective" disclosure requirement forces companies to provide something *other* than "purely factual, uncontroversial information about the terms under which services will be available." *NIFLA*, 138 S. Ct. at 2732. A company's *reason* for engaging in buybacks is different in kind from the mundane stuff of such rote disclosures. Rather, "[s]hare buybacks are one of the most controversial corporate decisions today." Alex Edmans, Harv. L. S. Forum on Corp. Governance (Oct. 22, 2020), <https://bit.ly/3KHOp1f>. The First Amendment forbids compelling companies to spell out the "rationale or objective" behind these freighted business decisions. *See Nat'l Ass'n of Mfrs. v. SEC*, 800 F.3d 518, 530 (D.C. Cir. 2015) (invalidating "conflict mineral" rule).

The rest of the Proposed Rule is similarly infirm. Even when it comes to "purely factual, uncontroversial information about the terms under which services will be available," the Government may not force businesses to speak when doing so would be unduly burdensome or when the disclosures are not adequately tailored to the governmental interests at stake. Even assuming this standard applies to the remainder of the Proposed Rule, it is a "stringent" test, not to be confused with rational basis review or some other deferential lens. *See AMI*, 760 F.3d at 34 (Kavanaugh, J., concurring in the judgment). As the Chamber explained in its April 1, 2022, letter, the burdens of the Proposed Rule far outweigh its purported benefits. Namely, the Proposed Rule fails to explain why monthly disclosures would not be adequate, and it does not acknowledge the compelled-speech burdens that come with a next-day reporting regime. The First Amendment demands more. At minimum, disclosure rules must be adequately tailored and reduce instances of compelled speech where

possible—the present unjustified insistence on next-day reporting falls far short of that command.

In short, the Proposed Rule suffers from two further defects—one procedural, and the other constitutional. The Chamber appreciates the invitation to add these comments to those that we already raised in our April 1, 2022, letter. As we reiterated in our meeting last week, we remain available to assist the Commission on this important issue.

Sincerely,

A handwritten signature in black ink, appearing to read 'TK' followed by a long, sweeping horizontal line.

Tom Quadman  
Executive Vice President  
Center for Capital Markets Competitiveness  
U.S. Chamber of Commerce

# Exhibit A



OFFICE OF  
INSPECTOR GENERAL

UNITED STATES  
**SECURITIES AND EXCHANGE COMMISSION**  
WASHINGTON, D.C. 20549

**M E M O R A N D U M**

October 13, 2022

**TO:** Gary Gensler, Chair

**FROM:** Nicholas Padilla, Jr., Acting Inspector General

**SUBJECT:** *The Inspector General's Statement on the SEC's Management and Performance Challenges, October 2022*

The Reports Consolidation Act of 2000 requires the U.S. Securities and Exchange Commission's (SEC or agency) Office of Inspector General to identify and report annually on the most serious management and performance challenges facing the SEC.<sup>1</sup> In deciding whether to identify an area as a challenge, we consider its significance in relation to the SEC's mission; its susceptibility to fraud, waste, and abuse; and the SEC's progress in addressing the challenge. We compiled the attached statement on the basis of our past and ongoing audit, evaluation, investigation, and review work; our knowledge of the SEC's programs and operations; and information from the U.S. Government Accountability Office and SEC management and staff. We reviewed the agency's response to prior years' statements, and assessed its efforts to address recommendations for corrective action related to persistent challenges. We previously provided a draft of this statement to SEC officials and considered all comments received when finalizing the statement. As we begin fiscal year 2023, we again identified the following as areas where the SEC faces management and performance challenges to varying degrees:

- Meeting Regulatory Oversight Responsibilities
- Protecting Systems and Data
- Improving Contract Management
- Ensuring Effective Human Capital Management

Information on the challenge areas and the corresponding audit, evaluation, investigation, or review work are discussed in the attachment. If you have any questions, please contact me or Rebecca L. Sharek, Deputy Inspector General for Audits, Evaluations, and Special Projects.

---

<sup>1</sup> Pub. L. No. 106-531, § 3a, 114 Stat. 2537-38 (November 22, 2000).

Attachment

cc: Prashant Yerramalli, Chief of Staff, Office of Chair Gensler  
Heather Slavkin Corzo, Policy Director, Office of Chair Gensler  
Kevin Burris, Counselor to the Chair and Director of Legislative and Intergovernmental Affairs  
Scott Schneider, Counselor to the Chair and Director of Public Affairs  
Ajay Sutaria, GC Counsel, Office of Chair Gensler  
Phillip Havenstein, Operations Counsel, Office of Chair Gensler  
Hester M. Peirce, Commissioner  
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Jim Lloyd, Audit Coordinator/Assistant Chief Risk Officer, Office of Chief Risk Officer

October 13, 2022

OFFICE OF  
INSPECTOR  
GENERAL

The Inspector General's  
Statement on the SEC's  
Management and  
Performance Challenges



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## ABBREVIATIONS

<b>CAT</b>	Consolidated Audit Trail
<b>CISA</b>	Cybersecurity and Infrastructure Security Agency
<b>COVID-19</b>	Coronavirus Disease 2019
<b>Enforcement</b>	Division of Enforcement
<b>EXAMS</b>	Division of Examinations
<b>FISMA</b>	Federal Information Security Modernization Act of 2014
<b>FY</b>	fiscal year
<b>GAO</b>	U.S. Government Accountability Office
<b>IT</b>	information technology
<b>Kearney</b>	Kearney & Company, P.C.
<b>LH</b>	labor-hour
<b>NAICS</b>	North American Industry Classification System
<b>OA</b>	Office of Acquisitions
<b>OASB</b>	Office of the Advocate for Small Business Capital Formation
<b>OHR</b>	Office of Human Resources
<b>OIAD</b>	Office of the Investor Advocate
<b>OIG</b>	Office of Inspector General
<b>OIT</b>	Office of Information Technology
<b>OMB</b>	Office of Management and Budget
<b>OMWI</b>	Office of Minority and Women Inclusion
<b>RIA</b>	registered investment adviser
<b>SAM</b>	System for Award Management
<b>SEC, agency, or Commission</b>	U.S. Securities and Exchange Commission
<b>SLC</b>	Service Level Commitment
<b>T&amp;M</b>	time-and-materials
<b>TCR</b>	tips, complaints, and referrals
<b>TRENDS</b>	Tracking and Reporting Examination National Documentation System
<b>WTTS</b>	Workforce Transformation and Tracking System



## CHALLENGE: Meeting Regulatory Oversight Responsibilities

The U.S. Securities and Exchange Commission (SEC, agency, or Commission) is charged with overseeing about \$118 trillion in annual securities trading on the United States equity markets and the activities of more than 29,000 registered entities, including investment advisers, mutual funds, exchange-traded funds, broker-dealers, municipal advisors, and transfer agents. The agency also oversees 24 national securities exchanges, 95 alternative trading systems, 10 credit rating agencies, and 7 active registered clearing agencies, as well as the Public Company Accounting Oversight Board, the Financial Industry Regulatory Authority, the Municipal Securities Rulemaking Board, the Securities Investor Protection Corporation, and the Financial Accounting Standards Board. In addition, the SEC is responsible for selectively reviewing the disclosures and financial statements of more than 7,900 reporting companies.

As in previous years, agency management and the Office of Inspector General (OIG) recognize that the SEC's ability to meet its mission of protecting investors, maintaining fair, orderly, and efficient markets, and facilitating capital formation becomes more challenging as the markets, products, and participants within the SEC's purview increase in size, number, and complexity. The SEC's strategic plan establishes goals and initiatives to ensure that the agency focuses on the needs of investors, as well as its ability to adapt to rapidly changing markets, new technology, innovation, and evolving global risks.<sup>1</sup>

We describe below the challenges of (1) managing resources while meeting the SEC's regulatory agenda; (2) keeping pace with changing markets and innovations; and (3) leveraging technology and analytics to meet mission requirements and respond to significant developments and trends.

### Managing Resources While Meeting the Regulatory Agenda

Rulemaking is the process by which federal agencies implement legislation passed by Congress and signed into law by the President and, as part of its regulatory oversight responsibilities, the SEC creates or updates rules (also referred to as "regulations"). Legislation, such as the Securities Act of 1933,<sup>2</sup> the Securities Exchange Act of 1934,<sup>3</sup> the Investment Company Act of 1940,<sup>4</sup> the Sarbanes-Oxley Act of 2002,<sup>5</sup> and the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank)<sup>6</sup> provide the framework for the SEC's oversight of the securities markets. The rulemaking process involves several steps that are designed to give the public an opportunity to provide their opinions on whether the agency should adopt or adopt with modifications a proposed rule. According to the Administrative Procedure Act,<sup>7</sup> agencies must follow an open process when issuing regulations, including publishing a

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<sup>1</sup> On October 11, 2018, the SEC issued a strategic plan for fiscal years 2018 to 2022. On August 24, 2022, the SEC released for public comment a draft strategic plan for fiscal years 2022 to 2026. As of the date of this document, the new strategic plan had not been finalized.

<sup>2</sup> Pub. L. 73-22, 48 Stat. 74 (May 27, 1933).

<sup>3</sup> Pub. L. 73-291, 48 Stat. 881 (June 6, 1934).

<sup>4</sup> Pub. L. 76-768, 54 Stat. 789 (August 22, 1940).

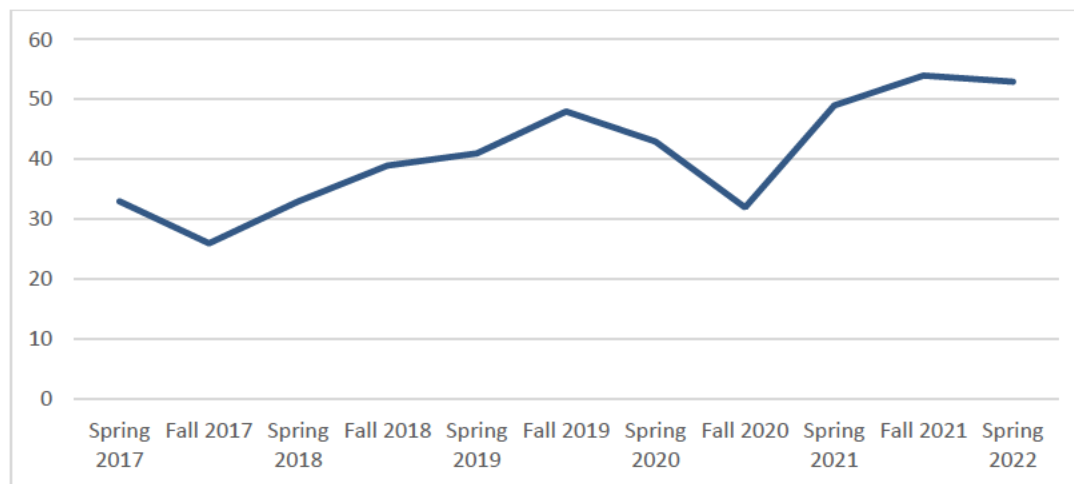
<sup>5</sup> Pub. L. 107-204, 116 Stat. 745 (July 30, 2002).

<sup>6</sup> Pub. L. 111-203, 124 Stat. 1376 (July 21, 2010).

<sup>7</sup> Pub. L. 79-404, 60 Stat. 237, 239 (June 11, 1946).

statement of rulemaking authority in the Federal Register for all proposed and final rules. Moreover, each fall and spring, regulatory agencies are required to publish a regulatory agenda,<sup>8</sup> which is how agencies announce future rulemaking activities and update the public on pending and completed regulatory actions. As Figure 1 shows, the number of rulemaking activities on the SEC's regulatory agenda between spring 2017 and spring 2022 increased overall.

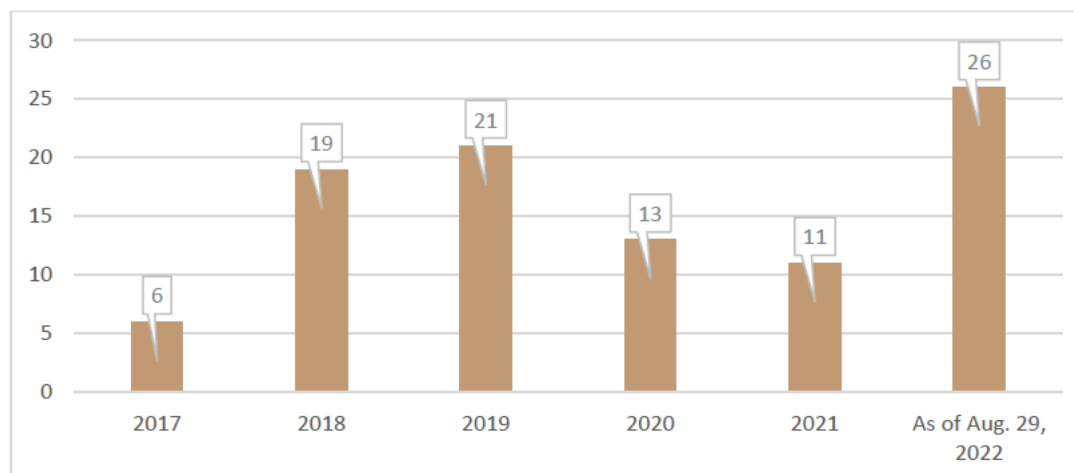
**FIGURE 1. Number of Rulemaking Activities on the SEC's Regulatory Agenda (Spring 2017 – Spring 2022)**



Source: *OIG-generated based on data from the Office of Management and Budget's (OMB) Office of Information and Regulatory Affairs (<https://www.reginfo.gov/public/> last accessed on September 8, 2022).*

Additionally, in only the first 8 months of 2022, the SEC proposed 26 new rules, which was more than twice as many new rules as proposed the preceding year and more than it had proposed in each of the previous 5 years. (See Figure 2.)

**FIGURE 2. Number of New SEC Rules Proposed (2017 – August 2022)**



Source: *OIG-generated based on data from the SEC (<https://www.sec.gov/rules/proposed.shtml>, as of August 29, 2022).*

<sup>8</sup> Pub. L. 96-354, 94 Stat. 1166 (September 19, 1980).

We met with managers from the SEC's divisions of Trading and Markets, Investment Management, Corporation Finance, and Economic and Risk Analysis, some of whom raised concerns about increased risks and difficulties managing resources and other mission-related work because of the increase in the SEC's rulemaking activities. For example, some reported an overall increase in attrition (discussed further on page 21 of this document) and difficulties hiring individuals with rulemaking experience. In the interim, managers reported relying on detailees, in some cases with little or no experience in rulemaking. Others told us that they may have not received as much feedback during the rulemaking process, either as a result of shortened timelines during the drafting process or because of shortened public comment periods. Although no one we met with identified errors that had been made, some believed that the more aggressive agenda—particularly as it relates to high-profile rules that significantly impact external stakeholders—potentially (1) limits the time available for staff research and analysis, and (2) increases litigation risk. Finally, some managers noted that fewer resources have been available to complete other mission-related work, as rulemaking teams have borrowed staff from other organizational areas to assist with rulemaking activities.

Furthermore, the SEC's rulemaking function relies on coordination and collaboration amongst several agency divisions and offices and, as we reported in our October 2021 statement on the SEC's management and performance challenges, agency leaders should take measures to strengthen communication and coordination across SEC components. Indeed, the SEC's fiscal year (FY) 2021 Agency Financial Report states that the SEC values teamwork and recognizes "that success depends on a skilled, diverse, coordinated team committed to the highest standards of trust, hard work, cooperation, and communication."<sup>9</sup> Additionally, the SEC's strategic plan identifies teamwork of the SEC's staff and its leaders, along with other elements, as the "foundation" of the agency.<sup>10</sup> To support the strategic plan's Goal 3 – "Elevate the SEC's performance by enhancing our analytical capabilities and human capital development" – the SEC committed to the following initiative:

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*3.5 Promote collaboration within and across SEC offices to ensure we are communicating effectively across the agency, including through evaluation of key internal processes that require significant collaboration.<sup>11</sup>*

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In response to our October 2021 statement on the SEC's management and performance challenges, agency management re-affirmed its commitment to promoting effective and collaborative information-sharing across the agency.<sup>12</sup> Management's continued attention to strengthening communication and coordination across divisions and offices is instrumental to (1) preventing unintentional negative impacts to divisions and offices when modifying agency-wide processes, (2) maintaining positive trends in employee views on collaboration,<sup>13</sup> and (3) achieving the goals established in the SEC's strategic plan.

<sup>9</sup> U.S. Securities and Exchange Commission, *Fiscal Year 2021 Agency Financial Report*; November 15, 2021.

<sup>10</sup> U.S. Securities and Exchange Commission, *Strategic Plan Fiscal Years 2018-2022*, Goal 3; October 11, 2018.

<sup>11</sup> The agency's draft strategic plan for FY 2022 to FY 2026 (Goal 3) similarly emphasizes the importance of continually strengthening and promoting collaboration within and across SEC offices.

<sup>12</sup> U.S. Securities and Exchange Commission, *Fiscal Year 2021 Agency Financial Report*; November 15, 2021.

<sup>13</sup> With regards to the 2021 Federal Employee Viewpoint survey, 71 percent of agency respondents agreed that SEC managers promote communication among different work units (a 4 percentage point decrease from the previous year). In addition, 75 percent of agency respondents agreed that SEC managers support collaboration across work units to accomplish work objectives (a 3 percentage point decrease from the previous year).

Despite management's commitment to cross-functional collaboration and communication, personnel we met with (including those from the Division of Economic and Risk Analysis, the Division of Enforcement [Enforcement], and the Office of the General Counsel, among others) identified coordination and communication as a persistent challenge in the rulemaking process, particularly given potential overlaps in jurisdiction and differences in opinions. We reported on such challenges in a management letter issued in September 2022.<sup>14</sup> Specifically, we reported that, around December 2021, the Office of the Chair modified the process for coordinating internal reviews of draft agency rules, resulting in the Office of the Advocate for Small Business Capital Formation (OASB)<sup>15</sup> and the Office of the Investor Advocate (OIAD)<sup>16</sup> receiving only fatal flaw drafts of proposed rules<sup>17</sup> for a brief period of time.<sup>18</sup> This change was not formally documented or communicated, and the then-directors of OASB and OIAD were not aware of the change until after it took effect. All parties involved acknowledged that the Office of the Chair has the authority to direct the agency's rulemaking process. Moreover, OASB and OIAD personnel stated that they were generally able to carry out their responsibilities. However, changes to internal processes likely to impact OASB's and OIAD's review and comment related to draft proposed agency rules may unintentionally limit their ability to fulfill their advocacy roles and carry out office functions, and may hinder effective collaboration and information sharing across the agency.<sup>19</sup> Although we did not make any formal recommendations, we encouraged the Office of the Chair to consider, as a management practice, notifying OASB and OIAD before future changes to the rulemaking process, potentially impacting these offices, are implemented.

## Keeping Pace With Changing Markets and Innovations

As securities markets continue to grow in size and complexity and technological advancements contribute to changes in how markets operate, the SEC's ability to remain an effective regulator requires that it continuously monitor the market environment, and as appropriate, adjust and modernize its expertise, rules, regulations, and oversight tools and activities.

Securities markets have experienced significant growth in recent years, with a record number of families holding direct and indirect stocks, and (as Table 1 shows) a record number of registered investment



*Technological advancements and commercial developments continue to change how our securities markets operate and spur the development of new products.*

Source: U.S. Securities and Exchange Commission, *Fiscal Year 2021 Agency Financial Report*, November 15, 2021.

<sup>14</sup> U.S. Securities and Exchange Commission, Office of Inspector General, *Final Management Letter: Changes to the Internal Review Process for Proposed Rules May Impact the Office of the Advocate for Small Business Capital Formation and the Office of the Investor Advocate* (September 29, 2022).

<sup>15</sup> The SEC Small Business Advocate Act of 2016 (Pub. L. No. 114-284, 130 Stat. 1447 [December 16, 2016]) requires OASB to advocate for small businesses and their investors by, among other things, analyzing the potential impact on small businesses and small business investors of Commission-proposed regulations that are likely to have a significant economic impact on small businesses and small business capital formation.

<sup>16</sup> Pursuant to Section 915 of Dodd-Frank and codified at Section 4(g) of the Exchange Act of 1934, OIAD is required to analyze the potential impact on investors from proposed rules and regulations of the Commission.

<sup>17</sup> A fatal flaw draft is the last draft circulated before the Commission votes on a proposed rule, often only a few days before the vote. It is typically the final version of the rule, to be reviewed only for critical issues, and will not incorporate policy revisions.

<sup>18</sup> According to agency officials, the change in the rulemaking process was reversed in early 2022.

<sup>19</sup> Other OIG work completed in FY 2022 also highlighted areas where collaboration and communication within the SEC could be improved. See U.S. Securities and Exchange Commission, Office of Inspector General, *The SEC Can Improve in Several Areas Related to Hiring* (Report No. 572; February 28, 2022).



**TABLE 1. Number of RIAs (FY 2018 – July 2022)**

Date	Number of RIAs
Beginning of FY 2018	12,616
Beginning of FY 2019	13,222
Beginning of FY 2020	13,458
Beginning of FY 2021	13,810
Beginning of FY 2022	14,719
As of July 1, 2022	15,167

Source: *OIG-generated based on data provided by EXAMS.*

Order outlines a national policy for digital assets to include protecting consumers, investors, and businesses.<sup>21</sup>

In recognition of the need to protect investors and respond to the changing environment, the SEC is taking steps to address the increasing risks related to the crypto market such as (1) getting platforms registered and regulated much like exchanges; (2) coordinating with the Commodity Futures Trading Commission on determining how best to regulate platforms where trading of securities and non-securities is intertwined; and (3) identifying how to work with platforms and best ensure the protection of customers' assets. Additionally, the SEC recently announced the allocation of 20 additional positions for Enforcement's Crypto Assets and Cyber Unit, nearly doubling its size, as the volatile and speculative crypto marketplace has attracted tens of millions of American investors and traders.<sup>22</sup> As the SEC continues to increase its workforce and take other steps to protect investors, there is uncertainty about which agency—the SEC or the Commodity Futures Trading Commission—will have regulatory oversight responsibilities over the crypto market and what legal tools and authorities will be available. Such uncertainty can unsettle market factors and elevate risk for Main Street investors.

EXAMS also recognizes and strives to adapt to changing market factors. In its 2022 Examinations Priorities,<sup>23</sup> EXAMS noted significant focus areas that pose unique or emerging risks to investors or the markets, such as environmental, social, and governance investing; standards of conduct issues for broker-dealers and RIAs; and emerging technologies and crypto-assets, among others. EXAMS will continue to conduct examinations of broker-dealers and RIAs, many of which use developing financial technologies, and market participants engaged with crypto-assets, with a continued need to optimize its limited resources as it works to improve and promote compliance with regulatory requirements.

In a report we issued in January 2022, we noted steps EXAMS took to optimize its limited resources and increase efficiency and effectiveness, to include the following:

<sup>20</sup> The White House (March 9, 2022). *FACT SHEET: President Biden to Sign Executive Order on Ensuring Responsible Development of Digital Assets.*

<sup>21</sup> *Executive Order on Ensuring Responsible Development of Digital Assets*; March 9, 2022.

<sup>22</sup> Gurbir S. Grewal Director, Division of Enforcement, Testimony on "Oversight of the SEC's Division of Enforcement" Before the United States House of Representatives Committee on Financial Services Subcommittee on Investor Protection, Entrepreneurship, and Capital Markets; July 21, 2022.

<sup>23</sup> U.S. Securities and Exchange Commission, *Division of Examinations 2022 Examination Priorities*; March 30, 2022.

- Moved its Tracking and Reporting Examination National Documentation System (TRENDS) to a new, cloud-based platform, which is expected to improve the system's adaptability, workflow capability, and data standardization;
- Launched a new examination support service, which among other things, assists examiners with data staging, cleansing, transformation, enrichment, and analysis; and
- Advanced its centralized asset verification program, which, according to EXAMS management, has enabled growth in the number of exams involving asset verification, as well as the amount of assets verified during these exams.<sup>24</sup>

Although EXAMS took these and other steps to increase efficiencies, we also reported that controls over the RIA examination planning processes needed improvement. Specifically, we found some staff commenced substantive RIA examination procedures before management approved the examination pre-fieldwork phase, and staff did not always consistently maintain key documents in TRENDS. In addition, we were unable to find documentation indicating that an examination supervisor notified registrants of non-EXAMS staff participation, as required.

We recommended that management (1) develop controls that help ensure timely supervisory approval of an examination's pre-fieldwork phase; (2) reiterate to examination staff and management the importance of and requirements for timely supervisory approval of each examination's pre-fieldwork phase; and (3) review examination documentation requirements regarding communications with registrants to ensure they are clear and examiners maintain such documentation in a consistent manner, and update examination policies as needed. Management concurred with our recommendations, which, as of the date of this document, are open and will be closed upon completion and verification of corrective action taken.

As we begin FY 2023, we will continue to monitor agency plans and actions to improve controls around supervisory approval of examinations' pre-fieldwork phase and documentation requirements regarding communications with registrants.

## **Use of Technology and Analytics to Meet Mission Requirements and Respond to Significant Developments and Trends**

As we reported in previous years, agency management and the OIG continue to recognize the importance of technology and analytics in the SEC's ability to efficiently and effectively meet mission requirements and respond to significant developments and trends in the evolving capital markets. The SEC's strategic plan (Goals 2 and 3, and related strategic initiatives) reflects the importance of these efforts.<sup>25</sup> Additionally, according to the SEC's FY 2023 Congressional Budget Justification, the economy's reliance on the rapidly changing field of data analytics is growing, and the Commission needs to adjust by

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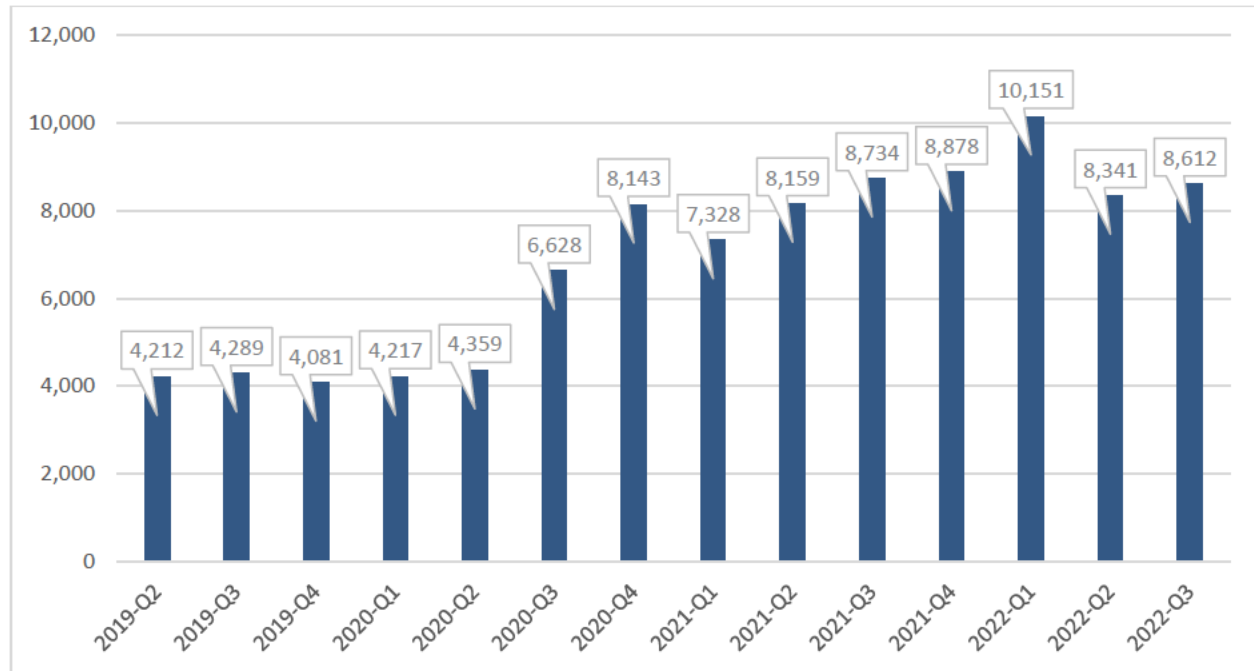
<sup>24</sup> U.S. Securities and Exchange Commission, Office of Inspector General, *Registered Investment Adviser Examinations: EXAMS Has Made Progress To Assess Risk and Optimize Limited Resources, But Could Further Improve Controls Over Some Processes* (Report No. 571, January 25, 2022).

<sup>25</sup> The agency's draft strategic plan for FY 2022 to FY 2026 (Goals 1, 2, and 3) similarly emphasizes that the SEC must effectively use technology and data.

re-evaluating how it assesses data and incorporates machine learning and deep learning into its examination and enforcement functions.<sup>26</sup>

Notably, Enforcement analyzes a massive volume of data each year including thousands of tips, complaints, and referrals (TCR) related to allegations of possible violations of the federal securities laws or conduct that poses a risk of harm to investors. Enforcement receives TCRs from the public, self-regulatory organizations, other federal and local agencies, and other entities. As Figure 3 shows, the SEC received a record number of TCRs in the first quarter of 2022.

**FIGURE 3. Number of TCRs Received (2019, Quarter 2 – 2022, Quarter 3)**



Source: OIG-generated based on data provided by Enforcement’s Office of Market Intelligence. FY 2021 totals exclude 12,935 TCRs related to the market volatility event, and totals exclude TCRs submitted as test TCRs to validate the system.

In an evaluation report we issued in February 2021, we reported on the SEC’s process to plan and develop a future TCR system and we recommended actions to further strengthen the SEC’s TCR program and TCR system management and development.<sup>27</sup> We also encouraged management to monitor the upward trend in TCRs, and determine whether additional actions, resources, or staff allocations were needed. Management has since taken actions to address our recommendations and is working to implement a new TCR management system. According to Enforcement’s Office of Market Intelligence, the organization implemented a risk-based process to assess and triage TCRs through the use of analytics and automation, which will be incorporated into the new TCR system. In planning for the new system, the agency continues to assess the application and data, conduct market research on potential technologies, and prepare a strategic plan.

<sup>26</sup> U.S. Securities and Exchange Commission, *Fiscal Year 2023 Congressional Budget Justification and Annual Performance Plan; Fiscal Year 2021 Annual Performance Report*; March 28, 2022.

<sup>27</sup> U.S. Securities and Exchange Commission, Office of Inspector General, *The SEC Can Further Strengthen the Tips, Complaints, and Referrals Program* (Report No. 566; February 24, 2021).

Although we acknowledge the Office of Market Intelligence's use of analytics and implementation of a new TCR system, the TCR program—along with many other critical programs and systems within the SEC—must rely on personnel to correctly input data into systems. For example, with the handling of TCRs, agency staff from divisions and offices must be sure to correctly transfer TCRs to the Office of Market Intelligence. As noted in a management letter our office issued in May 2021, we identified 2 matters of 3,303 we reviewed that were not transferred from the Office of Investor Education and Advocacy to the TCR system.<sup>28</sup> Moreover, in FY 2022, we investigated the former SEC Ombudsman and found that the former Ombudsman failed to enter TCRs on investor matters received by the Office of the Ombudsman that warranted entry, as required by the SEC's *Commission-Wide Policies and Procedures for Handling TCRs*. Specifically, the agency's policy and corresponding administrative regulation<sup>29</sup> state that all SEC staff are responsible for entering TCRs into the TCR system or forwarding them to a TCR point of contact within specified timeframes, and "when in doubt, staff should err on the side of entering a TCR." Instead, the former Ombudsman directed staff within the Office of the Ombudsman to refer investors to enter their own TCRs on matters related to alleged securities law violations or fraud. As

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*Improper handling of TCRs may impede  
SEC investor protection efforts*

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previously noted, through the TCR program, the SEC receives and responds to credible allegations of possible violations of the federal securities laws. Improper handling of TCRs may impede the SEC's ability to timely and effectively protect investors.

**Ongoing and Anticipated OIG Work.** In FY 2023, we will continue to assess how well the SEC effectively and efficiently meets its regulatory oversight responsibilities. We will follow-up on open recommendations intended to improve controls around the examination program, and we will complete an ongoing audit of the SEC's whistleblower program and an evaluation of Enforcement's efforts and goals to expedite investigations, where possible and appropriate. Finally, we will initiate a review of the SEC's oversight of entity compliance with Regulation Best Interest and Form CRS.<sup>30</sup>

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<sup>28</sup> U.S. Securities and Exchange Commission, Office of Inspector General, *Final Management Letter: Actions May Be Needed To Improve Processes for Receiving and Coordinating Investor Submissions* (May 24, 2021).

<sup>29</sup> U.S. Securities and Exchange Commission, SEC Administrative Regulation 3-2, *Tips, Complaints, and Referrals (TCR) Intake Policy*, November 29, 2016.

<sup>30</sup> Regulation Best Interest, the new Form CRS Relationship Summary, and two separate interpretations under the Investment Advisers Act of 1940 are part of a package of rulemakings and interpretations adopted by the Commission on June 5, 2019, to enhance and clarify the standards of conduct applicable to broker-dealers and investment advisers, help retail investors better understand and compare the services offered and make an informed choice of the relationship best suited to their needs and circumstances, and foster greater consistency in the level of protections provided by each regime, particularly at the point in time that a recommendation is made.



## CHALLENGE: Protecting Systems and Data

Because the work of the SEC touches nearly every part of the nation's capital markets and advances international regulatory, supervisory, and enforcement cooperation, it is critically important to protect agency systems and data. In 2022, the Administration along with the Cybersecurity and Infrastructure Security Agency (CISA) warned that malicious cyber activity against the United States homeland could have an impact on our nation's organizations, and threats are more pronounced because of international events.<sup>31</sup> The U.S. Government Accountability Office (GAO) also reported that cyber risks are growing, and cyberattacks targeting critical infrastructure—including financial services—could affect entire systems and result in catastrophic financial loss.<sup>32</sup> Individuals or groups with malicious intentions attempt to intrude into agency systems to obtain sensitive information, commit fraud and identity theft, disrupt agency operations, or launch attacks against other systems and networks. Even in the absence of those intentions, inadequate safeguards can lead to the unauthorized disclosure, modification, use, or disruption of information that can compromise the integrity of agency operations. Therefore, the SEC must continue to take steps to safeguard the security, integrity, and availability of its information systems and sensitive data.

SEC management has recognized that “efficient, effective, and responsible use of data and information technology (IT) is a crucial focus of the agency.”<sup>33</sup> In its FY 2023 Congressional Budget Justification, the agency requested additional funds for IT initiatives to expand progress in key areas such as cybersecurity, secure cloud infrastructure, and data management. CISA is also continuing to publish guidance to make the federal civilian workforce more resilient to cyber threats.

The SEC's FY 2023 budget request addresses plans to hire additional personnel within the Office of Information Technology (OIT) who would provide expertise in cloud computing; strengthen security controls, policies, and procedures; and help the agency comply with requirements mandated in a recent Executive Order to move the agency toward a “zero trust” approach to cybersecurity.<sup>34</sup> Additionally, as we describe further below, opportunities exist to better protect SEC systems and data, including by evaluating and addressing the underlying cause(s) and impact of a material weakness related to insufficient user access controls, strengthening the agency's cybersecurity posture, and continuing to mature its information security program.



*A critical element of the SEC's strategy is to protect the agency's two most important assets, its people and its data, both of which are vital to executing the SEC's mission.*

Source: U.S. Securities and Exchange Commission, *Fiscal Year 2021 Agency Financial Report*; November 15, 2021.

<sup>31</sup> The White House (March 21, 2022). *FACT SHEET: Act Now to Protect Against Potential Cyberattacks*; and CISA, *Shields Up* website (<https://www.cisa.gov/shields-up>, last accessed on September 9, 2022).

<sup>32</sup> U.S. Government Accountability Office, *CYBER INSURANCE Action Needed to Assess Potential Federal Response to Catastrophic Attacks* (GAO-22-104256, June 2022).

<sup>33</sup> U.S. Securities and Exchange Commission, *Fiscal Year 2023 Congressional Budget Justification and Annual Performance Plan; Fiscal Year 2021 Annual Performance Report*; March 28, 2022.

<sup>34</sup> Executive Order 10460, *Improving the Nation's Cybersecurity*, May 12, 2021.

## Evaluating and Addressing the Cause(s) and Impact of a Material Weakness Related to Insufficient User Access Controls

In its FY 2021 Agency Financial Report, the SEC disclosed a newly discovered material weakness associated with lack of controls related to user access to a Commission system. Specifically, the SEC reported that the information tracking and document storage system for documents related to recommendations for certain Commission actions did not include controls sufficient to prevent access by staff who should not view such documents.<sup>35</sup> This is important because, while the Commission has both investigatory and adjudicatory responsibilities, the Administrative Procedure Act contemplates the separation of those functions among the agency staff who assist the Commission in each.<sup>36</sup> Therefore, agency employees who are investigating or prosecuting an adjudicatory matter before the Commission generally may not participate in the Commission's decision-making in that or a factually related matter. However, the identified user access control deficiency did not ensure the necessary separation of the Commission's enforcement and adjudicatory functions for administrative adjudications. The SEC's FY 2021 Agency Financial Report further noted that, while a review of the affected system was underway, action had been taken to remediate the control deficiency.

Then, in April 2022, the Commission released a statement that provided additional information about the control deficiency, along with the results of the SEC's review of the impact of the control deficiency on two ongoing federal court litigations: *SEC v. Cochran*, No. 21-1239 (S. Ct.), and *Jarkesy v. SEC*, No. 20-61007 (5th Cir.). The statement reads, in part:

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*The Commission has determined that, for a period of time, certain databases maintained by the Commission's Office of the Secretary were not configured to restrict access by Enforcement personnel to memoranda drafted by Adjudication staff. As a result, in a number of adjudicatory matters, administrative support personnel from Enforcement, who were responsible for maintaining Enforcement's case files, accessed Adjudication memoranda via the Office of the Secretary's databases. Those individuals then emailed Adjudication memoranda to other administrative staff who in many cases uploaded the files into Enforcement databases.<sup>37</sup>*

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With respect to these two matters, according to the Commission's statement, agency enforcement staff had access to certain adjudicatory memoranda, but this access "did not impact the actions taken by the staff investigating and prosecuting the cases or the Commission's decision-making in the matters."

The SEC is continuing to review and has not yet disclosed the full impact the internal control deficiency caused by the insufficient user access controls had on the remaining affected adjudicatory matters. The Commission's statement indicated that the agency's review team will continue to assess the remaining

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<sup>35</sup> U.S. Securities and Exchange Commission, *Agency Financial Report Fiscal Year 2021*; November 15, 2021.

<sup>36</sup> Pub. L. 79-404 60 Stat. 240 (June 11, 1946).

<sup>37</sup> U.S. Securities and Exchange Commission, *Commission Statement Relating to Certain Administrative Adjudications*; April 5, 2022.

affected adjudicatory matters, and additional findings will be published “in the near future.” Furthermore, the Commission stated that, going forward, it will work to better protect the separation of adjudicatory work-product within the system for administrative adjudications, including by enhancing systems for controlling access to Adjudication memoranda.

In conjunction with the ongoing FY 2022 evaluation of the SEC’s implementation of the Federal Information Security Modernization Act of 2014 (FISMA), we assessed the SEC’s incident response related to this control deficiency, and found that the agency generally complied with applicable requirements. Nonetheless, the OIG will continue to independently review the control deficiency to understand and, as appropriate, report the full impact of this material weakness. We also will continue to monitor the agency’s progress towards redesigning or replacing the systems in question.

### Strengthening the SEC’s Cybersecurity Posture

The SEC is aware that protecting information systems and data is a priority, as cyber actors may exploit poor security configurations (either misconfigured or left unsecured), weak controls, and other poor cyber hygiene practices to gain initial access or as part of other tactics to compromise a system. In FY 2022, the SEC’s OIT made progress by taking corrective action sufficient to close one cybersecurity-related recommendation from a previous OIG report.<sup>38</sup> However, as Table 2 summarizes, work remains to close other cybersecurity-related recommendations we issued before FY 2021.

**TABLE 2. Certain Open Cybersecurity Recommendations as of October 2022\***

Report Title	Date Issued	Recommendation(s)
<i>Opportunities Exist To Improve the SEC’s Management of Mobile Devices and Services</i> (Report No. 562)	9/30/20	Recommendations 5 and 6 Current estimated corrective action completion date: February 2023

Source: OIG-generated based on recommendation tracking and follow-up records.

\* This does not include recommendations issued in connection with mandated annual information security evaluations, which we discuss on pages 13 and 14 of this document.

Recognizing there is more work to be done, in FY 2023, the SEC plans to increase efforts to:

- Support the implementation of security services within agency-selected cloud capabilities.
- Enhance identity, access, and privilege management protocols and operations across platforms.
- Modernize security operations capabilities focusing on automation, integration of shared services and experts through managed services, and proactive capabilities to identify threats.
- Continue the implementation of a secure application development structure across all agency development teams and projects.<sup>39</sup>

<sup>38</sup> U.S. Securities and Exchange Commission, Office of Inspector General, *The SEC Can More Strategically and Securely Plan, Manage, and Implement Cloud Computing Services* (Report No. 556; Nov. 7, 2019), Recommendation 3.

<sup>39</sup> U.S. Securities and Exchange Commission, *Fiscal Year 2023 Congressional Budget Justification and Annual Performance Plan; Fiscal Year 2021 Annual Performance Report*; March 28, 2022.

The SEC also has an open recommendation from a recent GAO report on assessing security controls related to telework. The CARES Act of 2020 contains a provision for GAO to monitor the federal response to the pandemic. Specifically, GAO was asked to examine federal agencies' preparedness to support expanded telework. In September 2021, GAO issued its report, which contained two recommendations for the SEC regarding the assessment and documentation of relevant IT security controls and enhancements.<sup>40</sup> Although the agency's comments to the report state that the SEC expected to complete actions to remediate the recommendations by the second quarter of FY 2022, as of September 15, 2022, remediation work was still underway for the recommendation related to ensuring that the agency documents relevant IT security controls and enhancements in the security plan for the system that provides remote access for telework. GAO concluded that if agencies do not sufficiently document relevant security controls, assess the controls, and fully document remedial actions for weaknesses identified in security controls, then agencies are at increased risk that vulnerabilities in their systems that provide remote access could be exploited.

The SEC also faces cybersecurity challenges with respect to its access, use, and security of data available through the Consolidated Audit Trail (CAT). Pursuant to an SEC rule (Rule 613), self-regulatory organizations have submitted a national market system plan to create, implement, and maintain a consolidated order tracking system, or CAT, that when fully implemented will capture customer and order event information for orders in national market system securities, across all markets, from the time of order inception through routing, cancellation, modification, or execution. In its FY 2023 budget request, the SEC noted that the CAT continues to roll out functionality as the phased launch of broker-dealer reporting and regulator functionality progresses. Because CAT data is highly sensitive, the SEC must continue working to establish an environment and applications to appropriately secure the data accessed and used by the SEC as it becomes available.

## Maturing the SEC's Information Security Program

Effective information security controls are essential to protecting the SEC's information systems and the data contained therein. To help the SEC establish and maintain effective information security controls and to comply with FISMA, the OIG annually evaluates the SEC's implementation of FISMA information security requirements and the effectiveness of the agency's information security program on a maturity model scale.<sup>41</sup> The OIG contracted with Kearney & Company, P.C. (Kearney) to conduct the FY 2021 independent evaluation and, on December 21, 2021, issued the report titled, *Fiscal Year 2021 Independent Evaluation of SEC's Implementation of the Federal Information Security Modernization Act of 2014* (Report No. 570).<sup>42</sup>

As stated in Report No. 570, since FY 2020, OIT improved aspects of the SEC's information security program. Among other actions taken, the SEC refined its management of security training roles and responsibilities, enhanced its security training strategy, implemented the agency's policy for specialized security training, optimized a vulnerability disclosure policy, refined its configuration management

<sup>40</sup> U.S. Government Accountability Office, *COVID-19: Selected Agencies Overcame Technology Challenges to Support Telework but Need to Fully Assess Security Controls* (GAO-21-583, September 2021).

<sup>41</sup> Pub. L. No. 113-283, § 3555, 128 Stat. 3073 (2014).

<sup>42</sup> As previously stated, the FY 2022 FISMA evaluation is ongoing and will be completed in the first quarter of FY 2023.



processes related to reconciliation of software code in production, improved its incident response information-sharing capabilities, and improved its contingency planning capabilities. Notably, these improvements occurred despite the unique challenges presented by Coronavirus Disease 2019 (COVID-19).

Although the SEC strengthened its program, Kearney determined for FY 2021 that the agency's information security program did not meet annual Inspector General FISMA reporting metrics' definition of "effective," which requires the simple majority of domains to be rated as Level 4 ("Managed and Measurable").<sup>43</sup> As stated in Report No. 570, the SEC's maturity level for the five Cybersecurity Framework security functions ("identify," "protect," "detect," "respond," and "recover") and related domains was primarily Level 3 ("Consistently Implemented") or Level 4 ("Managed and Measurable"). Although the SEC's program, as a whole, did not reach the level of an effective information security program, the agency showed significant improvement at the domain level. Specifically, the agency's assessed maturity level for the Security Training domain increased from Level 2 ("Defined") to Level 5 ("Optimized"). Table 3 shows the SEC's FISMA ratings in FY 2020 and FY 2021.

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*In FY 2021, the SEC's maturity level was primarily "Consistently Implemented" or "Managed and Measurable"*

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**TABLE 3. Summary of SEC FISMA Ratings (FY 2020 and FY 2021)**

Domain	Assessed Rating By FY	
	2021	2020
Risk Management	Level 3: <i>Consistently Implemented</i>	Level 3: <i>Consistently Implemented</i>
Supply Chain Risk Management	Level 1: <i>Ad Hoc</i>	<i>Not Applicable</i>
Configuration Management	Level 2: <i>Defined</i>	Level 2: <i>Defined</i>
Identity and Access Management	Level 2: <i>Defined</i>	Level 2: <i>Defined</i>
Data Protection and Privacy	Level 3: <i>Consistently Implemented</i>	Level 3: <i>Consistently Implemented</i>
Security Training	Level 5: <i>Optimized</i>	Level 2: <i>Defined</i>
Information Security Continuous Monitoring	Level 3: <i>Consistently Implemented</i>	Level 3: <i>Consistently Implemented</i>
Incident Response	Level 4: <i>Managed and Measurable</i>	Level 4: <i>Managed and Measurable</i>
Contingency Planning	Level 4: <i>Managed and Measurable</i>	Level 4: <i>Managed and Measurable</i>

Source: OIG-generated based on Exhibit 1 from Report No. 570.

Report No. 570 included eight new recommendations to strengthen the SEC's information security program, and highlighted opportunities to improve in all nine FY 2021 Inspector General FISMA reporting metric areas. To date, the SEC has taken corrective action sufficient to close three of these eight recommendations. However, five recommendations from prior year FISMA reports remain open (two from

<sup>43</sup> FY 2021 Inspector General Federal Information Security Modernization Act of 2014 (FISMA) Reporting Metrics, Version 1.1; May 12, 2021.

FY 2017,<sup>44</sup> one from FY 2018,<sup>45</sup> and two from FY 2020<sup>46</sup>). We commend agency management for the actions taken to date, and encourage management to promptly act on all opportunities for improvement identified in previous FISMA reports to help minimize the risk of unauthorized disclosure, modification, use, and disruption of the SEC's sensitive, non-public information, and to assist the agency's information security program reach the next maturity level.

Finally, we continue to track the agency's progress related to an audit of the SEC's enterprise architecture (*Additional Steps Are Needed For the SEC To Implement a Well-Defined Enterprise Architecture*; Report No. 568, issued September 29, 2021). In our report, we highlighted six recommendations to improve the SEC's implementation of a well-defined enterprise architecture (four of which remain open), and one recommendation to improve the SEC's oversight of enterprise architecture support services contracts (which is closed). We understand that the agency has efforts underway to develop an enterprise roadmap for future years, and the remaining four recommendations will be closed upon completion and verification of corrective action taken.

Fully implementing recommended corrective actions from these audits and evaluations may assist the SEC as it seeks to mature aspects of its information security program, generally, and its IT program and program management, specifically.

***Ongoing and Anticipated OIG Work.*** In FY 2023, we will continue to assess the SEC's efforts to secure its systems and data and mature its information security program. Specifically, we will continue to assess the reported user access control deficiency matter, follow-up on open recommendations, complete the ongoing FY 2022 FISMA evaluation, and initiate the FY 2023 FISMA evaluation. We will also review the SEC's efforts to establish a secure environment and applications to use CAT data, determine whether the SEC implemented adequate security controls to safeguard information and IT resources during maximum telework, and assess steps the SEC has planned or taken to address "zero trust" requirements.

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<sup>44</sup> U.S. Securities and Exchange Commission, Office of Inspector General, *Audit of the SEC's Compliance With the Federal Information Security Modernization Act for Fiscal Year 2017* (Report No. 546; March 30, 2018).

<sup>45</sup> U.S. Securities and Exchange Commission, Office of Inspector General, *Fiscal Year 2018 Independent Evaluation of SEC's Implementation of the Federal Information Security Modernization Act of 2014* (Report No. 552; December 17, 2018).

<sup>46</sup> U.S. Securities and Exchange Commission, Office of Inspector General, *Fiscal Year 2020 Independent Evaluation of SEC's Implementation of the Federal Information Security Modernization Act of 2014* (Report No. 563; December 21, 2020).

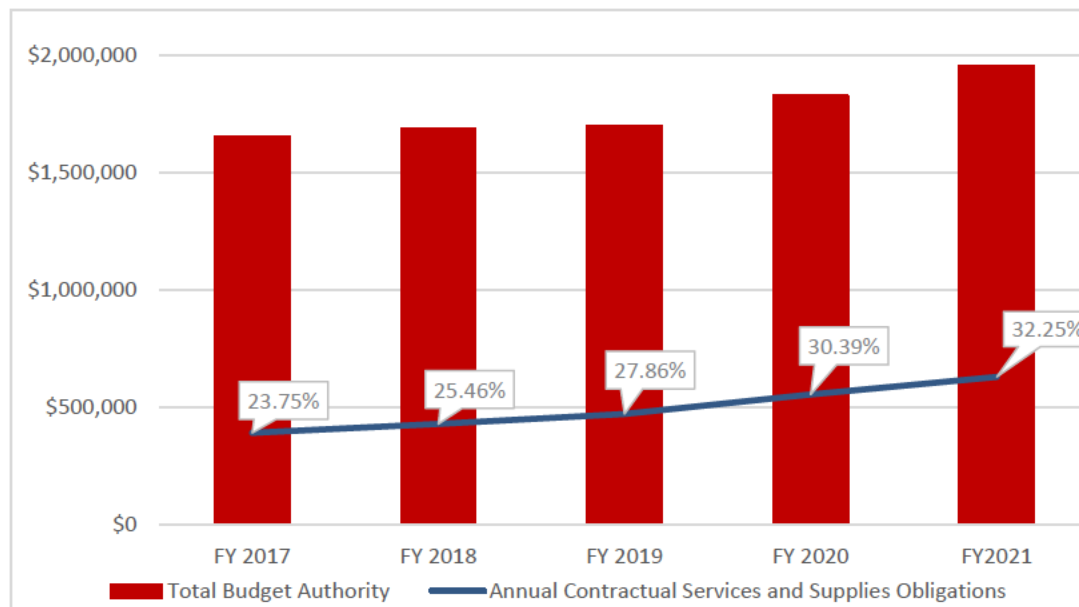
## CHALLENGE: Improving Contract Management

### Synopsis and Trends in SEC Contracting

The SEC substantially relies on contractor support to accomplish its mission. Contractor support is obtained through a variety of methods, including enterprise-wide contracts, U.S. General Services Administration multiple award schedule contracts, government-wide acquisition contracts, and multi-agency contracts. As markets are ever evolving and increasing in complexity, the SEC relies on contractors for technical and subject matter expertise including, but not limited to, professional legal and investigation-related services; support in areas of accounting, analytics, and examinations; and human resources support services.

To fund its contract requirements, the SEC's FY 2023 budget request included nearly \$610 million for contractual services and supplies,<sup>47</sup> which represents about 28 percent of the total \$2.149 billion requested for agency operations. As we reported in last year's statement on the SEC's management and performance challenges, annual obligations for contractual services and supplies, when expressed as a percentage of the SEC's total annual budget authority, has been increasing. This trend continued in FY 2021, with annual obligations for contractual services and supplies equaling about 32 percent of the SEC's total annual budget authority. (See Figure 4.)

**FIGURE 4. SEC Annual Contractual Services and Supplies Obligations, in Thousands, as a Percentage of Total Annual Budgetary Authority (FY 2017 – FY 2021)**



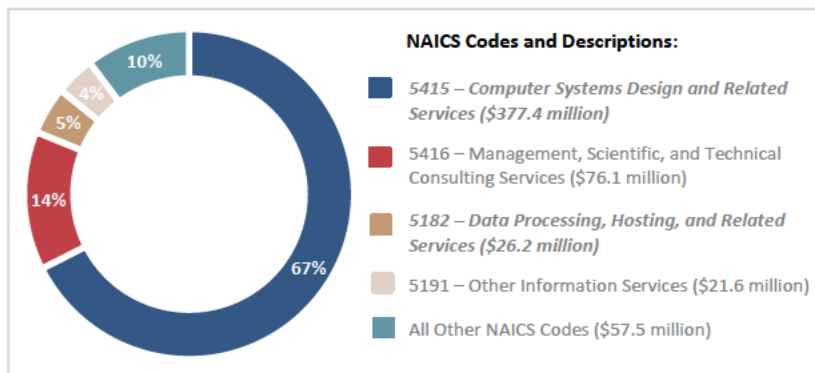
Source: OIG-generated based on annual actual obligations by object class as reported in the SEC's Congressional Budget Justifications for FY 2019 through FY 2023.

<sup>47</sup> According to OMB Circular No. A-11, *Preparation, Submission, and Execution of the Budget* (August 2022), the contractual services and supplies object class covers purchases in object classes 21.0 through 26.0 (Travel and transportation of persons; Transportation of things; Rent, Communications, and Utilities; Printing and reproduction; Other contractual services; and Supplies and materials).



As contract obligations are approaching nearly a third of the agency's annual budget authority, it is essential that the SEC's acquisition workforce effectively manage these resources. Government contracts continue to be an attractive target for fraudsters. In 2021, GAO issued two reports related to contract fraud schemes within the government, focusing on programs within the Department of Defense and the Department of Energy.<sup>48</sup> The SEC is not invulnerable to such schemes and must remain vigilant, closely monitoring areas of risk. For example, GAO identified fraudulent billing schemes as a risk to the procurement process, and the SEC OIG has participated in cross-agency investigative efforts to fight fraudsters who impersonate government officials and submit false purchase orders associated with real government contracts, the terms of which are publicly available.

**FIGURE 5. Top NAICS Codes Associated With the SEC's FY 2022 Contract Obligations**



Source: OIG-generated from data retrieved from [SAM.gov](https://sam.gov) on October 6, 2022.

Although the SEC procures a wide range of services and supplies, the majority of the agency's contract support by dollars obligated is for IT services. These services include, among others, application management, business solutions delivery, IT infrastructure and support services, information security, IT governance and program strategy, data management, and software

services. We reviewed the top North American Industry Classification System (NAICS) codes<sup>49</sup> associated with SEC contracts in FY 2022, as reported through the System for Award Management ([SAM.gov](https://sam.gov)),<sup>50</sup> and noted that, of the nearly \$560 million obligated to contract actions that year and included in the system, the SEC obligated about 72 percent (or about \$404 million) to vendors doing business under just two IT service-related NAICS codes: one for computer systems design and related services, and another for data processing, hosting, and related services. (See Figure 5.) This represents a slight increase over FY 2021 and a more significant increase over FY 2020 (when obligations under the same two NAICS codes totaled about \$401 million and \$351 million, respectively).<sup>51</sup>

<sup>48</sup> U.S. Government Accountability Office, *DOD FRAUD RISK MANAGEMENT Actions Needed to Enhance Department-Wide Approach, Focusing on Procurement Fraud Risks* (GAO-21-309, August 2021); and *DEPARTMENT OF ENERGY CONTRACTING Improvements Needed to Ensure DOE Assesses Its Full Range of Contracting Fraud Risks* (GAO-21-44, January 2021).

<sup>49</sup> NAICS is a comprehensive industry classification system that covers all economic activities and groups establishments into industries based on the similarity of their production processes. Among other things, U.S. statistical agencies use NAICS to provide uniformity and comparability in the presentation of statistical data describing the U.S. economy. Federal Acquisition Regulation 19.102(b) requires contracting officers to assign one NAICS code to all government solicitations, contracts, and task and delivery orders based on the product or service being acquired and its principal purpose. In this document, "top NAICS codes" refers to those codes that represent the largest amounts in terms of total annual amounts obligated.

<sup>50</sup> SAM is a U.S. General Services Administration Federal Government computer system that, among other things, allows users to create and run reports of detailed information on contract actions that are required to be reported by federal agencies. These are actions with an estimated value of \$10,000 or more.

<sup>51</sup> Based on data retrieved from [SAM.gov](https://sam.gov) on October 6, 2022.

A growing majority of contract support concentrated in IT services—and, therefore, in those segments of the agency's acquisition workforce that procure, administer, and oversee contracts for such services—potentially increases the risk to the SEC. Indeed, since 2015, GAO has reported that management of IT acquisitions and operations is a high risk area needing attention by the executive branch and Congress, stating, “federal IT investments too frequently fail or incur cost overruns and schedule slippages while contributing little to mission-related outcomes. These investments often suffer from a lack of disciplined and effective management, such as project planning, requirements definition, and program oversight and governance.”<sup>52</sup> We have previously reported on needed improvements in the SEC's management of IT

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*Management of IT acquisitions and operations is a high risk area across the executive branch*

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investments.<sup>53</sup> And while last July the SEC completed efforts sufficient to close our remaining recommendations for corrective action stemming from that report, the agency has also increased its investments (and, therefore, its potential risk) related to IT service contracts.

Notably, the SEC procures many of its IT services through its OneIT enterprise contract vehicle, which has a 10-year ordering period and a contract ceiling of \$2.5 billion. In September 2018, the SEC began awarding time-and-material (T&M), labor-hour (LH), and firm-fixed price task orders under the OneIT contract vehicle, which included separate pools for small businesses only (restricted) and all awardees, including large businesses (unrestricted). As of June 2022, the agency had awarded task orders to 27 companies, including 5 large businesses and 22 small businesses, obligating a total of almost \$450 million for task orders under this vehicle. The SEC's Office of Minority and Women Inclusion (OMWI) collaborated with key stakeholders to advertise to vendors opportunities and specifics of the OneIT program. This advertising included a publically available brochure targeted to minority-owned and women-owned businesses. OMWI received positive feedback and is looking to expand the concept to other large SEC contracts being awarded. As such, the SEC's Office of Acquisitions (OA) and OMWI are continuing to work collaboratively to increase outreach to minority-owned and women-owned businesses and continue efforts to increase the SEC's vendor diversity.

## Focus on Diversity, Equity, and Inclusion

OA and OMWI are collaborating to voluntarily implement the requirements of Executive Order 13895, which states that the federal government should pursue a comprehensive approach to advancing equity for all, including people of color and others who have been historically underserved, marginalized, and adversely affected by persistent poverty and inequality.<sup>54</sup> This advancing of equality includes promoting equitable delivery of government benefits and equitable opportunities, such as government contracting and procurement opportunities, which should be available on an equal basis to all eligible providers of goods and services.

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<sup>52</sup> U.S. Government Accountability Office, *HIGH-RISK SERIES Dedicated Leadership Needed to Address Limited Progress in Most High-Risk Areas* (GAO-21-119SP, March 2021).

<sup>53</sup> U.S. Securities and Exchange Commission, Office of Inspector General, *The SEC Has Processes To Manage Information Technology Investments But Improvements Are Needed* (Report No. 555; September 19, 2019).

<sup>54</sup> Executive Order 13895, *Advancing Racial Equity and Support for Underserved Communities through the Federal Government*, January 20, 2021. Independent agencies are strongly encouraged to comply with the provisions of this Executive Order.

Additionally, recent OMB guidance implements commitments to increase the share of contracts awarded to small disadvantaged businesses to 15 percent by 2025.<sup>55</sup> To do this, OMB directs federal agencies to take specific management actions, including increasing the number of new entrants to the federal marketplace and reversing the general decline in the small business supplier base.

Diversity, equity, and inclusion is a focus of OA and, in its FY 2023 budget request, OA requested two additional positions to support a number of priorities, including support for workload increases to review and expand diversity, equity, and inclusion efforts in contracting opportunities. Furthermore, OMWI continues to collaborate with OA to promote access to contracting and sub-contracting opportunities for minority-owned and women-owned businesses, through outreach activities. In March 2022, we initiated an audit to (1) assess the SEC's processes for encouraging small business participation in agency contracting, in accordance with federal laws and regulations; and (2) determine whether, in FYs 2020 and 2021, the SEC accurately reported small business awards. The audit is ongoing and will be completed in FY 2023.

## T&M Contracts

Since our 2019 statement on the SEC's management and performance challenges, we have reported that T&M contracts (including LH contracts) lack incentives for contractors to control costs or use labor efficiently and, therefore, are considered higher-risk.<sup>56</sup> Last year, we noted again that the SEC's use of T&M contracts has continued to increase. We encouraged management to assess the SEC's use of these contracts and to formulate actions to reduce their use whenever possible. In response, agency management committed to continuing to closely monitor its use of T&M contracts and "exercise rigorous oversight of these types of contracts."<sup>57</sup> Management further noted that OA has made a number of improvements to better manage T&M contracts, including a new independent government cost estimate guide, contract compliance reviews, information sharing on T&M invoicing, and an automated determination and findings workflow for "more robust and consistent support for the use of T&M" contracts. To date, we have not fully assessed the effectiveness of management's reported additional controls;<sup>58</sup> however, the annual amount obligated to T&M contracts continues to raise concerns about risk to the SEC. As Figure 6 shows, according to data from [usaspending.gov](https://usaspending.gov), the total amount obligated to T&M contracts increased since FY 2018 from about 40 percent to about 53 percent of all SEC contract obligations (which are declining).<sup>59</sup> In addition, as of October 7, 2022, 476 of the SEC's 1,055 total active contracts (or about 45 percent) were T&M contracts.

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<sup>55</sup> Office of Management and Budget, Memorandum M-22-03, *Advancing Equity in Federal Procurement*, December 2, 2021.

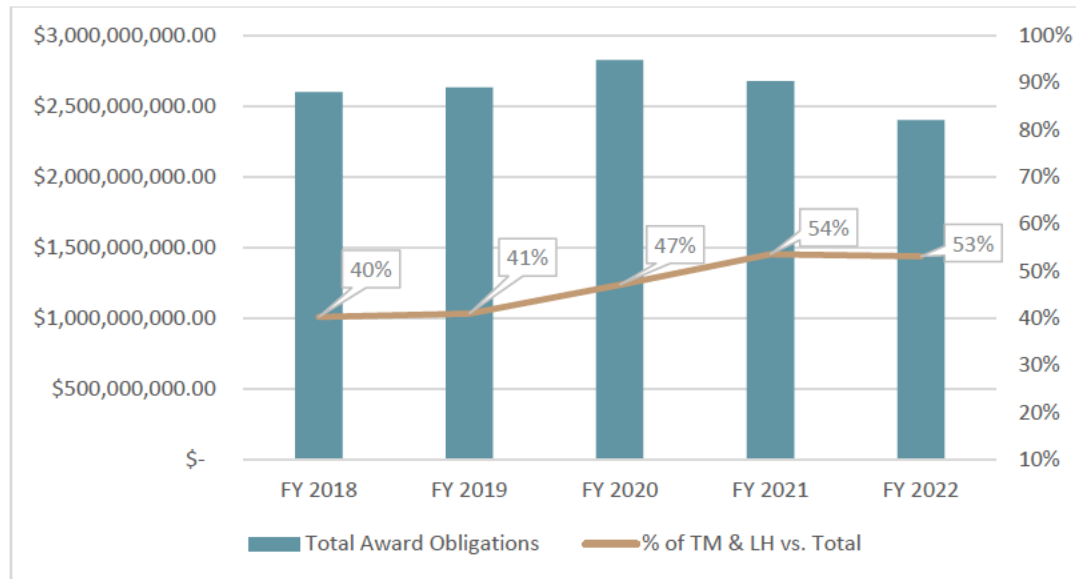
<sup>56</sup> As stated in Federal Acquisition Regulation 16.602, *Labor-hour contracts*, LH contracts are a variation of T&M contracts and differ only in that materials are not supplied by the contractor.

<sup>57</sup> U.S. Securities and Exchange Commission, *Fiscal Year 2021 Agency Financial Report*, November 15, 2021.

<sup>58</sup> We plan to initiate an audit of this issue in FY 2023.

<sup>59</sup> According to [usaspending.gov](https://usaspending.gov), total (that is, cumulative) award obligations for all active SEC contracts as of October 7, 2022, was about \$2.40 billion, of which total award obligations for T&M contracts was about \$1.28 billion.

**FIGURE 6. Percentage of SEC T&M Award Obligations Compared to Total SEC Award Obligations (FY 2018 – FY 2022)**



Source: OIG-generated based on data retrieved from [usaspending.gov](https://usaspending.gov) on October 7, 2022.

As we have reported in prior years' statements on the SEC's management and performance challenges, Federal Acquisition Regulation Subpart 16.6, *Time-and-Materials, Labor-Hour, and Letter Contracts*, states, a T&M contract:

- “. . . provides no positive profit incentive to the contractor for cost control or labor efficiency.”
- “. . . may be used only when it is not possible at the time of placing the contract to estimate accurately the extent or duration of the work or to anticipate costs with any reasonable degree of confidence.”

Furthermore, in June 2022, GAO reported that T&M and LH contracts are considered riskier than fixed price contracts because contractors bill the government by the hour and could conceivably work less efficiently so that they could charge more hours. As a result, GAO recommended that selected agencies assess steps they can take to use lower-risk contract types, and highlighted potential opportunities for agencies to assess ongoing use of T&M contracts in their acquisition portfolios.<sup>60</sup> Moreover, the Federal Acquisition Regulation encourages contracting officers to assess contract types periodically, after experience obtained during the performance of a T&M contract provides a basis for firmer pricing. A January 2021 OMB memorandum also discourages agency reliance on high-risk contracts, such as T&M contracts, stating that, “By managing contract types effectively, agencies have better leverage to ensure timely, efficient, and cost-effective completion of contractor work supporting critical and high priority goals.”<sup>61</sup>

<sup>60</sup> U.S. Government Accountability Office, *Opportunities Exist to Reduce Use of Time-and-Materials Contracts* (GAO-22-104806, June 2022). GAO included in its review four Department of Defense agencies and field activities (the Air Force, Army, Defense Finance and Accounting Service, and Washington Headquarters Services), and three civilian agencies (the Social Security Administration, the Department of Homeland Security, and the Department of State).

<sup>61</sup> Office of Management and Budget, Memorandum M-21-11, *Increasing Attention to Federal Contract Type Decisions* (January 5, 2021).

***Ongoing and Anticipated OIG Work.*** In FY 2023, we will continue to assess the SEC's contract management and acquisition processes through audits and evaluations and the work of our Acquisitions Working Group. We will complete an ongoing audit of the SEC's small business contracting program. In addition, we will assess the SEC's use of T&M contracts to help ensure such contracts are used only when appropriate and effective controls are in place to minimize the risk to the government. Lastly, we will report on any acquisition-related matters identified as a result of other ongoing and planned reviews of SEC programs and operations, and continue to support the SEC's efforts to train contracting officers and contracting officer's representatives about the potential for procurement-related fraud.



## CHALLENGE: Ensuring Effective Human Capital Management

Although each component within the SEC is critical to achieving effective human capital management, the Office of Human Resources (OHR) is ultimately responsible for the strategic management of the SEC's human capital. OHR consults with management, establishes and administers human capital programs and policies, and ensures compliance with federal laws and regulations and negotiated agreements. It is critical that OHR develops and maintains the knowledge, skillsets, and expertise to guide the SEC through the challenges that inevitability arise in the management of a large professional workforce.

Indeed, retention, attrition, recruitment, and hiring of skilled personnel have all emerged as challenges within the SEC, along with the challenges associated with managing the agency's workforce throughout the COVID-19 pandemic.

### Retention, Attrition, Recruitment, and Hiring

The SEC recognizes the importance of an effective, highly-skilled, and diverse workforce. As such, in its strategic plan, the SEC states that it "will focus on recruiting, retaining, and training staff with the right mix of skills and expertise."<sup>62</sup> Moreover, Goal 1 of OHR's Human Capital Strategic Plan is to "Attract Diverse and Highly Talented People to the Agency."<sup>63</sup>

OMWI also plays an important part in the agency's recruitment and retention efforts by providing leadership and guidance in ensuring diversity and inclusion with respect to the SEC workforce. In its Diversity and Inclusion Strategic Plan, the SEC highlights the importance of diversity, equity, and inclusion in the workplace, stating, "we recognize that our people are our most important asset. We also recognize that diversity, inclusion, and opportunity are essential to the agency's ability to effectively carry out its mission. These fundamental and value-enhancing tenets of our mission-oriented culture dictate that we continuously work to attract, hire, develop, and retain high-quality, diverse talent."<sup>64</sup>

### Retention and Attrition

Despite OHR's and OMWI's efforts and the SEC being recognized as one of the best places to work in the federal government,<sup>65</sup> the SEC seems to be facing challenges to its retention efforts. As the figures below demonstrate, the SEC has seen a significant increase in attrition over the last few years, from 3.8 percent in FY 2020 to an estimated 6.4 percent in FY 2022 (as of September 20, 2022)—the highest attrition rate in 10 years. Most concerning is the increased attrition in Senior Officer and attorney positions, expected to be about 20.8 percent and about 8.4 percent for FY 2022, respectively.



*Effective management of an entity's workforce, its human capital, is essential to achieving results and an important part of internal control.*

Source: U.S. Government Accountability Office, *Standards for Internal Control in the Federal Government* (GAO-14-704G, September 2014), Principle 10 - Design Control Activities, section 10.03.

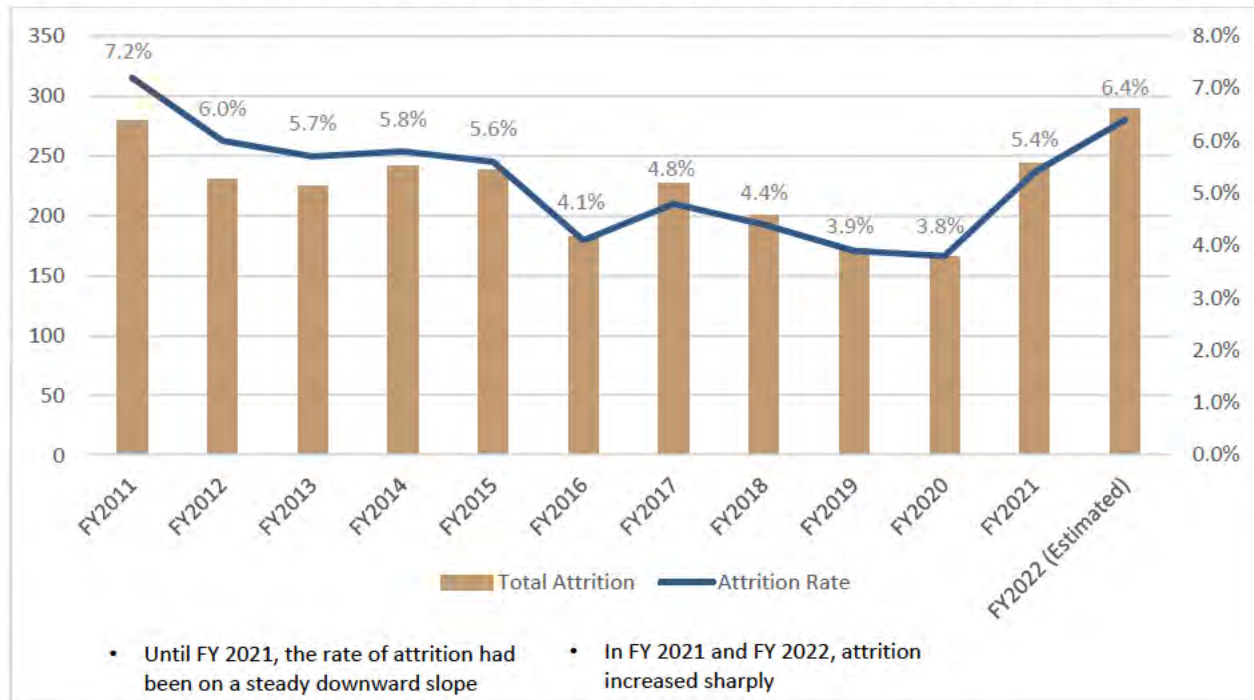
<sup>62</sup> U.S. Securities and Exchange Commission, *Strategic Plan Fiscal Years 2018-2022*, Strategic Initiative 3.1; October 11, 2018. The agency's draft strategic plan for FY 2022 to FY 2026 (Goal 3) similarly emphasizes the importance of attracting, hiring, developing, and retaining high-quality, diverse talent.

<sup>63</sup> U.S. Securities and Exchange Commission, Office of Human Resources, *FY 2020-2022 Human Capital Strategic Plan*; March 2020.

<sup>64</sup> U.S. Securities and Exchange Commission, *Diversity and Inclusion Strategic Plan*, Fiscal Years 2020-2022, Introduction.

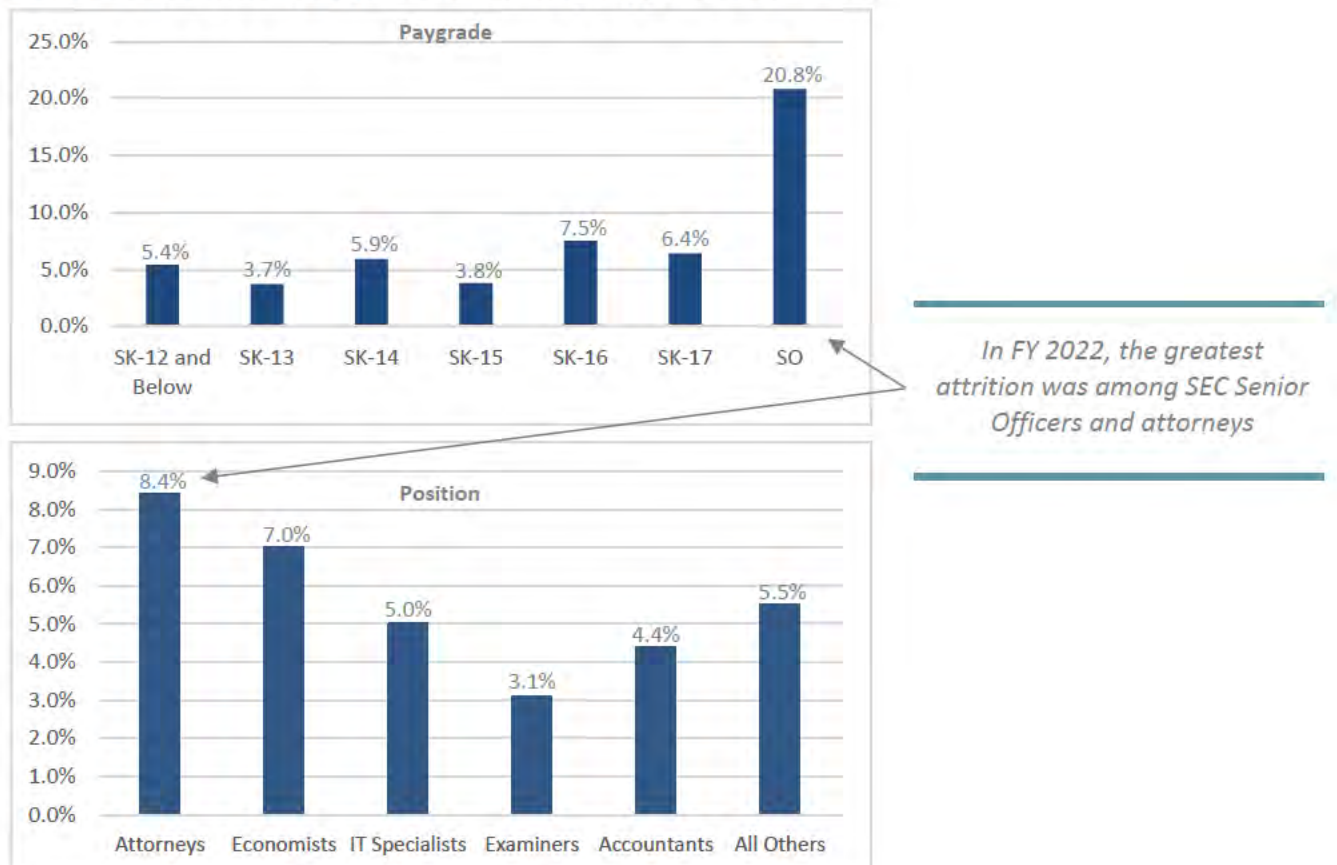
<sup>65</sup> Partnership for Public Service, *2021 Best Places to Work in the Federal Government Rankings*.

**FIGURE 7. Total SEC Attrition (in Number of Positions) and Attrition Rate (FY 2011 – FY 2022)**



Source: OIG-generated based on data provided by OHR.

**FIGURE 8. SEC FY 2022 Expected Attrition by Paygrade and Position**



Source: OIG-generated based on data provided by OHR.



The SEC is not alone in facing a crisis to retain mission-critical talent during what has been dubbed “The Great Resignation.” Critical elements of the federal workforce are in a state of stress. For example, according to the Partnership for Public Service, FY 2021 government-wide attrition rates averaged 6.1 percent, with certain groups experiencing even higher rates, such as women (6.4 percent) and executives (9.2 percent).<sup>66</sup>

The SEC may be able to address some of the concerns surrounding attrition by ensuring that it provides for succession planning through robust employee development and performance management. For example, in August 2022, the SEC launched a new program called LEAD (Leadership, Evaluation, Accession, and Development) to help SEC employees develop the leadership skills necessary to apply for future Senior Officer opportunities. However, performance management remains an area of opportunity for growth. For example, the SEC has discontinued the Performance Incentive Bonus program it implemented just 1 year ago. In addition, one recommendation from our 2018 report entitled, *The SEC Made Progress But Work Remains To Address Human Capital Management Challenges and Align With the Human Capital Framework*, remains open.<sup>67</sup> This recommendation—for the SEC to finalize standard operating procedures for the agency’s performance management program—is an important component of the SEC’s effort to ensure effective performance management. Agency management has reported that remediation work is underway, yet limited resources and competing priorities have created delays. In FY 2023, GAO is set to issue its triennial report on personnel management within the SEC,<sup>68</sup> which should provide further guidance to the SEC in this area.

### **Recruitment and Hiring**

Recruitment is a major area of interest to both OHR and OMWI. Recruitment efforts are critical to ensuring a skilled and diverse candidate pool from which to fill SEC vacancies. In its FY 2023 Congressional Budget Justification, the SEC requested a total of 5,261 positions, an increase of 454 positions from FY 2022, in which the SEC was authorized 4,807 positions. With FY 2022 attrition rates estimated to be at 6.4 percent—or about 289 positions—efforts to recruit and hire an additional 454 new positions in FY 2023 could present challenges for OHR, OMWI, and SEC management. Moreover, the federal government is facing stiff competition from the private sector as increased wages and workforce engagement make private sector positions attractive to both new and seasoned professionals. The federal government hiring process also has been cited as a detriment when attracting talent to the federal government. For example, the federal government takes on average 98 days—more than twice as long as the private sector—to hire a new employee.<sup>69</sup> During our recent audit of the SEC’s hiring process, discussed in more detail below, we found that of the 438 external hiring actions that we included in our analysis, nearly 50 percent took 100 business days or more to complete.<sup>70</sup>

<sup>66</sup> Partnership for Public Service. “[Who Is Quitting and Retiring: Important Fiscal 2021 Trends in the Federal Government.](#)”

<sup>67</sup> U.S. Securities and Exchange Commission, Office of Inspector General, *The SEC Made Progress But Work Remains To Address Human Capital Management Challenges and Align With the Human Capital Framework* (Report No. 549; September 11, 2018).

<sup>68</sup> Section 962 of Dodd-Frank includes a provision for GAO to report triennially on the SEC’s personnel management, including the competence of professional staff; the effectiveness of supervisors; and issues related to employee performance assessments, promotion, and intra-agency communication. See Pub. L. No. 111-203, 124 Stat. 1376, 1908-1909 (2010) (codified at 15 U.S.C. § 78d-7).

<sup>69</sup> Partnership for Public Service. “[Roadmap for Renewing Our Federal Government.](#)”

<sup>70</sup> U.S. Securities and Exchange Commission, Office of Inspector General, *The SEC Can Improve in Several Areas Related to Hiring* (Report No. 572; February 28, 2022).

To address some of these recruitment concerns, OHR recently issued its FY 2022-2024 Recruitment and Outreach Strategic Plan, which identifies strategies to attract diverse talent and to aid in filling mission critical occupations that have been deemed hard-to-fill. Such strategies include creating branding and marketing that speaks to prospective applicants; developing and implementing a multi-media recruitment and agency branding campaign that highlights the successes of current SEC employees; developing a comprehensive internal communications strategy; and creating an overarching recruitment, outreach, and engagement tool to enhance the recruitment process.

Given the importance of an effective process when recruiting and hiring new employees, and the likelihood that the SEC will be heading into an intensive hiring effort, the OIG recently reviewed the SEC's hiring process and identified areas for improvement. The OIG's audit report, *The SEC Can Improve in Several Areas Related to Hiring*, addressed a number of critical areas related to the SEC's hiring process.<sup>71</sup> First, we determined that management can improve its controls to ensure Workforce Transformation and Tracking System (WTTS) data fields are accurate, consistent, and complete. We found that:

- 83 of the 91 hiring actions sampled (or about 91 percent) had at least one data entry issue in the WTTS data fields we reviewed, and almost 9 percent of the WTTS data entries we reviewed were either inaccurate, inconsistent, or incomplete;
- the SEC's WTTS data continued to include unannotated anomalies; and
- certain hiring actions were not consistently identified in WTTS.

These conditions occurred because (1) OHR's WTTS job aid did not include sufficient instructions regarding the dates and information expected in key WTTS data fields, and (2) some data fields were not included on the WTTS reports used by OHR staff to ensure the SEC's hiring action data was accurate, complete, and consistently recorded. As a result, OHR can further improve the reliability of the SEC's WTTS data to assist in workforce management and internal and external reporting of agency hiring information.

In addition, our assessment of OHR's quarterly Service Level Commitment (SLC) reviews found that (1) OHR did not perform SLC reviews in a consistent manner, (2) the review process was inefficient and prone to inaccuracies, and (3) SLC reviews did not align with the SLC presented to and agreed upon by the other SEC divisions and offices. This occurred because OHR did not establish clear guidance, including in the SLC itself, for the variety of hiring types and scenarios that can occur, or how to measure each one. The organization also did not ensure it could measure the SLC steps, as presented, in WTTS and did not effectively use the WTTS reporting capabilities in its SLC reviews. As a result, OHR limited its ability to rely on the SLC and SLC reviews as key controls for efficiently and effectively identifying areas of needed improvement in the SEC's hiring process, and for collaborating with the divisions and offices OHR serves.

Furthermore, we found that the SEC's pay-setting guidance needed improvement and OHR could clarify the new hire pay-setting information shared both internally and externally. Specifically, (1) the pay-setting

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<sup>71</sup> Id.

information available to SEC employees and hiring officials was not comprehensive, (2) the internally published pay matrices were outdated, and (3) publicly advertised SEC salary information was misleading for new hires. We also identified inaccuracies in some of the underlying pay band information included in the 2021 pay matrices, and other pay-setting concerns. Incomplete, outdated, and misleading new hire pay-setting guidance and information have caused confusion and may have limited hiring officials' ability to review and respond to pay-setting requests. Although it does not appear that inaccurate information in the 2021 pay matrices impacted any newly hired SEC employee's pay, it could have had certain hiring scenarios occurred. We also concluded that OHR generally complied with the key hiring authority requirements tested; however, staffing case files for 18 of 32 attorney hiring actions we reviewed (about 56 percent) lacked supporting documentation, including proof of law degrees and/or bar membership. This occurred because OHR did not clarify review processes and documentation requirements for attorney qualifications. In addition, OHR's internal reviews of staffing case files needed improvement. As a result, the SEC risked hiring attorneys who did not meet all qualifications required for their position.

Lastly, we identified a matter that did not warrant recommendations related to (1) the SEC's SLC as compared to the Office of Personnel Management's end-to-end hiring process model timelines, and (2) feedback from the SEC divisions and offices OHR serves. We discussed this matter with agency management for their consideration.

We made 11 recommendations to further strengthen the SEC's controls over hiring actions, including recommendations to improve (1) the reliability of WTTS data, (2) assessments of the agency's hiring timelines, (3) the agency's compensation program, and (4) staffing case file documentation requirements. Management concurred with all 11 of our recommendations and, as of the date of this document, had taken action sufficient to close 5 of them. The remaining recommendations are open and will be closed by the OIG upon completion and verification of corrective action.

## **Responding to COVID-19: Workforce Perspectives**

Responding to the COVID-19 pandemic has been a central concern of the SEC, and the federal government as a whole, throughout FY 2022. Since the outset of the national public health crisis and economic threats caused by COVID-19, the SEC's operational efforts have centered, first and foremost, on the health and safety of its employees, the employees and customers of its registrants, and individuals generally. From March 2020 through August 8, 2021, the SEC was in a mandatory telework posture, which aligned with other federal government agencies. Indeed, the federal government workforce quickly increased from 3 percent of employees teleworking every day to nearly 60 percent, as the 2020 Office of Personnel Management Federal Employee Viewpoint Survey shows.<sup>72</sup> However, as vaccines became more widely available, the SEC shifted its focus to how to best and most safely allow employees to return to the workplace.

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<sup>72</sup> Office of Personnel Management, *Government-wide Management Report: Results from the 2020 OPM Federal Employee Viewpoint Survey*, April 26, 2021.

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*Safety remains a top priority when planning for employee return to the workplace*

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On August 9, 2021, the agency began to allow vaccinated employees to voluntarily return to the workplace. In calendar year 2022, peak occupancy across all SEC building locations has averaged around 7 percent. The SEC has not yet mandated that its employees return to the office in pre-COVID-

19 levels. On July 25, 2022, the agency announced that, because of the recent uptick in COVID-19 community levels, the planned return-to-office date was shifted from September 6, 2022, to January 9, 2023. Occurring alongside the agency's monitoring of community levels, the SEC is also negotiating a new collective bargaining agreement with the National Treasury Employees Union, which will include updated provisions related to telework and remote work. The parties are also engaged in bargaining related to the mandatory return-to-office plan. While these negotiations are ongoing, both the National Treasury Employees Union and SEC leadership make regular announcements to staff and management, respectively, about their progress. At this point, further negotiations require assistance from the Federal Mediation and Conciliation Service as the parties endeavor to avoid invoking the Federal Services Impasse Panel for a final decision on the terms of the new collective bargaining agreement and return-to-office plan. The uncertainty surrounding the plans for return-to-office and the potential for expanded telework and/or workplace flexibilities makes it more difficult to plan for future human capital management solutions.

***Ongoing and Anticipated OIG Work.*** In FY 2023, we plan to evaluate the agency's workplace safety protocols developed in response to the COVID-19 pandemic, including the COVID-19 workplace safety plan and related measures, such as those established pursuant to OMB Memorandum M-21-15, Executive Order 13991, and other applicable guidance. We also will complete a review of the agency's upward mobility program. Furthermore, we will monitor the SEC's progress in addressing prior open audit recommendations related to human capital management. To assess the SEC's efforts to promote diversity, equity, inclusion, accessibility, and opportunity, we will complete an ongoing audit of the agency's small business contracting. We will also assess the operations and controls over the agency's equal employment opportunity program.



## OIG General Office Contact Information

### EMPLOYEE SUGGESTION PROGRAM

The OIG SEC Employee Suggestion Program, established under the Dodd-Frank Wall Street Reform and Consumer Protection Act, welcomes suggestions by all SEC employees for improvements in the SEC's work efficiency, effectiveness, productivity, and use of resources. The OIG evaluates all suggestions received and forwards them to agency management for implementation, as appropriate. SEC employees may submit suggestions by calling (202) 551-6062 or sending an e-mail to [OIGESProgram@sec.gov](mailto:OIGESProgram@sec.gov).

### COMMENTS AND IDEAS

The SEC OIG also seeks ideas for possible future audits, evaluations, or reviews. We will focus on high-risk programs, operations, and areas where substantial economies and efficiencies can be achieved. Please send your input to [AUDPlanning@sec.gov](mailto:AUDPlanning@sec.gov).

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## **Individual Comment of April 1, 2022**



April 1, 2022

Ms. Vanessa Countryman  
Secretary  
U.S. Securities and Exchange Commission  
100 F Street NE  
Washington, DC 20549

**Re: Share Repurchase Disclosure Modernization (Release Nos. 34-93783, IC-34440; File No. S7-21-21)**

Dear Ms. Countryman:

The U.S. Chamber of Commerce’s (“the Chamber”) Center for Capital Markets Competitiveness (“CCMC”) writes regarding the Securities and Exchange Commission’s (“SEC”) February 15, 2022, proposed rule regarding disclosures about repurchases of an issuer’s equity securities that are registered under Section 12 of the Securities Exchange Act of 1934 (“Proposed Rule” or “Proposal”).<sup>1</sup> The Chamber appreciates the opportunity to comment on this consequential proposal.

The Chamber supports efforts by Congress and the SEC to ensure that America’s capital markets maintain their status as the most competitive, transparent, and liquid in the world, which includes holding those who choose to engage in illegal behavior accountable. While the Chamber supports efforts to ensure that corporate insiders cannot game the system or bend the rules in their own favor, we are concerned that the approach the SEC has proposed toward these ends rests on inconclusive evidence, creates unnecessary burdens, is ultimately impractical, and imposes costs on and risks to the economy that the SEC has not adequately considered.

The Chamber is also concerned that the SEC is increasingly allowing insufficient time for the public to comment on significant and substantive changes in regulation. The SEC provided a 45-day comment period on this updated – and increasingly burdensome – framework for share repurchase disclosures. That length of time is not conducive for developing meaningful analysis to be able to provide meaningful feedback. As we wrote in an unheeded request for extension of the comment period,<sup>2</sup> this truncated timeline does not allow for the collection and development of the kind

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<sup>1</sup> Share Repurchase Disclosure Modernization, 87 Fed. Reg. 8443 (Feb. 15, 2022) (hereinafter, “Proposed Rule”).

<sup>2</sup> Available at <https://www.sec.gov/comments/s7-21-21/s72121-20117648-270467.pdf>



of empirical data and analysis that the SEC is requesting, which is essential to the SEC performing an adequate cost-benefit analysis as required by law. In addition, given the Commission's robust and fast-moving agenda, we are becoming increasingly concerned about the extensive compliance changes that our member firms will have to make concurrently to implement the universe of new rules that are part of the Commission's agenda. It is critical that the SEC consider in any rulemaking the impacts of new rules and other proposed rules under consideration. Specific to this Proposal, it is imperative that the SEC consider the implications or interrelatedness of its recently-proposed Rule 10b5-1 and Insider Trading release.<sup>3</sup>

As the SEC weighs whether and how to move forward with the Proposal, we encourage the Commission to consider the following:

1. The Proposal fails to adequately explain whether and how the new requirements will promote efficiency, competition, and capital formation.
2. The Proposal does not adequately consider the next-day reporting requirement's costs, including additional market volatility, and it does not adequately weigh those costs against the Proposal's purported benefits.
3. The periodic "objective or rationale" disclosure will not promote efficiency, competition, or capital formation.
4. The Proposal's economic baseline analysis does not sufficiently consider that share repurchase programs create substantial benefits for market participants and investors – including retail investors – and should not be unduly deterred.
5. The Commission should quantify the Proposal's costs, and if it relies on commenters' submissions for that quantification, it must give adequate time for further comment.

The CCMC stands ready to provide additional feedback and analysis on these concerns on behalf of its members.

### ANALYSIS

The Commission, in exercising its rulemaking authority, has the statutory obligation to "consider, in addition to the protection of investors, whether the action will promote efficiency, competition, and capital formation." 15 U.S.C. § 78c(f); *id.* §§ 78w(a)(2), 80a-2(c). The Commission also must "*apprise itself*—and hence the public and the Congress—of the economic consequences of a proposed regulation before it decides whether to adopt the measure." *Chamber of Com. of U.S. v. SEC*, 412 F.3d 133, 144

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<sup>3</sup> Release Nos. 33-11013, 34-93782; File No. S7-20-21

(D.C. Cir. 2005) (emphasis added). Failure to do so “makes promulgation of the rule arbitrary and capricious and not in accordance with law.” *Bus. Roundtable v. SEC*, 647 F.3d 1144, 1148 (D.C. Cir. 2011); *see also Am. Equity Inv. Life Ins. Co. v. SEC*, 613 F.3d 166, 177 (D.C. Cir. 2010).

**1. The Proposal fails to identify a market failure that justifies the increased need for regulation as conceived.**

Under current rules, issuers are required to periodically disclose aggregated information about share purchases on a quarterly basis in Form 10-Q and annually in Form 10-K. This information includes the monthly number of shares purchased, the average price paid per share, the total number of shares purchased as part of a publicly announced share repurchase plan, the number of shares that may still be purchased under repurchase plans, and several related footnote disclosures describing, for example, the principal terms of publicly announced share repurchase programs. Current rules also require footnote disclosure of the principal terms of all publicly announced repurchase plans or programs, the number of shares purchased other than through a publicly announced plan or program, and the nature of the transaction.

The Commission’s Proposal as conceived would principally require next day reporting of the number and average price of share repurchased on new Form SR. Additional requirements include a description of the repurchase program’s rationale, the criteria used to determine how many shares it purchased, policies related to the trading activities of corporate insiders, and whether insiders traded in the ten-day period preceding the repurchase of shares. As an addendum to the Chamber’s Fall 2021<sup>4</sup> white paper finds, the Commission’s rationale for these additions makes several observations about the benefits associated with the proposed amendments, but does not explicitly articulate whether these new requirements will promote efficiency, competition, and capital formation. The Commission’s economic analysis cites two economic considerations as justifications for the rule: (1) asymmetric information between insiders and external stakeholders; and (2) the opportunistic use of share repurchases by management. An independent analysis of these economic

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<sup>4</sup> See Lewis, C., White, J. Corporate Liquidity Provision and Share Repurchase Programs. October 2021. Attached. Also available at [https://www.centerforcapitalmarkets.com/wp-content/uploads/2021/09/CCMC\\_Stock-Buybacks\\_WhitePaper\\_10.2.21.pdf](https://www.centerforcapitalmarkets.com/wp-content/uploads/2021/09/CCMC_Stock-Buybacks_WhitePaper_10.2.21.pdf)

considerations commissioned by the Chamber<sup>5</sup> finds these justifications do not sufficiently support the rule as proposed.

**1.A** The Proposal touts increased transparency but does not explain how increased transparency will promote efficiency, competition, and capital formation.

While some degree of information asymmetry may exist between issuers and investors, the SEC's economic analysis does not demonstrate that more frequent disclosure will have a large enough effect on capital costs or liquidity to outweigh any direct or indirect costs of additional disclosure burdens. Reducing asymmetric information will promote efficiency, competition, and capital formation only if the Commission establishes that insiders act in their own self-interest to produce an outcome that is economically harmful to other stakeholders but fails to do so. To the extent that an asymmetry exists, the Proposal fails to explain how reducing the asymmetry will, in aggregate, promote efficiency, competition, and capital formation.

The Commission points to three studies (Easley and O'Hara, 2004; Botosan, 2006, and Lambert, Luez, and Verrecchia, 2007) related to information asymmetries, but those studies do not address the question of whether the links they find to reductions in asymmetric information are associated with more frequent and timely repurchase disclosure. The SEC could have conducted myriad alternative analyses to address the purported necessity of more frequent disclosure of share repurchase activity that would have shown that the proposed disclosure may not result in better information for market participants.<sup>6</sup>

The Commission's analysis on information asymmetries also fails to consider whether daily disclosure could result in such frequent repurchase filings that it essentially creates "noise" in the disclosure regime. Indeed, prior academic work notes that "too much disclosure can be as costly as too little disclosure."<sup>7</sup>

Furthermore, the Commission's analysis also does not sufficiently explain its apparent reversal of the prior position that the appropriate way to promote efficiency, competition, and capital formation is to "minimize the market impact of the issuer's repurchases, thereby allowing the market to establish a security's price based on

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<sup>5</sup> See Lewis, C., White, J. (March 2022). Addendum to U.S. Chamber of Commerce Fall 2021 white paper on share repurchases. *Attached and available at* [https://www.centerforcapitalmarkets.com/resource/addendum\\_stockbuy-back/](https://www.centerforcapitalmarkets.com/resource/addendum_stockbuy-back/).

<sup>6</sup> *Id.*, p. 2

<sup>7</sup> See Core, J. E. (2001). A review of the empirical disclosure literature: discussion. *Journal of Accounting and Economics*, 31(1-3), 441-456.

independent market forces without undue influence by the issuer.” *Purchases of Certain Equity Securities by the Issuer and Others*, 68 Fed. Reg. 64,952, 64,953 (Nov. 17, 2003). Indeed, the Proposal’s “transparency” rationale appears to directly conflict with the Commission’s prior position that efficiency, competition, and capital formation are best served by “minimizing” the impact of repurchases—not highlighting them in daily disclosures. The Proposal does not adequately explain this reversal in position.

Finally, the Commission’s analysis of market transparency does not sufficiently consider whether “under the existing regime, sufficient protections existed to enable investors to make informed investment decisions and sellers to make suitable recommendations to investors.” *Am. Equity Inv. Life Ins. Co.*, 613 F.3d at 179. The current disclosure regime, including repurchase announcements, already provides significant transparency regarding repurchases. Too much transparency can reach the point of diminishing—or even negative—returns. In analyzing the Proposal’s costs and benefits regarding transparency, then, the Commission must compare the new requirements to the existing regime, not to a regime in which transparency is altogether absent.

**1.B** The Proposal fails to support claims of opportunistic or manipulative use of share repurchases by insiders and does not consider empirical evidence refuting the notion that repurchases necessarily harm investment and employees.

The Proposal aims to reduce opportunistic use of repurchases based on a conjecture that managers might opportunistically use repurchases to manage earnings, inflate the stock price, or hit earnings per share (“EPS”) targets to boost the realized value of their compensation. The Commission relies heavily on a June 2018 speech and empirical research presented by then-Commissioner Robert Jackson Jr. as justification for the Proposal. The Commission’s “heav[y]” reliance on this single “relatively unpersuasive stud[y]” shows that the Proposal is based on “insufficient empirical data,” and therefore unlawful. *Bus. Roundtable*, 647 F.3d at 1151.

During the speech, Commissioner Jackson introduced a new data analysis on how executives potentially use repurchases to “cash out” by selling their shares after the buyback announcement. Commissioner Jackson and his staff analyzed 385 issuers that announced repurchases over 2017 and the first three months of 2018 and interpreted the data as evidence that after a company tells the market that the stock is undervalued, executives overwhelmingly decide to sell. A broader analysis of that data, however, offers a different conclusion: that a slight uptick in insider sales

following a buyback announcement is largely mechanically driven by issuers' blackout periods, where both insider sales and repurchases are prohibited ahead of key information releases.

Here again, an independent analysis shows that the Commission's justification is insufficient. When the dataset presented by Commissioner Jackson is analyzed in full, it suggests that the post-buyback announcement increases cited by Commissioner Jackson's study could actually be driven by large outliers. Commissioner Jackson's conclusion that executives' sales of stock increase fivefold following an announcement might be better explained by a few large insider sales, and the data do not reflect systematic evidence of widespread insider trading around buyback announcements. Indeed, once 11 outliers were removed, an analysis of the remaining 16,264 observations in the dataset show that the Commissioner's conclusion that executives personally capture the benefit of the short-term increase in stock price following a buyback announcement is based on data and analysis that significantly overestimates the extent of insider selling due to the bias created by a small number of outlier observations that represent 0.07% of the Commissioner's data sample and does not represent a fivefold increase in selling as the Commissioner found. Thus, independent analysis of this data posits that the slight uptick in insider sales following a buyback announcement is actually the result of pre-set plans to execute sales after company blackout periods rather than opportunistic selling.<sup>8</sup>

Indeed, the Commission's Staff Study agrees with this conclusion, stating that: "There are a number of reasons why insider sales may coincide with repurchase program announcements, making it difficult to ascertain the motivations underlying insider sales. For example, because repurchase program announcements often coincide with earnings announcements and companies often prohibit insiders from trading in the period leading up to earnings announcements, insider sales activity may be the result of pent-up demand."<sup>9</sup> By neglecting this alternative explanation, the Proposal fails to adequately explain how the new requirements will overall promote efficiency, competition, and capital formation.

The Commission's economic analysis also fails to consider a new study from Dittmann, Li, Obernberger, and Zheng (2022) in which the authors examine whether insiders use share buybacks to sell equity at inflated stock prices around a stock

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<sup>8</sup> *Supra* note 5, p. 3

<sup>9</sup> SEC Staff Response to Congress: Negative Net Equity Issuance (Dec. 23, 2020), p. 11, *available at* <https://www.sec.gov/files/negative-net-equity-issuance-dec-2020.pdf>.

buyback.<sup>10</sup> The authors find that the timing of both buyback programs and insider sales is largely determined by the issuer’s corporate calendar through blackout periods and earnings announcement dates – times when both repurchases and insider sales are restricted. The authors conclude that any positive correlation between share repurchases and insider selling is likely driven by blackout periods and not opportunistic insider trading around repurchases.

Similarly, the SEC did not consider a 2019 study from PWC and Professor Alex Edmans of the London Business School, commissioned by the UK government, which examined whether buybacks were used to inflate executive pay in the UK from 2007-2017.<sup>11</sup> The authors found that, over the 10 years studied, not a single FTSE 350 firm used share buybacks to meet an EPS target that it would have otherwise missed. The authors further found that executives with EPS targets did not undertake more repurchases than those without.

The PWC/Edmans study also examined whether buybacks are undertaken at the expense of company investments. The authors found no relationship between share buybacks and investment, inconsistent with concerns that executives were funding repurchases in lieu of investment projects.

The Commission cannot “completely discount[] studies that “reach[] the opposite result” of the Commission’s own conclusions. *Bus. Roundtable*, 647 F.3d at 1151.

**1.C.** Evidence cited around repurchases to achieve EPS-linked bonuses, repurchases and investment, and repurchases to manipulate markets is incomplete and inconclusive.

The Chamber has additional concerns around the integrity of cited references that the Proposal cites, and it is also concerned by the Commission’s failure to consider less costly alternatives for promoting efficiency, competition, and capital formation by reducing any problems related to sections on EPS-linked bonuses,<sup>12</sup> repurchases and investment,<sup>13</sup> and repurchases to manipulate markets.<sup>14</sup>

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<sup>10</sup> See Dittmann, I., Li, A. Y., Obernberger, S., & Zheng, J. (2022). The impact of the corporate calendar on the timing of share repurchases and equity grants (January 21, 2022). Available at SSRN: <https://ssrn.com/abstract=4004098>.

<sup>11</sup> See Edmans, A. (2019). Share Repurchases, Executive Pay and Investment. Available at [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/817978/share-repurchases-executive-pay-investment.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/817978/share-repurchases-executive-pay-investment.pdf)

<sup>12</sup> *Supra* note 5, p. 7

<sup>13</sup> *Supra* note 5, p.10

<sup>14</sup> *Supra* note 5, p. 12

For instance, as the attached addendum notes, the Proposal does not discuss the Commission's 2020 Staff Study, which concludes: "[M]ost of the money spent on repurchases over the past two years was at companies that either do not link managerial compensation to EPS-based performance targets or whose boards considered the impact of repurchases when determining whether EPS-based performance targets were met or in setting the targets, suggesting that other rationales motivated the repurchases."<sup>15</sup>

Relatedly, the Proposal does not reflect the reality that many companies' compensation plans adjust for any impact of share repurchases beyond what was in the board-approved plan to begin with. Moreover, compensation committees review all the impacts of EPS growth, including on share repurchases, and take that into account when exercising discretion over how much is ultimately paid to management.

In sum, the Proposal fails to identify how increased disclosures of share repurchases will promote efficiency, competition, and capital formation. Moreover, the Commission's own 2020 Staff Study provides quantification that would refute some of the economic concerns that the Proposal references. Taken together, the Proposal and accompanying economic analysis do not present robust evidence of harms to investors and the securities market attributable to the current disclosure requirements for share repurchases.

The Chamber supports efforts to root out illegal behavior in the market but encourages the Commission to better analyze available evidence and adjust accordingly as it weighs how to proceed on subsequent rulemaking.

**2. The proposal does not adequately consider the next-day reporting requirement's costs, including additional market volatility, and it does not adequately weigh those costs against the Proposal's purported benefits.**

The Chamber is deeply concerned about the Commission's proposed next-day reporting requirement for share repurchase activity. As referenced in the discussion of information asymmetry above (2.A), the SEC has not offered compelling evidence that a next-day reporting requirement would create the benefit the Proposal purports it would. Instead, next-day reporting risks greater market volatility and imposes unnecessary burdens, both substantial harms that have not been thoroughly contemplated.

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<sup>15</sup> *Supra* note 9, p.45.



An effective disclosure regime provides investors with the material information they need to make objective decisions regarding the value of an investment but does not overwhelm them with peripheral information that can obscure what is material and distract from what matters about a company.<sup>16</sup> The competitiveness of the U.S. capital markets depends on getting the balance of information right, including the frequency with which that information is provided. As Justice Thurgood Marshall explained in *TSC Industries v. Northway*, providing investors with “an avalanche of trivial information ... is hardly conducive to informed decisionmaking.”<sup>17</sup> Just as the SEC has a responsibility to protect investors from receiving too little information, so too does the SEC have a responsibility to protect investors from too much information. The SEC’s proposed rule inadequately explains how it believes this rule strikes the correct balance.

As part of a comprehensive management strategy, some companies engage in stock buyback activity 250 days a year. Under the Proposal as conceived, that would lead to an additional 250 yearly disclosures that have not been demonstrated to be readily actionable or useful to the average investor. Providing information about repurchases on a next-day cadence risks providing just such “an avalanche of trivial information” to investors, potentially resulting in confusion rather than protection.

Providing too much information to investors also risks misinterpretation and, ultimately, increased market volatility. A next-day reporting cadence is divorced from other business and commercial reporting rhythms and is likely to present distorted information to the market. On a next-day frequency, Form SR would provide information to market participants that could give investors the impression they can glean meaningful insights about a company’s intended activities based on an increase or decrease in share repurchase volume or cessation of a buyback plan altogether. Investors may be led to inaccurate views about a company’s outlook or intentions and could ultimately promote speculative trading based on next-day information. Although produced in aggregate numbers and in average price paid per share, the amount of granular historical record companies would ultimately produce would be voluminous and mineable and could lead to incorrect conclusions about company practices and methodology.

Therefore, to the extent the Commission requires more information about share repurchase activity, it should do so with a frequency no less than once a month and in

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<sup>16</sup> See Center for Capital Markets Competitiveness (2017). Essential Information: Modernizing Our Corporate Disclosure System. Available at [http://www.centerforcapitalmarkets.com/wp-content/uploads/2013/08/U.S.-Chamber-Essential-Information-Materiality-Report-W\\_FINAL.pdf?x48633](http://www.centerforcapitalmarkets.com/wp-content/uploads/2013/08/U.S.-Chamber-Essential-Information-Materiality-Report-W_FINAL.pdf?x48633)

<sup>17</sup> 426 U.S. 438, 448-49 (1976)

backward-looking, aggregate terms. A monthly cadence would provide more focused information, limiting the likelihood of misinterpretation while providing sufficient information to the market and its regulator about company activity.

Moving Form SR to a once-a-month frequency would also cut down on the internal compliance challenges of next-day reporting. Disclosure of any kind poses logistical and mechanical challenges for companies. Next-day disclosure would exacerbate these challenges such that the force of disclosure would likely alter some companies' share repurchase practices, threatening the benefits that repurchases present, including to retail investors focused on returns in the long-term, as discussed in Section 4 below.

In addition, the SEC should provide greater clarification around disclosure related to Accelerated Share Repurchase ("ASR") transactions. The Proposal should clarify that any reporting requirements applicable to ASR transactions should apply only to the initial purchase by a company and to any additional shares acquired by the company at final settlement of the transaction period.

Should the SEC move forward with Form SR, it should take these consequences of next-day reporting into account and should strongly consider moving to a once-a-month frequency, and should thoroughly explain any analysis, including the cost-benefit analysis, that justifies a daily disclosure requirement as opposed to a monthly or less frequent alternative.

### **3. The periodic "objective or rationale" disclosure requirement will not promote efficiency, competition, or capital formation.**

The Chamber is also concerned about the SEC's proposed Item 703 periodic disclosure requirements and corresponding changes to Forms 20-F and N-CSR. The SEC has proposed to require companies to disclose the 'objective or rationale' for its share repurchases and the process or criteria used to determine the amount of repurchases. Disclosures such as these are worrisome because they border on interfering with company governance, planning, and decisionmaking and again risk misinterpretation.

Companies use *surplus* capital for repurchases. Using this capital in this manner gives companies an efficient means of attenuating the temptation to invest in negative net present value projects that sub-optimally grow the size of a company's assets. Prior to the SEC's safe harbor for share repurchases, there was considerable evidence that

some managers would use surplus cash for projects or acquisitions that increased the size of assets under their control, aiming to boost managerial prestige and compensation and thereby destroying firm value.<sup>18</sup> Repurchasing shares limits the resources under management control, thereby requiring firms to engage with capital market participants to fund new investment. Stock buybacks are a valuable management tool that allows companies to better manage value and make healthy decisions.

The benefits of stock buybacks are abundant and clear; moreover, as discussed below and in the attached addendum, there is little evidence to show that executives and management are opportunistically structuring share repurchase programs for personal gain. The SEC, however, has predicated its proposed amendments around Item 703 on this very principle. The SEC's own economic analysis in the Proposal admits that "The benefits of the information about the rationale for repurchases could be limited ... if investors are able to infer the purpose of repurchases from other public information."<sup>19</sup> Further, the economic analysis goes on to say: "The benefits of the information about the rationale for repurchases could be limited if such disclosure is boilerplate and provides relatively little specificity to investors."<sup>20</sup> Companies engage in buybacks for purposes of corporate efficiency and, upon an explicit authorization and approval for a share repurchase program, already publicly disclose their intent to move forward with a repurchase program, including information such as: timing; size; features designed to achieve a specified objective; and method of repurchase. Investors thus have significant information about a repurchase program and an understanding of the program's mechanics and purpose. Additional disclosure in this manner would be superfluous and is likely to be boilerplate, and therefore – by the Commission's analysis – of little to no use to investors.

The costs of a "rationale or objective" disclosure, on the other hand, are significant. Companies that choose to comply with this disclosure requirement using something other than boilerplate language will incur costs to ensure that the language is holistic, does not create unnecessary litigation risk, and otherwise in compliance with regulatory requirements. The Proposal does not adequately quantify, analyze, or weigh these costs. On the other hand, boilerplate is unlikely to provide any new information to investors, and it is therefore unlikely to create any market benefits. Additional "rationale or objective" disclosures are thus unlikely to promote efficiency, competition, or capital formation.

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<sup>18</sup> See Jensen, M. (1986). Agency costs of free cash flow. *American Economic Review*, 76, 323–329.

<sup>19</sup> At p. 49

<sup>20</sup> *Id.*

Beyond “rationale and objective” disclosures, the Chamber also has concerns about new requirements pertaining to shares sold by executives during buyback periods. As explained above, any positive correlation between share repurchases and insider selling is likely driven by blackout periods and not opportunistic insider trading around repurchases. Despite this fact, the Commission has moved toward requiring new disclosures for directors’ and officers’ trading activity happening concurrently with a share repurchase program – based upon the unjustified assumption that nefarious activity is occurring. Additional disclosure in this regard could well lead investors to confuse correlation for causation of inappropriate company behavior (where there is none). This would undermine efficiency, not promote it. CCMC supports efforts to root out bad behavior, but encourages the SEC to consider the likelihood that proposed transparency measures could mislead investors, especially because many company repurchase programs operate almost every trading day of the calendar year and are often in compliance with Rule 10b-18 and current 10b5-1(c) practices.

While it is imperative that bad behavior be identified and stopped, disclosures should be designed to provide meaningful protections to investors and not unduly mislead them. As a result, the Chamber encourages the SEC to reconsider its periodic disclosure proposals or at a minimum to explain how those proposals will promote efficiency, competition, or capital formation.

**4. The Proposal’s economic baseline analysis does not sufficiently consider that share repurchase programs create substantial benefits for market participants and investors – including retail investors – and should not be unduly deterred.**

Shareholders rightly expect companies to act as prudent stewards of their capital. Specifically, to the extent that companies generate capital that they cannot reinvest consistent with their strategic objectives, share repurchase programs present an efficient way to manage value and make smart business decisions.

Share repurchases contribute to stronger capital markets. A Fall 2021 white paper published by the Chamber found that corporate share repurchase programs are an important management tool for companies that have significant benefits for capital markets, particularly retail investors.<sup>21</sup> The Chamber’s report identified a few key areas of economic benefit for share repurchases, including many benefits for retail investors:

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<sup>21</sup> *Supra* note 4

1. **Greater liquidity:** Share repurchase programs provide substantial market liquidity, which facilitates orderly trading and reduces transaction costs for investors, including retail investors;
2. **Reduced volatility:** Share repurchases significantly reduce realized and anticipated return volatility. Imposing limitations on repurchase activity would increase stock market volatility and force investors, including retail investors, to bear greater amounts of downside risk;
3. **Benefit to retail investors:** Share repurchases generate an economically large benefit for retail investors. Since 2004, buybacks have saved retail investors between \$2.1 – 4.2 billion in transaction and price impact costs;

Managers strategically use share repurchase programs during periods of uncertainty. These effects help mitigate risks, allow institutional and retail investors alike to buy and sell shares without having a large price impact, and stabilize trading markets. Thus, repurchases help to reduce volatility, which presents a benefit to all shareholders, including retail investors, regardless of whether investors buy and sell shares in their own accounts or participate indirectly through investment in retirement accounts. Company shareholders view share repurchases as an important element of value creation.

These benefits, including an estimated \$4.1 billion savings to retail investors, must not be overlooked as the SEC contemplates moving forward with a rulemaking. In her statement supporting the proposed rule, Commissioner Allison Herren Lee characterized increased disclosure around repurchases, including the next-day reporting requirement and periodic rationale requirement, as a method to increase transparency that would benefit companies making “smart and thoughtful” choices and that, alternatively, “if anticipated disclosure operates to dampen enthusiasm for buybacks, that may well arise from flaws in the strategy behind the practice at certain companies.”<sup>22</sup> What this view does not acknowledge, however, is that increased disclosure also presents an increased compliance burden and thus increased costs for companies that choose to engage in share repurchase programs. Although the Commission’s proposed approach may seek to deter bad actors from gaming repurchase activity, the increased costs imposed on both small and large companies will deter them from making “smart and thoughtful” choices, and to reconsider engaging repurchases. Thus, the additional costs imposed by the Proposal would ultimately deprive investors, markets, and the public of those important benefits of share repurchase programs.

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<sup>22</sup> Available at <https://www.sec.gov/news/statement/lee-statement-corporate-share-repurchase-proposal-121521>

The Commission should consider the effects that these benefits have on efficiency, competition, and capital formation as part of the Proposal's baseline analysis. The Commission should also consider whether the proposal will suppress repurchases, thereby suppressing the benefits discussed above, and it should quantify that suppression as one of the Proposal's costs. In other words, the Commission must be circumspect that it is not unduly deterring buybacks for all public companies based on perceived flaws in the strategy of a few. Indeed, the Commission's own 2020 Staff Report covering share repurchases concludes that, "... on average, repurchases are viewed as having a positive effect on firm value."<sup>23</sup> In effect, the Commission's Proposal embraces a dramatic shift in viewpoint on repurchases, which would require a substantial shift in facts in the past two years sufficient to justify such a changed worldview.

**5. The Commission must quantify the Proposal's costs, and if it relies on commenters' submissions for that quantification, it must give adequate time for further comment.**

The Commission has the statutory obligation "*apprise itself . . . of the economic consequences of a proposed regulation before it decides whether to adopt the measure.*" *Chamber of Com. Of U.S.*, 412 F.3d at 144 (emphasis added); *see Bus. Roundtable*, 647 F.3d at 1150. The Proposal states that many costs and other effects of the Proposal "cannot be quantified." 87 Fed. Reg. at 8,451. Yet, even if some of the Proposal's effects cannot be quantified, the Commission must try to quantify those costs and effects that are quantifiable. For example, even where the Commission cannot quantify market-wide costs, it must "estimate[] the cost to an individual [company]" when such estimate is possible. *Chamber of Com. of U.S.*, 412 F.3d at 144.

The Proposal also "encourage[s] commenters to provide data and information that would help quantify the benefits, costs, and the potential impacts of the proposed amendments on efficiency, competition, and capital formation." 87 Fed. Reg. at 8,451. Yet, the Proposal does not explain the dissonance between the Commission's position that some effects cannot be quantified and the invitation for commenters to quantify the Proposal's effects. If the Commission is to rely on commenters to help discharge the Commission's duty to quantify costs and other effects, the Commission must, at minimum, provide the public with an explanation of which costs effects it believes to be quantifiable in the first instance.

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<sup>23</sup> *Supra* note 15, p 42

Likewise, if the Commission is to rely on the public to quantify the Proposal's costs and other effects, then the Commission must give the public sufficient time to comment on that quantification. As explained in the Chamber's prior letter, 45 days is not nearly enough. In other words, the Proposal relies on the public for quantification, yet it denies the public sufficient time to do so. These aspects of the Proposal reflect a strategy by which the Commission can attempt to avoid its duty to "appraise itself" of a regulation's costs. *Chamber of Com. Of U.S.*, 412 F.3d at 144. While the truncated comment period is concerning in and of itself, it is especially concerning given the Commission's invitation for the public to quantify costs—an assessment that is the Commission's own responsibility. To the extent that this strategy allows the Commission to avoid that duty, it embodies unlawful arbitrary and capricious rulemaking.

### Conclusion

The Chamber appreciates the opportunity to weigh in on these important matters. Share repurchases provide important benefits to investors, companies, the capital markets, and the economy overall. Although the Chamber supports efforts to hold specific bad actors accountable through transparency, regulation must be constructed in a manner that is practical, does not deter positive market benefits, and is well-supported.

The Chamber and its members stand ready to assist the SEC toward these goals.

Sincerely,

A handwritten signature in black ink, appearing to read 'TK' with a long horizontal flourish extending to the right.

Tom Quaadman  
Executive Vice President  
Center for Capital Markets Competitiveness  
U.S. Chamber of Commerce





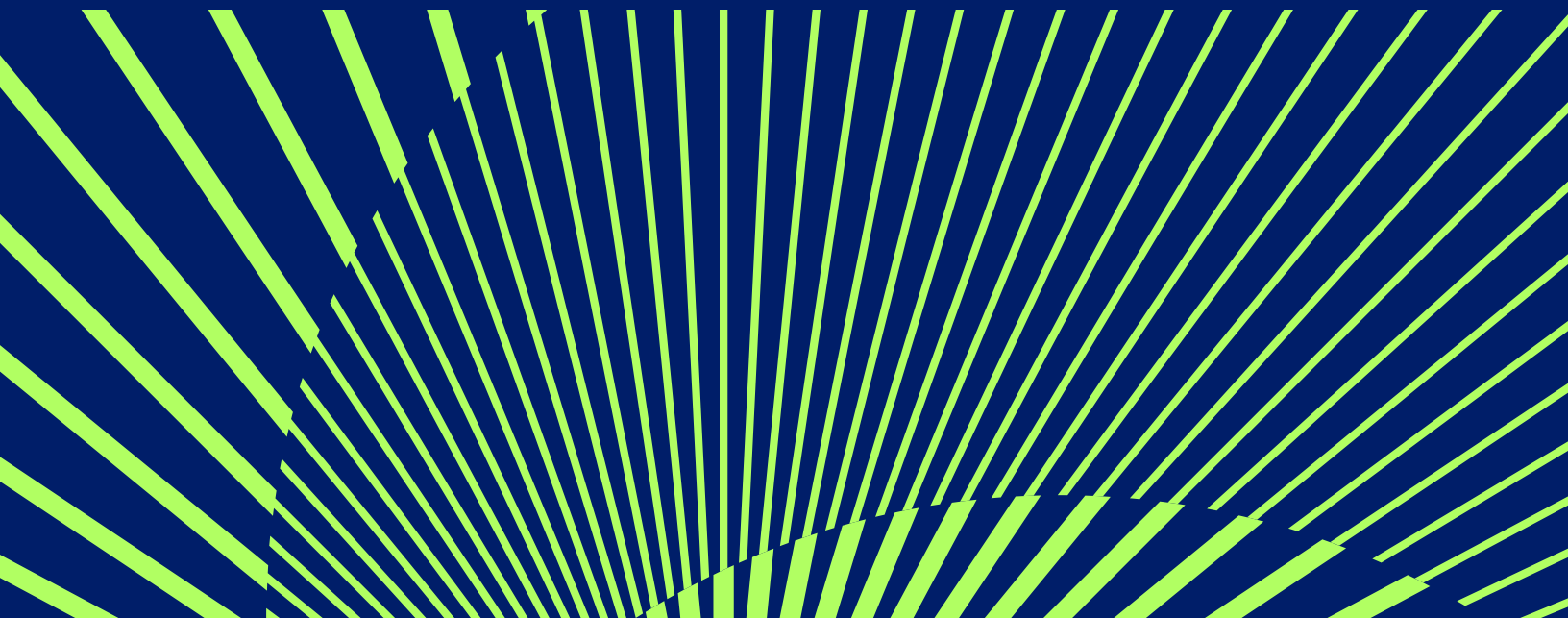
U.S. Chamber of Commerce  
Center for Capital Markets  
Competitiveness

Addendum

Corporate Liquidity Provision &

# Share Repurchase Programs

By: Craig M. Lewis & Joshua T. White



## Craig Lewis, Josh White

File No. S7-21-21; Share Repurchase Disclosure Modernization  
March 22, 2022

On December 15, 2021, the U.S. Securities and Exchange Commission (“Commission”) proposed amendments to its rules regarding the disclosure of share repurchase programs or, as they are colloquially known, stock buybacks. The amendments contained in the Share Repurchase Disclosure Modernization proposal rulemaking (hereafter referred to as the “Proposal”) would require more frequent and detailed disclosures regarding issuers purchasing of their own stock.

Under the current rules, issuers are required to periodically disclose aggregated information about share purchases on a quarterly basis in Form 10-Q and annually in Form 10-K. This information includes the monthly number of shares purchased; the average price paid per share; the total number of shares purchased as part of a publicly announced share repurchase program; the number of shares that may still be purchased under share repurchase programs; and several related footnote disclosures describing, for example, the principal terms of publicly announced share repurchase programs. The current rules also require footnote disclosure of the principal terms of all publicly announced share repurchase programs, the number of shares purchased other than through a publicly announced program, and the nature of the transaction.

The Proposal would principally require next-day reporting of the number and average price of shares repurchased on new Form SR.<sup>1</sup> Additional requirements include a description of the share repurchase program’s rationale,

the criteria used to determine how many shares the company purchased, policies related to the trading of corporate insiders, and whether insiders traded in the 10-day period preceding the repurchase of shares.

We were commissioned by the United States Chamber of Commerce to assess the soundness of the economic analysis (“EA”) that accompanies the Proposal. As we demonstrate below, the EA contains numerous flaws. Most notably, the EA does not articulate a market failure that justifies the need for potential rulemaking; instead, it makes several observations about anticipated benefits but does not explicitly discuss whether the Proposal solves an actual problem. Rather, the EA primarily relies on simple economic reasoning to qualitatively assess potential benefits, such as greater transparency, regardless of whether an actual problem that warrants rulemaking exists. The EA also makes numerous conjectures about opportunistic behavior by issuers and insiders that are primarily supported by a flawed empirical analysis conducted by former SEC Commissioner Robert Jackson.

The Proposal describes two primary economic considerations for potential rulemaking: (1) the opportunistic use of share repurchases by management and (2) asymmetric information between insiders and external stakeholders. We begin by examining the economic baseline of the EA, which is the de facto alternative regulatory approach. The baseline is an essential part of the EA as it represents a reference point

1. The proposed Form SR would require the following disclosure: (1) date of the repurchase; (2) identification of the class of securities purchased; (3) the total number of shares (or units) purchased, including all issuer repurchases regardless of whether they were made pursuant to publicly announced programs. It also requires the following additional disclosures: (1) the average price paid per share (or unit); (2) the aggregate total number of shares (or units) purchased on the open market; (3) the aggregate total number of shares (or units) purchased in reliance on the safe harbor in Exchange Act Rule 10b-18; and (4) the aggregate total number of shares (or units) purchased pursuant to a plan intended to satisfy the affirmative defense conditions of Exchange Act Rule 10b5-1(c). See <https://www.sec.gov/rules/proposed/2021/34-93783.pdf> or the accompanying fact sheet at <https://www.sec.gov/rules/proposed/2021/34-93783-fact-sheet.pdf>.

when comparing alternative rulemaking actions.<sup>2</sup> We characterize how well the EA documents the existence of a market failure. We then identify instances where the EA fails to quantify aspects of the baseline as well as the incremental costs or benefits of Proposal, even though, in some cases, opportunities for quantification exist.

As part of our analysis, we review the relevant academic literature and assess whether the evidence supports the Commission’s interpretation of these studies. We note instances where the EA incorrectly or incompletely cites empirical studies. Although some of these deficiencies can be corrected, we conclude that, on net, the EA reflects an incomplete assessment of the academic literature that appears to be designed to frame the economic effects

in a manner that supports the Proposal rather than to objectively assess it.

Our overarching conclusion is that the EA fails to convincingly identify the existence of a market failure. As such, the Proposal lacks merit and could lead to unanticipated consequences that are detrimental to the interests of issuers and investors.

We structure our addendum as follows. Section I discusses possible opportunistic use of repurchases by issuers/insiders. Section II examines information asymmetries between investors and issuers/insiders around repurchases. Section III offers a brief conclusion. Appendix A tabulates the topical content of 80 studies cited in the Proposal. Appendix B tabulates 22 relevant studies that the EA does not reference.

## I. Opportunistic Share Repurchases

The first potential market failure—the *opportunistic use of repurchases*—is based on a conjecture that managers might use repurchases to manage earnings, inflate stock prices, or hit earnings per share (“EPS”) targets to boost the realized value of their compensation. The clearest explanation of this market failure occurs in the Proposal’s introduction:<sup>3</sup>

*“Some of these commentators view issuer share repurchases as a tool to raise the price of an issuer’s stock in a way that allows insiders and senior*

*executives to extract value from the issuer instead of using the funds to invest in the issuer and its employees.”*

As we discuss below, claims of opportunistic or manipulative use of share repurchases by insiders are not supported by economic analysis. As the above quote illustrates, the EA ignores empirical evidence refuting the notion that repurchases necessarily harm investment and employees, choosing instead to reference opinions offered by commentators.

2. Prior academic work argues that the baseline sets a benchmark for estimating the costs and benefits of the proposed rule because policy choices will vary based on how the current landscape and market failure is framed. See White, J. T. (2015). The evolving role of economic analysis in SEC rulemaking. *Ga. L. Rev.*, 50, 293-325.
3. We note that certain economic effects are discussed in the Proposal’s introduction but are missing from the EA. Because the EA fails to explicitly articulate a clear market failure, the reader is forced to interpret the discussion in the introduction as the Commission’s description of the market failure.

## A. Insider Selling Around Repurchases

The Proposal’s introduction characterizes the evidence that indirectly motivates the possibility that managers opportunistically use buybacks to increase their realized compensation. Throughout the Proposal, the Commission relies heavily on a June 2018 speech by then SEC Commissioner Robert Jackson Jr. (“Jackson Speech”).<sup>4</sup> During this speech, Commissioner Jackson introduces new data analysis (the “Jackson Dataset”) that reputedly shows how executives use repurchases to “cash out” by selling their shares after the buyback announcement.

Commissioner Jackson and his staff analyzed 385 issuers that announced repurchases from January 2017 through March 2018. They conclude that “after the company tells the market that the stock is cheap, executives overwhelmingly decide to sell.” As a confirmation of this activity, Commissioner Jackson presents the graph in Figure 1; it shows that the average total transaction value of insider shares sold increases by more than fivefold just after a repurchase is announced.

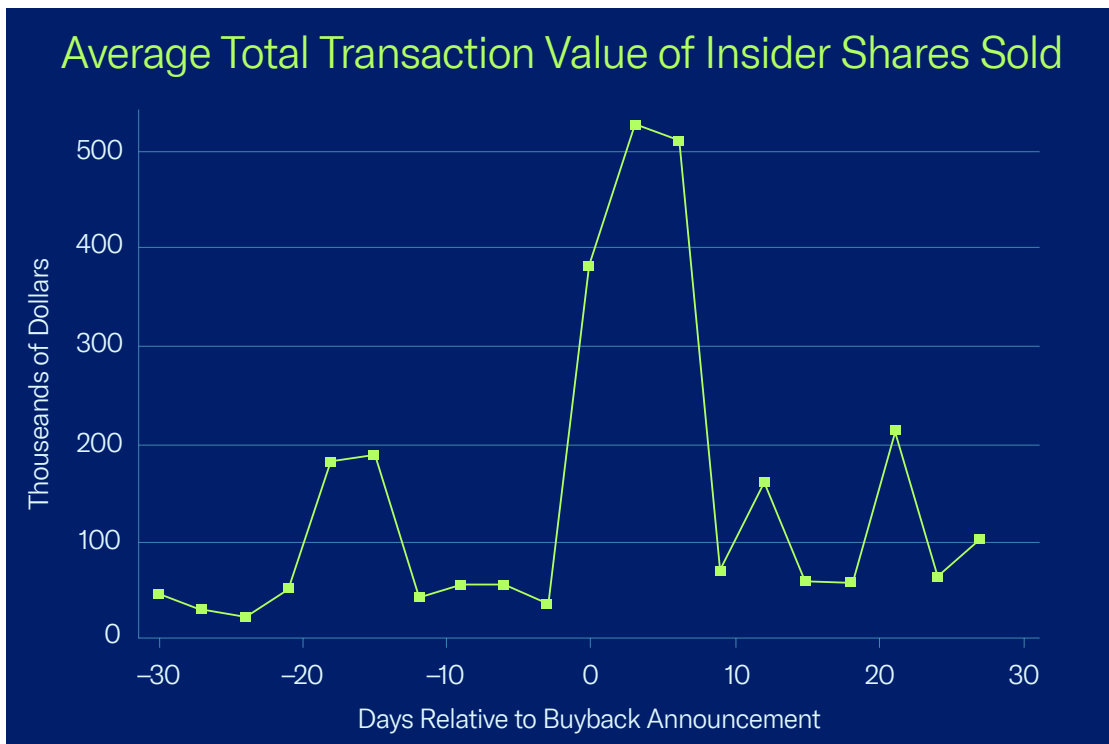


Figure 1. This figure presents the average total transaction value of insider shares sold around repurchase announcements. It is excerpted directly from then Commissioner Jackson’s Speech and is reported as Figure A.3. in the data appendix to this speech.

4. See the speech by Commissioner Jackson Before the Center for American Progress: Jackson, Jr., R. J., (2018, June 11). *Stock buybacks and corporate cashouts*, <https://www.sec.gov/news/speech/speech-jackson-061118> (“Jackson Speech”). The data appendix is found at <https://www.sec.gov/files/speech-jackson-061118-data-appendix.pdf>. The dataset underlying the speech is available at [https://www.sec.gov/files/combined\\_datasets.csv](https://www.sec.gov/files/combined_datasets.csv).

Commissioner Jackson interprets this graph as follows:

*“On average, in the days before a buyback announcement, executives trade in relatively small amounts—less than \$100,000 worth. But during the eight days following a buyback announcement, executives on average sell more than \$500,000 worth of stock each day—a fivefold increase. Thus, executives personally capture the benefit of the short-term stock-price pop created by the buyback announcement.”*

We download and analyze the Jackson Dataset. Figure 1 above plots the three-day moving average of the total transaction value of insider shares sold in the 61-calendar-day event window ([-30, +30]) that centers on the buyback announcement. Because a moving average smooths transaction activity, it tends to overstate the influence of outliers by making trading activity look more persistent than it actually is. To demonstrate this point, we plot the daily average for the Jackson Dataset in Figure 2.

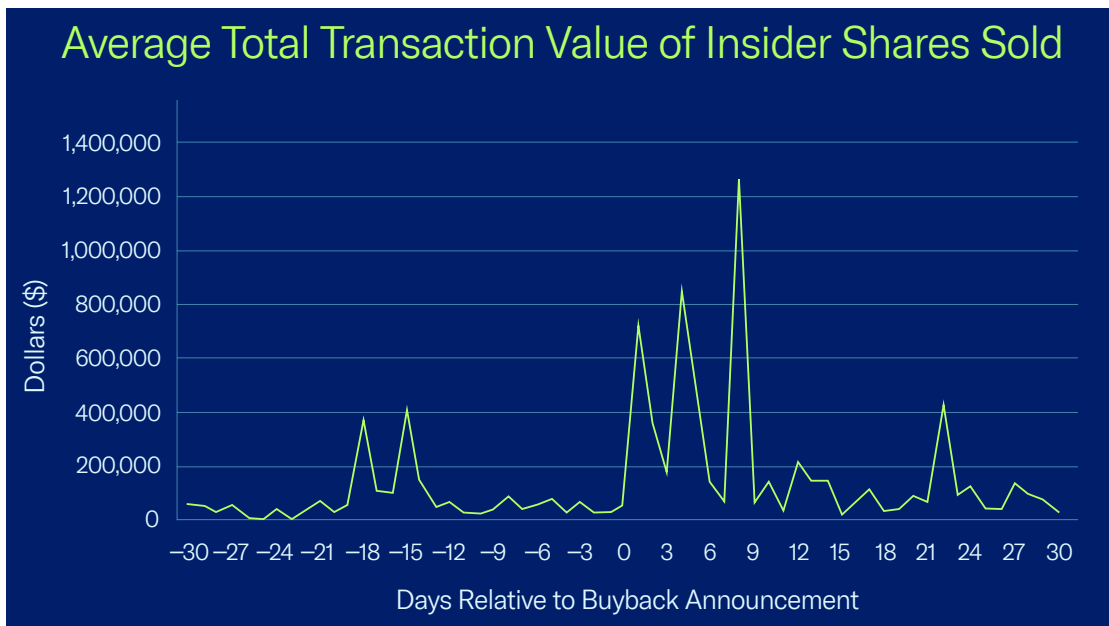


Figure 2. This figure reports average daily transaction value of insider shares sold using the Jackson Dataset.

The overall pattern in Figure 2 is similar to that of Figure 1; however, because our graph is not smoothed, it exhibits large oscillations—which raises the possibility that increases in post-buyback transaction activity could be driven by a small number of large insider sales rather than widespread insider trading around buyback announcements.

Indeed, in Table 1 below, we report that the average and median total transaction values of insider shares sold are \$147,753 and \$0 over the 61-day event window, respectively. The large size of the sample standard deviation (\$3,975,982) relative to the average indicates that the Jackson Dataset exhibits significant right-skewness. For example, the 99th percentile is \$2,062,200, while the maximum value is \$382,737,472.

Table 1 also shows that we obtain similar results if we expand our analysis to a 121-day event window ([-60, +60]).

Event Window	Mean	Standard Deviation	P1	P25	P50	P75	P90	P99	Maximum
[-30, +30]	147,753	3,975,982	0	0	0	0	0	2,062,200	382,737,472
[-60, +60]	182,136	5,625,048	0	0	0	0	0	1,623,672	530,900,000

Table 1. This table presents the distribution statistics of the total transaction value (\$) of insider shares sold using the Jackson Dataset.

Using the Jackson Dataset of 385 stock buybacks, 16,275 possible transaction days occurred during the [-30, +30] event window and 31,021 possible transaction days during the [-60, +60] event window. If we exclude observations that exceed the 99.9th percentile (i.e., all daily total transaction

values of insider shares sold that exceed \$21,264,840), we remove 11 observations: 3 observations from the [-30, -1] window and 8 from the [+1, +30] window. We then plot the average total transaction value of insider shares sold using the remaining 16,264 observations below in Figure 3.

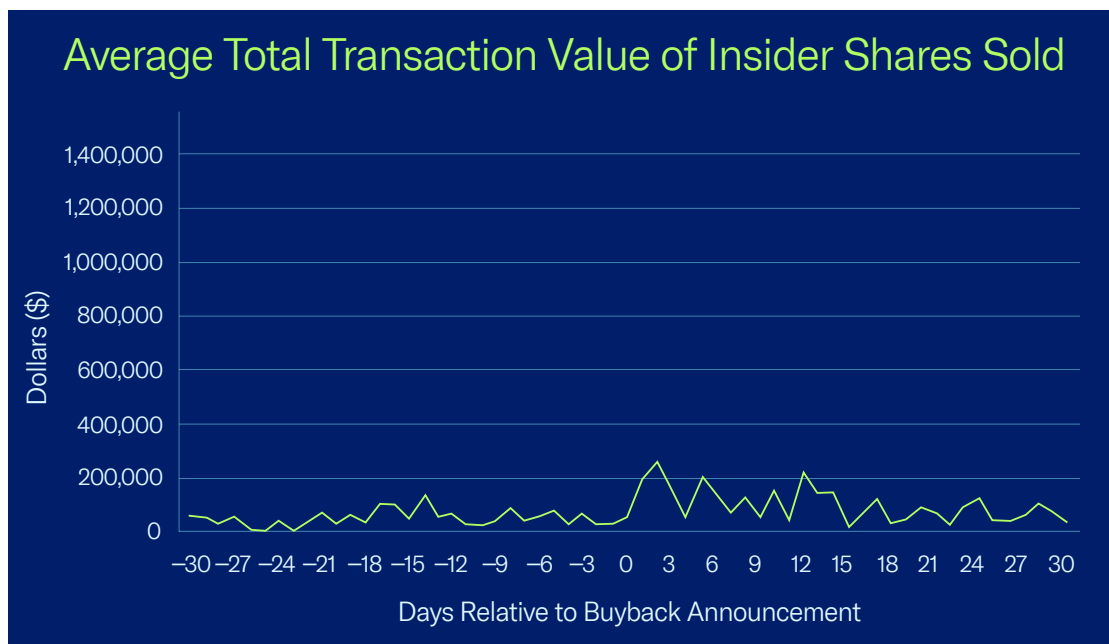


Figure 3. This figure reports average daily transaction value of insider shares sold using the Jackson Dataset after removing all observations that exceed the 99.9th percentile.

Figure 3 tells a different story than the one presented in the Jackson Speech. Specifically, Figure 3 illustrates how removal of a few outliers eliminates the large spikes in transaction activity observed in

Figures 1 and 2. The difference relative to the prior figures is visually striking. Thus, Commissioner Jackson’s conclusion—that “executives personally capture the benefit of the short-term stock-price pop



created by the buyback announcement”— is based on an analysis that significantly overestimates the extent of insider selling. We attribute this overestimation to bias created by a small number of outlier observations in the former Commissioner’s sample. We conclude that one of the key analyses underlying the Proposal does not present robust evidence that insiders opportunistically sell, or “cash out,” their shares after a buyback announcement.

Rather than attributing the increase in post-buyback announcement trading to opportunistic behavior, we posit that the uptick in insider sales is mechanically driven by issuer blackout periods, during which both insider sales and repurchases are prohibited ahead of key information releases. Despite the economic relevance of this alternative explanation, the EA briefly relegates the discussion of blackout periods to two footnotes. Footnote 58 of the EA references the 2020 SEC Staff Study:

*“There are a number of reasons why insider sales may coincide with repurchase program announcements, making it difficult to ascertain the motivations underlying insider sales. For example, because repurchase program announcements often coincide with earnings announcements and companies often prohibit insiders from trading in the period leading up to earnings announcements, insider sales activity may be the result of pent-up demand.”*

Footnote 81 of the EA notes that:

*“In the case of repurchase announcements, where such announcements coincide with earnings announcements, because issuers generally prohibit insiders from trading in the period leading up to earnings announcements as part of blackout periods, insider sales activity after the repurchase announcement may be the result of pent-up liquidity demand.”*

As the Commission considers a re-proposal or adopting a final release, the EA should cite a study by Dittmann, Li, Obernberger, and Zheng (2022) that became publicly available shortly after the Proposal.<sup>5</sup> In this study, the authors examine whether insiders use share repurchases to sell equity at inflated stock prices. They find that the timing of both buyback programs and insider sales is largely determined by trading prohibitions attributable to blackout periods and earnings announcement dates—times when both repurchases and insider sales are restricted. Thus, any positive correlation between share repurchases and insider selling is likely driven by blackout periods rather than opportunistic insider trading around repurchases.

After controlling for the “corporate calendar,” Dittmann et al. (2022) present empirical evidence that the positive correlation between share repurchases and equity-based compensation disappears, and conclude that:<sup>6</sup>

5. See Dittmann, I., Li, A. Y., Obernberger, S., & Zheng, J. (2022, January 21). The impact of the corporate calendar on the timing of share repurchases and equity grants, available at <https://ssrn.com/abstract=4004098>.  
6. Dittmann et al. (2022) control for the corporate calendar using fiscal-month fixed effects and the monthly share of blackout days.

*“[W]e do not find systematic evidence of price manipulation when the CEO’s equity vests or when the CEO sells her vested equity.”*

Dittmann et al. (2022) also show that a CEO is more likely to buy rather than sell stock when a new share repurchase program is announced. They summarize their findings as follows:

*“Overall, these results suggest that the CEO tends to believe that the stock is undervalued when she initiates a buyback program. There is no evidence for the notion that the CEO uses buyback announcements to create short-term private benefits.”*

## **B. Repurchases to Achieve EPS-Linked Bonuses**

The Proposal claims that insiders opportunistically use share repurchase programs to inflate the reported EPS by reducing the shares outstanding in the denominator. Unfortunately, the EA provides no independent quantification demonstrating the rate or magnitude of EPS-driven repurchase activity—something that should be included when characterizing the economic baseline. Instead, the EA only notes:

*“Share price- or EPS-tied compensation arrangements can thus incentivize executives to undertake repurchases, in an attempt to maximize their compensation, even if such repurchases are not optimal from the shareholder value maximization perspective.”*

The associated discussion of this topic is largely relegated to Footnotes 78, 79, and 80, where the Commission cites numerous studies without assessing their implications. In fact, the EA does not provide an objective assessment of whether insiders use repurchases to inflate EPS to earn greater realized compensation. Although not discussed in the Proposal, the clearest evaluation can be found in the Commission’s 2020 Staff Study, which concludes:

*“[M]ost of the money spent on repurchases over the past two years was at companies that either do not link managerial compensation to EPS-based performance targets or whose boards considered the impact of repurchases when determining whether EPS-based performance targets were met or in setting the targets, suggesting that other rationales motivated the repurchases.”*

Further, some of the studies cited in the EA reflect an incomplete framing of the empirical evidence. For example, the EA cites a blog post that summarizes a study by Fields (2016) that interviews 44 directors serving on 95 boards. The Fields (2016) study notes that:<sup>7</sup>

*“[M]ost directors said that their companies are aware of the relationship between buyback programs and compensation and that they make deliberate, informed choices to ensure that they reward executives for desired behavior rather than for financial manipulation of share prices.”*

7. See the comprehensive study: Field, R. (2016, August). “Buybacks and the board: Director perspectives on the share repurchase revolution,” Investor Responsibility Research Center Institute (IRRC) Institute/Tapestry Network, [https://www.tapestrynetworks.com/sites/default/files/publication\\_pdf/IRRCI%20-%20Buybacks%20and%20the%20Board%20-%20August%202016.pdf](https://www.tapestrynetworks.com/sites/default/files/publication_pdf/IRRCI%20-%20Buybacks%20and%20the%20Board%20-%20August%202016.pdf). The blog post is available at <https://corpgov.law.harvard.edu/2016/09/20/buybacks-and-the-board-director-perspectives-on-the-share-repurchase-revolution/>.

In other words, share repurchase programs do not “outsmart” the careful design of executive compensation plans. Although not mentioned in the EA, Fields (2016) describes a reasonable alternative to the proposed increase in repurchase disclosure frequency:

*“Few companies publicly disclose details about buyback decision-making and very few state which of the four reasons are driving any particular buyback program. Although a number of directors mentioned that their companies project how buyback activity will affect EPS and adjust targets accordingly, only 20 S&P 500 companies disclosed that they did so. Most companies and boards with robust buyback processes do not currently disclose enough to receive credit for their work.”*

Another alternative to the Proposal would be to require in the Compensation Discussion and Analysis section of the proxy statement to disclose whether the issuer’s EPS-based executive compensation plan accounts for projected or actual repurchase activity. This type of disclosure would specifically target issuers that utilize EPS bonuses and could be accomplished with relatively low-cost rulemaking or the issuance of interpretive guidance. Unfortunately, the staff of the Commission fails to consider the deterrent value of requiring issuers to describe how compensation committees adjust EPS-based bonuses for repurchases.

The baseline of the EA does not quantify the percentage of issuers’ annual and long-term incentive plans that is tied to EPS and how it correlates with buybacks. The Commission already subscribes or could easily subscribe to academic databases, such as the Incentive Lab by Institutional Shareholder Services, which provide detailed data on executive compensation for members of the Standard and Poor’s (“S&P”) 1500, including EPS-based performance awards.

The EA also fails to quantify (1) how many issuers used share repurchases to trigger an executive bonus that would not have been earned without repurchasing shares and (2) the total executive compensation awarded from potentially opportunistic buybacks. Similar concerns were expressed in the context of the relation between share repurchases and executive pay for issuers listed in the United Kingdom (“UK”). In response, PricewaterhouseCoopers (“PwC”) published a 152-page analysis under the advisory of Professor Alex Edmans in 2019 and presented these results to the UK government.<sup>8</sup> The PwC study found no significant relation between share repurchases and either the existence of an EPS bonus or the proportion of executive incentive awards linked to EPS.

In fact, the PwC report found no evidence of a single repurchase that triggered an EPS-based bonus. Specifically, the PwC study conducted a threshold analysis to compare issuers’ EPS performance had they not repurchased shares to their EPS with the repurchase. During the period 2007 to 2017, the analysis found that:

8. See PwC. (2019, July). *Share repurchases, executive pay and investment*. Report to Department for Business, Energy & Industrial Strategy, BEIS Research Paper 2019/011, <https://www.pwc.co.uk/services/economics/insights/share-repurchases-executive-pay-and-investment.html>.

*“No firms in the sample would have been below the EPS target had they not repurchased shares and above the EPS target with the share repurchase. In other words, no firm successfully used share repurchases to beat its EPS target.”<sup>9</sup>*

The Commission should replicate the threshold analysis of the PwC study for SEC reporting issuers and provide a full quantification of the fraction and transaction value of repurchases that successfully resulted in meeting an EPS target to achieve an executive bonus.

The PwC report also points out that even if EPS compensation targets incentivize insiders to repurchase shares, this outcome could be consistent with shareholder value maximization. For example, when an issuer chooses to return surplus cash to shareholders rather than spending this cash on inefficient investment or expenditures, the EPS target has encouraged efficient investment in repurchases, which is consistent with shareholder value maximization. Such behavior will destroy shareholder value only if an issuer engages in repurchases when it does not have surplus cash and does so by cutting investments in research and development

(“R&D”) or other value-enhancing investments. As we discuss below in Section I.C. of this addendum, the EA fails to cite numerous studies showing that repurchases do not sacrifice issuer investment.

The EA also omits several important studies that provide empirical evidence that fails to support the notion of using repurchases to boost executive compensation through EPS bonuses. For example, Barger, Kulchania, and Thomas (2011) find no evidence of a correlation between EPS-based bonuses and the types of repurchase programs that rapidly boost EPS.<sup>10</sup> Bennett, Bettis, Gopalan, and Milbourn (2017) examine issuers that just meet EPS compensation targets and find no evidence that share repurchases are the mechanism that facilitates this outcome.<sup>11</sup> Similarly, Bens, Nagar, Skinner, and Wong (2003) present evidence that repurchases are used to offset dilution from employee stock options rather than achieve an EPS-based cash bonus.<sup>12</sup>

Importantly, even if some repurchases are used to hit EPS targets, investors appear to “see through” this behavior under the existing quarterly repurchase disclosure regime. For example, two studies that are cited in the Proposal—Hribar, Jenkins, and Johnson (2006) and Kurt (2018)<sup>13</sup>—

9. By underlining key points, this excerpt replicates the emphasis of the PwC report.

10. See Barger, L., Kulchania, M., & Thomas, S. (2011). Accelerated share repurchases. *Journal of Financial Economics*, 101(1), 69-89. This study argues that if EPS bonus incentives were large, insiders would prefer an accelerated stock repurchase (“ASR”) program over an open market repurchase program because the accretion to EPS would be accounted for immediately; however, regression evidence in their study reveals no statistical relation between ASR programs and EPS-based bonuses. We note that the Commission’s 2020 Staff Study references this study, but it is omitted from the EA.

11. See Bennett, B., Bettis, J. C., Gopalan, R., & Milbourn, T. (2017). Compensation goals and firm performance. *Journal of Financial Economics*, 124(2), 307-330. This study provides causal evidence on the relation between EPS bonuses and buybacks by examining issuers that just meet EPS compensation targets to those that just miss. The authors show that firms that just meet EPS compensation targets have lower R&D and abnormal accruals, which indicates that some issuers reduce investment or adjust reported earnings to hit a compensation target. Importantly, there is no significant difference in share repurchases for these samples. These findings imply that, while some issuers might take opportunistic actions to hit performance targets, there is no evidence that share repurchases are a mechanism that facilitates those actions.

12. See Bens, D. A., Nagar, V., Skinner, D. J., & Wong, M. F. (2003). Employee stock options, EPS dilution, and stock repurchases. *Journal of Accounting and Economics*, 36(1-3), 51-90. This study reports a correlation between EPS and repurchase decisions; however, the authors find that EPS-driven cash compensation effects are not the underlying source of this relation. Instead, their evidence shows that some issuers use repurchases in an attempt to offset dilution from employee stock options in order to sustain prior growth rates in reported EPS.

13. See Hribar, P., Jenkins, N. T., & Johnson, W. B. (2006). Stock repurchases as an earnings management device. *Journal of Accounting and Economics*, 41(1-2), 3-27; and Kurt, A. C. (2018). Managing EPS and signaling undervaluation as a motivation for repurchases: The case of accelerated share repurchases. *Review of Accounting and Finance*, 17(4), 453-481.



show that the market considers whether repurchases could help the issuer hit an EPS target. In other words, under the current quarterly reporting regime, investors are not fooled by repurchases that might be used as an earnings management device.

Overall, the empirical evidence largely supports the conclusions of the SEC's 2020 Staff Study, which states the following:

*“Collectively, these findings potentially suggest that most repurchase activity does not represent an effort to artificially inflate stock prices or influence the value of option-based or EPS-linked compensation.”*

## C. Repurchases and Investment

The Proposal's introduction (but not the EA) notes that some commentators view repurchases as harmful because they divert cash to shareholders that could have been used to fund investment or increase employee compensation. We note that these comments are made by (1) Senator Elizabeth Warren and (2) William Lazonick in a 2015 essay that assesses a statement by then presidential candidate Hillary Clinton.<sup>14</sup>

Academics, including those referenced prominently in the Proposal such as Professor Jesse Fried, have questioned this notion. In a series of academic studies, essays, and blog posts, Professor Fried and

Professor Charles C.Y. Wang argue that this “accepted wisdom” is “flat out wrong.”<sup>15</sup>

Moreover, peer-reviewed academic research by Fried and Wang (2019) refutes the superficial arguments in the Lazonick essays that share repurchases harm issuers and its employees. Unfortunately, none of these discussions are in the EA.

In Lazonick (2015), the author self-cites a prior 2014 *Harvard Business Review* article titled “Profits Without Prosperity,” which argues that repurchases erode employee income gains, reduce employment levels, and limit issuers' investment in long-term projects.<sup>16</sup> Lazonick's thesis is based on estimates that issuers in the S&P 500 index used 54% of earnings for repurchases and 37% of earnings for dividends over 2003 to 2012. Lazonick (2014) argues that this leaves only 9% of earnings to invest in future growth or employees.

Despite citing the Fried testimony three times, the Proposal fails to mention research by this author demonstrating that repurchases do not sacrifice investment nor do they harm employees. For example, Fried and Wang (2018, 2019, 2021) present empirical evidence that issuers recover approximately 80% of the cash used for dividends and buybacks by engaging in new equity capital formation.<sup>17</sup> Thus, the net cash returned to shareholders is less than half the amount claimed by buyback critics such as Lazonick.

14. See Lazonick, W. (2015, August 11). Clinton's proposals on stock buybacks don't go far enough. *Harvard Business Review*. We note that the link to the Lazonick essay in the Proposal is incorrectly cited as <https://hbr.org/2015/08/clintons-proposals-on-stock-buybacks-dont-go-far-enough>. The correct link is available at <https://hbr.org/2015/08/clintons-proposals-on-stock-buybacks-dont-go-far-enough>.

15. See Fried, J., & Wang, C.C.Y. (2019, March 13). *Democratic senators and the buyback boogeyman*. Harvard Law School Forum on Corporate Governance, <https://corpgov.law.harvard.edu/2019/03/13/democratic-senators-and-the-buyback-boogeyman/>.

16. See Lazonick, W. (2014, September). Profits without prosperity. *Harvard Business Review*, 46-55, <https://hbr.org/2014/09/profits-without-prosperity>.

17. See Fried, J. M., & Wang, C. C. (2018, March-April). Are buybacks really shortchanging investment? *Harvard Business Review*, 88-95, <https://hbr.org/2018/03/are-buybacks-really-shortchanging-investment>; Fried, J. M., & Wang, C. C. (2019). Short-termism and capital flows. *Review of Corporate Finance Studies*, 8(1), 207-233; and Fried, J. M., & Wang, C. C. (2021). Short-termism, shareholder payouts and investment in the EU. *European Financial Management*, 27(3), 389-413.

Fried and Wang also note that estimating the payout ratio as a percentage of net income—as in Lazonick (2014)—fails to recognize the basic, fundamental accounting principle that net income already deducts R&D expenditures, which they estimate accounts for 25% to 30% of net income. Fried and Wang (2018, 2019, 2021) highlight flaws in viewing stock buybacks and investments as substitutes. The authors' evidence indicates that issuers can make all of the investment in capital expenditures and R&D that managers deem necessary—while still being able to repurchase shares from *surplus* cash. Thus, buybacks do not shortchange investments in the company and its employees.

The EA also misses an opportunity to discuss other literature on this topic. For example, Asness, Hazelkorn, and Richardson (2018) present empirical evidence that repurchases do not mechanically grow earnings or reduce investment.<sup>18</sup>

Edmans (2017, 2020) also argues that issuers do not systematically misuse cash for repurchases. He contends that such claims put the “cart before the horse” since issuers first allocate cash to investment based on projects that generate a return higher than the issuers' cost of capital.<sup>19</sup> Only surplus cash is used for repurchases, which is consistent with survey evidence in Brav, Graham, Harvey, and Michaely (2005) that issuers fund repurchases with residual cash flow after funding investment. Although the EA cites the 2005 Brav et al. study four times, it fails to point out that this survey provides

evidence that pushes back on the notion that repurchases sacrifice investment.

In one of the few discussions of the relation between repurchase and investment or employees, Footnote 80 of the EA points to a study by Almeida, Fos, and Kronlund (2016):

*“EPS-motivated repurchases are associated with reductions in employment and investment, and a decrease in cash holdings” and concluding that “managers are willing to trade off investments and employment for stock repurchases that allow them to meet analyst EPS forecasts.”*

Yet, a more thorough assessment of this study would uncover their statement that “[i]t is clear that EPS-induced repurchases are on average not detrimental to shareholder value or subsequent performance.”

The EA also fails to recognize the findings of the Commission's own 2020 Staff Study, which clearly notes in its conclusion that “most repurchases are conducted by companies with excess cash relative to investment opportunities.”

Moreover, although the Proposal cites Congressional testimony by Professor Jesse Fried numerous times, it fails to consider other testimony provided during the same subhearing. For example, Professor Craig Lewis opines that:<sup>20</sup>

*“Opponents of share buyback programs typically argue that they: 1) artificially inflate share price, 2)*

18. See Asness, C., Hazelkorn, T., & Richardson, S. (2018). Buyback derangement syndrome. *Journal of Portfolio Management*, 44(5), 50-57.  
19. See Edmans, A. (2017, September 15). The case for stock buybacks. *Harvard Business Review*; and Edmans, A. (2020). *Grow the pie: How great companies deliver both purpose and profit*. Cambridge University Press.  
20. See Lewis, C. M. (2019, October 17). Examining corporate priorities: The impact of stock buybacks on workers, communities, and investment, Testimony of Craig M. Lewis before the U.S. House of Representatives Subcommittee on Investor Protection, Entrepreneurship, and Capital Markets, <https://financialservices.house.gov/uploadedfiles/hhrg-116-ba16-wstate-lewisc-20191017.pdf>.

*crowd out investment, 3) result from managerial short-termism, and 4) disproportionately benefit the wealthy and corporate insiders. I argue that these conjectures are either not supported by empirical analysis or are based on misconceptions about the how share repurchase programs actually operate.”*

Professor Lewis provides empirical evidence demonstrating the repurchases are an efficient method for distributing surplus cash.<sup>21</sup>

Overall, the EA fails to deliver robust discussion of the economic implications of buybacks for corporate investment.

## **D. Repurchases to Manipulate Markets**

In the Proposal, the Commission notes that:

*“With respect to share repurchase announcements, some have suggested that managers may take advantage of positive stock price reactions to non-binding repurchase announcements and use disingenuous repurchase announcements to manipulate share prices.”*

As evidence of these allegations of market manipulation, the Proposal cites a study by Chen, Ikenberry, Wang, and Lee (2010), who note that some issuers misled investors by announcing share repurchases that the issuer did not execute. This study examines a sample

period that predates the Commission’s 2003 requirement that issuers report aggregated monthly repurchase activity on a quarterly basis (Item 703).<sup>22</sup> Such actions could be considered “cheap talk,” where issuers might announce a buyback authorization that they do not intend to execute in hopes that it will lead to short-term stock price appreciation. However, the 2010 Chen et al. paper clearly states:

*“Moreover, as we subdivide the evidence further, we also conclude that the total number of buybacks where managers may have been intending to mislead investors, while non-zero, also appears to be limited.”*

This finding does not represent a systematic market failure that requires the formal alteration of disclosure obligations. Moreover, the study is incapable of determining if there was an intent to deceive investors or whether changing business conditions now favor the execution of a repurchase program. At a minimum, the EA should replicate the approach in this study—a duration of 21 years—to determine if these limited instances of misleading investors continue to occur after the 2003 changes in repurchase disclosure frequency.

In fact, claims that repurchases are conducted to manipulate stock prices are inconsistent with the conclusions of the 2020 SEC Staff Study (p. 45), which states that:

21. See Lewis, C. M. (2019). The economics of share repurchase programs. Report commissioned by the Association of Mature American Citizens, <https://amac.us/wp-content/uploads/2019/02/The-Economics-of-Share-Repurchase-Programs1.pdf>.

22. See Chan, K., Ikenberry, D. L., Lee, I., & Wang, Y. (2010). Share repurchases as a potential tool to mislead investors. *Journal of Corporate Finance*, 16(2), 137-158; and *Purchases of Certain Equity Securities by the Issuer and Others*, Release No. 33-8335 (Nov. 10, 2003) [68 FR 64952 (Nov. 17, 2003)].



*“[R]epurchase announcements are accompanied by stock price increases. This announcement effect does not dissipate over time, as one would expect if repurchases were based on efforts to manipulate share prices.”*

Given the scarce evidence that share repurchase announcements are used to mislead markets—and that the Commission’s own staff found no cross-sectional evidence of manipulative buyback activity—the EA fails to demonstrate a market failure that warrants the proposed rulemaking.<sup>23</sup>

## II. Impact of More Frequent Disclosure on Information Asymmetry

The Proposal describes how asymmetric information might be reduced by increasing buyback disclosure frequency but does not explain why the current level of transparency would be considered a market failure. The Proposal notes:

*“[A] lack of timely disclosure could contribute to information asymmetries between investors and issuers/insiders.”*

The Proposal then conjectures that a lack of timely disclosure could lead to the market failure of *asymmetric information* between investors and issuers or insiders. The only substantive discussion of information asymmetry occurs in the introduction and is, once again, missing from the EA:

*“In particular, we are concerned that, because issuers are repurchasing their own securities, asymmetries may exist between issuers and affiliated purchasers and investors with regard to information about the issuer and its*

*future prospects. This, in turn, could exacerbate some of the potential harms associated with issuer repurchases. To help address these information asymmetries, we are proposing a new disclosure form and additional disclosure requirements about issuer repurchases.”*

The EA fails to note that asymmetric information is present in all market settings and can hardly be characterized as a market failure. Without some level of asymmetric information, there would be fewer incentives to invest in information collection, resulting in less price discovery and a corresponding reduction in liquidity (see, e.g., Grossman and Stiglitz, 1980).<sup>24</sup>

The EA argues that more frequent disclosure of repurchase activity might reduce information asymmetries between investors and issuers/insiders, which could result in greater stock price liquidity and a lower cost of equity capital. The EA posits:

23. Although the EA does not present widespread empirical evidence of market manipulation through repurchase cheap talk, it notes in Footnote 79 that even the highest concerns of manipulation do not prevent the positive effect of repurchases on price efficiency. See Busch, P., & Obernberger, S. (2017). Actual share repurchases, price efficiency, and the information content of stock prices. *Review of Financial Studies*, 30(1), 324-362.

24. See Grossman, S. J., & Stiglitz, J. E. (1980). On the impossibility of informationally efficient markets. *American Economic Review*, 70(3), 393-408.

*“We expect the proposed amendments to have positive effects on efficiency and capital formation. In particular, any decrease in the information asymmetry between issuers and investors about the value of an issuer’s securities as a result of the disclosure could lead to more informationally efficient prices, and more efficient capital allocation in investor portfolios. Decreased information asymmetries between investors and issuers as a result of the enhanced disclosure under the proposed amendments could also incrementally facilitate capital formation and reduce the cost of capital. It is difficult to determine the incremental contribution of the proposed amendments and thus the magnitude of this potential benefit.”*

Although some degree of information asymmetry will always exist between issuers and investors, the EA does not demonstrate that more frequent repurchase disclosures will have a large enough effect on capital costs or liquidity to outweigh any direct or indirect costs of additional disclosure burdens.<sup>25</sup> For asymmetric information to be considered a market failure, the Commission would need to robustly demonstrate that insiders act in their own self-interest to produce an outcome that is economically harmful to other stakeholders. The lack of such evidence likely explains the use of qualifying language (e.g., “could lead to”) in the EA’s description of potential benefits.

Within the EA, the Commission cites three studies linking decreases in information asymmetry to lower capital costs (Easley and O’Hara, 2004;<sup>26</sup> Botosan, 2006; and Lambert, Leuz, and Verrecchia, 2007). These studies are largely cross-sectional analyses that make general inferences about reductions in asymmetric information. While informative, these studies are not dispositive in the sense that they do not specifically discuss share repurchase activity. The question that the EA needs to address is whether similar effects are associated with more frequent and timely repurchase disclosures.

To this end, the EA claims it is too difficult to quantify the incremental benefits of potential reductions in asymmetric information stemming from the proposed amendments. As such, it fails to present quantitative evidence to support the conjecture that the net effect would reduce issuers’ cost of capital. There are, however, analyses the Commission could have conducted to address the necessity of more frequent disclosure of share repurchase activity. For example, the Commission could examine how investors react to more frequent repurchase disclosure across or within jurisdictions outside the United States. The staff could quantify the marginal impact of repurchase disclosure on liquidity or capital costs. Many academic studies use market and trading-based measures of liquidity—such as Amihud’s Illiquidity—to empirically measure the impact of incremental issuer disclosures on liquidity.<sup>27</sup> In fact, the studies cited in

25. At the margin, regulatory mandated transparency reduces incentives to engage in price discovery and could have the unintended consequence of reduced liquidity. Following Grossman and Stiglitz (1980), markets would indeed be more efficient with respect to information related to share repurchases but could have the countervailing effect of being less efficient with respect to other information that might have been discovered had investors been willing to invest in independent research. Without quantification, it is difficult to assess which consideration dominates.

26. The paper by Easley and O’Hara is incorrectly cited in the Proposal as being published in 2005. It was published in the August 2004 issue of the *Journal of Finance*.

27. See, for example, Balakrishnan, K., Billings, M. B., Kelly, B., & Ljungqvist, A. (2014). Shaping liquidity: On the causal effects of voluntary disclosure. *Journal of Finance*, 69(5), 2237-2278. In this study, the authors link voluntary management earnings forecasts to decreases in Amihud’s trading-based measure of illiquidity. For a discussion on this measure, see Amihud, Y. (2002). Illiquidity and stock returns: Cross-section and time-series effects. *Journal of Financial Markets*, 5(1), 31-56.

Footnote 105 utilize measures of information asymmetry and liquidity, such as the bid-ask spread (Amihud and Mendelson, 1986) and the probability of an informed trade, or “PIN” (Duarte and Young, 2009).

Alternatively, the EA could have used the quasi-natural experiments related to more frequent disclosures in other jurisdictions. For example, the EA notes that “a number of foreign jurisdictions require disclosure of greater frequency and timeliness, relative to current U.S. requirements.” The EA references studies of other jurisdictions with monthly (France) and daily (Hong Kong) repurchase disclosure requirements (Ginglinger and Hamon, 2007; Brockman and Chung, 2001). At a minimum, the Commission could compare liquidity measures of similarly sized issuers operating in the same industry that conduct buybacks across countries with quarterly (U.S.), monthly (France), and daily (“UK” or Hong Kong) repurchase disclosure requirements. Such an analysis would help establish whether higher frequency disclosures have a measurable influence on market-based measures of liquidity and information asymmetry.

Another possible avenue for quantification that the Commission does not consider would be to estimate the incremental information associated with next-day reporting for firms in jurisdictions requiring such disclosure—because the information contained in order flow on the day that a repurchase occurs would be impounded into stock prices. Next-day disclosure would be expected to resolve residual uncertainty regarding the identity of the parties. Such an analysis would quantify

the marginal impact of next-day disclosure requirements. In fact, the EA implicitly recognizes that the incremental information associated with share repurchases may already be reflected in shares prices and that the disclosure itself may not convey economically important information:

*“The benefit of the information contained in a disclosure of recent repurchase activity would be lower to the extent that large issuer repurchases already have a price impact, resulting in price discovery and indirect revelation of information to the market, even in the absence of daily disclosure.”*

By ignoring this issue, the EA fails to quantify the benefit of the proposed amendments, even though the SEC had the ability and resources to directly analyze the economic impact of more frequent disclosure. In fact, Footnote 89 of the EA admits that a study by Brockman and Chung (2001) shows that variation in repurchase frequency does not appear to influence the impact of share repurchases on liquidity.<sup>28</sup>

*“[T]hey compare their findings with those from a foreign regime with a different reporting frequency and extrapolate that “[t]he similarity of our results to the results for the Hong Kong market indicates that the choice of whether to require firms to disclose repurchases one day versus one month after execution does not affect the impact of share repurchases on liquidity”; while the study further concludes that this suggests “that there are limited benefits from requiring greater post-trade transparency of*

28. See Brockman, P., & Chung, D. Y. (2001). Managerial timing and corporate liquidity: Evidence from actual share repurchases. *Journal of Financial Economics*, 61(3), 417-448.

*share repurchases, the conclusion that greater disclosure of repurchases would have limited benefits, in our view, does not follow from the similarity of the effects of repurchases on liquidity in the two countries referenced in the study. As a further caveat, there are potentially significant comparability issues in evaluating data from different jurisdictions, which have varying legal and market conditions for repurchases.”*

Rather than provide this comparison, the EA simply caveats that variation in legal jurisdictions lead to comparability issues.<sup>29</sup> However, such differences could be addressed in a regression model that examines (or matches) on variation in the properties of periodic and ongoing disclosure obligations.<sup>30</sup>

The EA also notes that numerous studies attest market quality and liquidity are higher during repurchase periods under the current system of quarterly reporting of repurchase activity (e.g., Busch and Obernberger, 2017; Hillert et al. 2016). Thus, substantial evidence cited in the EA already calls into question the notion that greater repurchase disclosure frequency will necessarily manifest into material stock liquidity improvements, because the information contained in order flow may subsume much of the information that would be contained in more frequent disclosure.

In support of this notion, recent work by Lewis and White (2021) shows a large, positive impact of buybacks on liquidity during repurchase periods.<sup>31</sup> Lewis and White study a large sample of more than 10,000 U.S. companies over 17 years and find that issuers utilize repurchases to increase stock liquidity and reduce volatility, which stabilizes stock prices. They find that buybacks significantly reduce both realized and anticipated return volatility. The authors’ analysis shows that buybacks generate an economically large benefit for all investors, including retail investors who saved between \$2.1 billion and \$4.2 billion in transaction and price impact costs due to buybacks since 2004. They find that issuers utilize market-based estimates of future volatility to inform their buyback decisions and that when volatility is expected to be higher, issuers increase their buyback intensity to stabilize stock prices, thereby reducing costs for retail investors. Issuers respond to exogenous variation in economic policy uncertainty by strengthening their buyback activities. Issuers also expand buyback activity during critical periods when current investors sell relatively large amounts of shares. Thus, managers use buybacks to actively mitigate price pressure during periods of net selling.

The EA also fails to consider whether daily disclosure could result in so many repurchase filings that it essentially creates “noise” in the disclosure regime.

29. The following discussion is found on page 47 of the Proposal: “While we could not find studies analyzing empirically how the introduction of more frequent disclosure affected buybacks in foreign countries, we also were not able to find evidence that such disclosure requirements adversely affected shareholder value or market participants. The broad application of a disclosure requirement to issuers in a given jurisdiction makes it hard to formulate an empirical setting, such as a quasi-natural experiment, that effectively addresses the question of how the introduction of the disclosure affected buybacks and issuers that undertake them. Moreover, there are potentially significant differences between jurisdictions with respect to other repurchase regulations, market structure, taxation, composition of the subset of issuers that undertake repurchases, and the subset of investors in such issuers, complicating cross-country comparisons or extrapolation from international studies to the U.S. setting.”

30. For example, see the approach in Boone, A. L., Schumann-Foster, K., & White, J. T. (2021). Ongoing SEC disclosures by foreign firms. *The Accounting Review*, 96(3), 91-120.

31. See Lewis, C. M., & White, J. T. (2021). Corporate liquidity provision and share repurchase programs. U.S. Chamber of Commerce: Center for Capital Markets Competitiveness, Fall 2021. Available at [https://www.centerforcapitalmarkets.com/wp-content/uploads/2021/09/CCMC\\_Stock-Buybacks\\_WhitePaper\\_10.2.21.pdf](https://www.centerforcapitalmarkets.com/wp-content/uploads/2021/09/CCMC_Stock-Buybacks_WhitePaper_10.2.21.pdf).

This concern should be considered because prior academic work notes that “too much disclosure can be as costly as too little disclosure.”<sup>32</sup>

Taken together, the EA fails to robustly demonstrate the conjectured benefits of greater repurchase disclosure

frequency on stock liquidity, capital costs, and capital formation; instead, the EA provides a subjective discussion that fails to fully recognize the role of price discovery and existing studies that empirically link repurchase activity to greater liquidity under the current quarterly repurchase disclosure regime.

### III. Summary of Economic Analysis

In this comment letter, we evaluate the Proposal to increase disclosure requirements for share repurchases. Specifically, we analyze the accompanying EA to assess whether it presents a robust cost-benefit analysis that objectively informs the Proposal.

As we demonstrate above, the EA fails to convincingly demonstrate that the Proposal has merit. The EA neglects to demonstrate a market failure that requires regulation; inaccurately or incompletely characterizes the baseline; and omits important citations of studies that could inform the proposed rulemaking. Moreover, the Proposal relies heavily on an analysis by former SEC Commissioner Robert Jackson that contains empirical flaws.

The EA also largely fails to quantify the likely economic impact of the Proposal and instead argues that these analyses are infeasible due to data limitations and that “much of the discussion remains qualitative in nature.” Although this is a common problem that Commission

staff must confront when developing EAs, our comment letter identifies many straightforward methods to quantify the alleged market failures and the potential incremental benefits of the Proposal. Further, we highlight instances where the Commission’s own 2020 SEC Staff Study provides such quantification, which explicitly refutes many of the ostensible market failures referenced in the Proposal.

Taken together, the Proposal and accompanying EA fail to present robust evidence of a market failure attributable to the current disclosure requirements for share repurchases. We conclude that the Commission has failed to establish a need for additional rulemaking that deviates from the status quo.

32. See Core, J. E. (2001). A review of the empirical disclosure literature: Discussion. *Journal of Accounting and Economics*, 31(1-3), 441-456. Core notes that too much disclosure can result in stock price volatility that attracts high-frequency traders and cites Bushee and Noe (2000). See Bushee, B. J., & Noe, C. F. (2000). Corporate disclosure practices, institutional investors, and stock return volatility. *Journal of Accounting Research*, 38, 171-202.



# IV. Appendix A. Studies Cited in Proposal

Topic #	Citation Topic in Proposal	Study #	Study	Location (Footnote, or FN)	Section
1	Buybacks used by insiders to influence stock prices	1	Chan, K., Ikenberry, D. L., Lee, I., & Wang, Y. (2010). Share repurchases as a potential tool to mislead investors. <i>Journal of Corporate Finance</i> , 16(2), 137-158.	FN14, FN79, FN81	I. Introduction; IV. EA
1	Buybacks used by insiders to influence stock prices	2	Palladino, L. (2020). Do corporate insiders use stock buybacks for personal gain? <i>International Review of Applied Economics</i> , 34(2), 152-174.	FN15, FN81	I. Introduction; IV. EA
1	Buybacks used by insiders to influence stock prices	3	Palladino, L. & Lazonick, W. (2021, May). Regulation Stock Buybacks: The \$6.3 Trillion Question, <i>Roosevelt Institute Working Paper</i> .	FN15, FN17	I. Introduction
1	Buybacks used by insiders to influence stock prices	4	SEC Staff Response to Congress: Negative Net Equity Issuance, December 2020.	FN58, FN59, FN60, FN63, FN70, FN80	IV. EA
1	Buybacks used by insiders to influence stock prices	5	Jackson, Jr., R. J., (2018, June 11). <i>Stock buybacks and corporate cashouts</i> , Speech by Commissioner Jackson before the Center for American Progress.	FN15, FN17	I. Introduction
2	Buyback disclosure informs market participants	6	Bonaimé, A. A. (2015). Mandatory disclosure and firm behavior: Evidence from share repurchases. <i>The Accounting Review</i> , 90(4), 1333-1362.	FN27, FN79, FN86, FN99	II. Proposed Amendments; IV. EA
3	Broad study of buybacks	7	Grullon, G., & Ikenberry, D. L. (2000). What do we know about stock repurchases? <i>Journal of Applied Corporate Finance</i> , 13(1), 31-51.	FN28	II. Proposed Amendments
3	Broad study of buybacks	8	Farre-Mensa, J., Michaely, R., & Schmalz, M. (2014). Payout policy. <i>Annual Review of Financial Economics</i> , 6(1), 75-134.	FN58, FN64, FN70	IV. EA
4	Buybacks fluctuate during economic cycles	9	Campello, M., Graham, J. R., & Harvey, C. R. (2010). The real effects of financial constraints: Evidence from a financial crisis. <i>Journal of Financial Economics</i> , 97(3), 470-487.	FN60	IV. EA
4	Buybacks fluctuate during economic cycles	10	Dittmar, A. K., & Dittmar, R. F. (2008). The timing of financing decisions: An examination of the correlation in financing waves. <i>Journal of Financial Economics</i> , 90(1), 59-83.	FN60, FN66	IV. EA
4	Buybacks fluctuate during economic cycles	11	Floyd, E., Li, N., & Skinner, D. J. (2015). Payout policy through the financial crisis: The growth of repurchases and the resilience of dividends. <i>Journal of Financial Economics</i> , 118(2), 299-316.	FN60	IV. EA
5	Buybacks are less of a commitment than dividends	12	Healy, P. M., & Palepu, K. G. (1988). Earnings information conveyed by dividend initiations and omissions. <i>Journal of Financial Economics</i> , 21(2), 149-175.	FN61	IV. EA

Topic #	Citation Topic in Proposal	Study #	Study	Location (Footnote, or FN)	Section
5	Buybacks are less of a commitment than dividends	13	Michaely, R., Thaler, R. H., & Womack, K. L. (1995). Price reactions to dividend initiations and omissions: Overreaction or drift? <i>Journal of Finance</i> , 50(2), 573-608.	FN61	IV. EA
5	Buybacks are less of a commitment than dividends	14	Lee, B. S., & Mauck, N. (2016). Dividend initiations, increases and idiosyncratic volatility. <i>Journal of Corporate Finance</i> , 40, 47-60.	FN61	IV. EA
5	Buybacks are less of a commitment than dividends	15	Brav, A., Graham, J. R., Harvey, C. R., & Michaely, R. (2005). Payout policy in the 21st century. <i>Journal of Financial Economics</i> , 77(3), 483-527.	FN62, FN72, FN78, FN83	IV. EA
6	Buybacks substitute for dividends	16	Skinner, D. J. (2008). The evolving relation between earnings, dividends, and stock repurchases. <i>Journal of Financial Economics</i> , 87(3), 582-609.	FN63	IV. EA
6	Buybacks substitute for dividends	17	Grullon, G., & Michaely, R. (2002). Dividends, share repurchases, and the substitution hypothesis. <i>Journal of Finance</i> , 57(4), 1649-1684.	FN63	IV. EA
7	Buybacks signal stock is undervalued	18	Vermaelen, T. (1981). Common stock repurchases and market signalling: An empirical study. <i>Journal of Financial Economics</i> , 9(2), 139-183.	FN65	IV. EA
7	Buybacks signal stock is undervalued	19	Vermaelen, T. (1984). Repurchase tender offers, signaling, and managerial incentives. <i>Journal of Financial and Quantitative Analysis</i> , 19(2), 163-181.	FN65	IV. EA
7	Buybacks signal stock is undervalued	20	Constantinides, G. M., & Grundy, B. D. (1989). Optimal investment with stock repurchase and financing as signals. <i>Review of Financial Studies</i> , 2(4), 445-465.	FN65	IV. EA
7	Buybacks signal stock is undervalued	21	Hausch, D. B., & Seward, J. K. (1993). Signaling with dividends and share repurchases: A choice between deterministic and stochastic cash disbursements. <i>Review of Financial Studies</i> , 6(1), 121-154.	FN65	IV. EA
7	Buybacks signal stock is undervalued	22	McNally, W. J. (1999). Open market stock repurchase signaling. <i>Financial Management</i> , 55-67.	FN65	IV. EA
7	Buybacks signal stock is undervalued	23	Ofer, A. R., & Thakor, A. V. (1987). A theory of stock price responses to alternative corporate cash disbursement methods: Stock repurchases and dividends. <i>Journal of Finance</i> , 42(2), 365-394.	FN65	IV. EA
7	Buybacks signal stock is undervalued	24	Persons, J. C. (1997). Heterogeneous shareholders and signaling with share repurchases. <i>Journal of Corporate Finance</i> , 3(3), 221-249.	FN65	IV. EA
8	Stock price changes after buybacks	25	Dittmar, A., & Field, L. C. (2015). Can managers time the market? Evidence using repurchase price data. <i>Journal of Financial Economics</i> , 115(2), 261-282.	FN66, FN82, FN84	IV. EA



Topic #	Citation Topic in Proposal	Study #	Study	Location (Footnote, or FN)	Section
8	Stock price changes after buybacks	26	Ben-Rephael, A., Oded, J., & Wohl, A. (2014). Do firms buy their stock at bargain prices? Evidence from actual stock repurchase disclosures. <i>Review of Finance</i> , 18(4), 1299-1340.	FN66, FN84	IV. EA
8	Stock price changes after buybacks	27	Chan, K., Ikenberry, D. L., & Lee, I. (2007). Do managers time the market? Evidence from open-market share repurchases. <i>Journal of Banking &amp; Finance</i> , 31(9), 2673-2694.	FN66, FN85	IV. EA
8	Stock price changes after buybacks	28	Cook, D. O., Krigman, L., & Leach, J. C. (2004). On the timing and execution of open market repurchases. <i>Review of Financial Studies</i> , 17(2), 463-498.	FN66	IV. EA
8	Stock price changes after buybacks	29	Obernberger, S. (2014). The timing of actual share repurchases. Available at SSRN 2434214.	FN66	IV. EA
8	Stock price changes after buybacks	10	Dittmar, A. K., & Dittmar, R. F. (2008). The timing of financing decisions: An examination of the correlation in financing waves. <i>Journal of Financial Economics</i> , 90(1), 59-83.	FN60, FN66	IV. EA
8	Stock price changes after buybacks	30	Bonaimé, A. A., Hankins, K. W., & Jordan, B. D. (2016). The cost of financial flexibility: Evidence from share repurchases. <i>Journal of Corporate Finance</i> , 38, 345-362.	FN66	IV. EA
8	Stock price changes after buybacks	31	Evgeniou, T., de Fortuny, E. J., Nassuphis, N., & Vermaelen, T. (2018). Volatility and the buyback anomaly. <i>Journal of Corporate Finance</i> , 49, 32-53.	FN66	IV. EA
8	Stock price changes after buybacks	32	Barger, L., Bonaime, A., & Thomas, S. (2017). The timing and source of long-run returns following repurchases. <i>Journal of Financial and Quantitative Analysis</i> , 52(2), 491-517.	FN66	IV. EA
8	Stock price changes after buybacks	33	Peyer, U., & Vermaelen, T. (2009). The nature and persistence of buyback anomalies. <i>Review of Financial Studies</i> , 22(4), 1693-1745.	FN66	IV. EA
8	Stock price changes after buybacks	34	Fu, F., & Huang, S. (2016). The persistence of long-run abnormal returns following stock repurchases and offerings. <i>Management Science</i> , 62(4), 964-984.	FN66	IV. EA
9	Buybacks supply liquidity during selling pressure	35	Liu, H., & Swanson, E. P. (2016). Is price support a motive for increasing share repurchases? <i>Journal of Corporate Finance</i> , 38, 77-91.	FN67, FN81	IV. EA
10	Buybacks reduce agency costs of equity	36	Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. <i>American Economic Review</i> , 76(2), 323-329.	FN71	IV. EA
10	Buybacks reduce agency costs of equity	15	Brav, A., Graham, J. R., Harvey, C. R., & Michaely, R. (2005). Payout policy in the 21st century. <i>Journal of Financial Economics</i> , 77(3), 483-527.	FN62, FN72, FN78, FN83	IV. EA
10	Buybacks reduce agency costs of equity	37	Grullon, G., & Michaely, R. (2004). The information content of share repurchase programs. <i>Journal of Finance</i> , 59(2), 651-680.	FN73	IV. EA

Topic #	Citation Topic in Proposal	Study #	Study	Location (Footnote, or FN)	Section
11	Buybacks are flexible	38	Guay, W., & Harford, J. (2000). The cash-flow permanence and information content of dividend increases versus repurchases. <i>Journal of Financial Economics</i> , 57(3), 385-415.	FN74	IV. EA
11	Buybacks are flexible	39	Jagannathan, M., Stephens, C. P., & Weisbach, M. S. (2000). Financial flexibility and the choice between dividends and stock repurchases. <i>Journal of Financial Economics</i> , 57(3), 355-384.	FN74	IV. EA
11	Buybacks are flexible	40	Hoberg, G., & Prabhala, N. R. (2008). Disappearing dividends, catering, and risk. <i>Review of Financial Studies</i> , 22(1), 79-116.	FN75	IV. EA
12	Buybacks are tax efficient	41	Feng, L., Pukthuanthong, K., Thiengtham, D., Turtle, H. J., & Walker, T. J. (2013). The Effects of Cash, Debt, and Insiders on Open Market Share Repurchases. <i>Journal of Applied Corporate Finance</i> , 25(1), 55-63.	FN76	IV. EA
13	Buybacks are used to adjust target leverage	42	Baker, M., & Wurgler, J. (2002). Market timing and capital structure. <i>Journal of Finance</i> , 57(1), 1-32.	FN77	IV. EA
13	Buybacks are used to adjust target leverage	43	Ma, Y. (2019). Nonfinancial firms as cross-market arbitrageurs. <i>Journal of Finance</i> , 74(6), 3041-3087.	FN77	IV. EA
13	Buybacks are used to adjust target leverage	44	Hovakimian, A. (2004). The role of target leverage in security issues and repurchases. <i>Journal of Business</i> , 77(4), 1041-1072.	FN77	IV. EA
14	Buybacks are used for real earnings management	45	Burnett, B. M., Cripe, B. M., Martin, G. W., & McAllister, B. P. (2012). Audit quality and the trade-off between accretive stock repurchases and accrual-based earnings management. <i>The Accounting Review</i> , 87(6), 1861-1884.	FN78	IV. EA
14	Buybacks are used for real earnings management	15	Brav, A., Graham, J. R., Harvey, C. R., & Michaely, R. (2005). Payout policy in the 21st century. <i>Journal of Financial Economics</i> , 77(3), 483-527.	FN62, FN72, FN78, FN83	IV. EA
14	Buybacks are used for real earnings management	46	Hribar, P., Jenkins, N. T., & Johnson, W. B. (2006). Stock repurchases as an earnings management device. <i>Journal of Accounting and Economics</i> , 41(1-2), 3-27.	FN78	IV. EA
14	Buybacks are used for real earnings management	47	Kurt, A. C. (2018). Managing EPS and signaling undervaluation as a motivation for repurchases: The case of accelerated share repurchases. <i>Review of Accounting and Finance</i> .	FN78	IV. EA
14	Buybacks are used for real earnings management	48	Almeida, H., Fos, V., & Kronlund, M. (2016). The real effects of share repurchases. <i>Journal of Financial Economics</i> , 119(1), 168-185.	FN78, FN80	IV. EA
14	Buybacks are used for real earnings management	49	Ezekoye, O., Koller, T., & Mittal, A. (2016, April 29). How share repurchases boost earnings without improving returns, <i>McKinsey</i> .	FN78	IV. EA

Topic #	Citation Topic in Proposal	Study #	Study	Location (Footnote, or FN)	Section
15	Buybacks provide price support even when manipulation concerns are high	50	Busch, P., & Obernberger, S. (2017). Actual share repurchases, price efficiency, and the information content of stock prices. <i>Review of Financial Studies</i> , 30(1), 324-362.	FN79, FN81, FN85, FN98	IV. EA
16	Issuers do not complete all announced buybacks	1	Chan, K., Ikenberry, D. L., Lee, I., & Wang, Y. (2010). Share repurchases as a potential tool to mislead investors. <i>Journal of Corporate Finance</i> , 16(2), 137-158.	FN14, FN79, FN81	I. Introduction; IV. EA
16	Issuers do not complete all announced buybacks	51	Bonaimé, A. A. (2012). Repurchases, reputation, and returns. <i>Journal of Financial and Quantitative Analysis</i> , 47(2), 469-491.	FN79, FN95	IV. EA
16	Issuers do not complete all announced buybacks	6	Bonaimé, A. A. (2015). Mandatory disclosure and firm behavior: Evidence from share repurchases. <i>The Accounting Review</i> , 90(4), 1333-1362.	FN27, FN79, FN86, FN99	II. Proposed Amendments; IV. EA
16	Issuers do not complete all announced buybacks	52	Almazan, A., Banerji, S., & Motta, A. D. (2008). Attracting attention: Cheap managerial talk and costly market monitoring. <i>Journal of Finance</i> , 63(3), 1399-1436.	FN79	IV. EA
16	Issuers do not complete all announced buybacks	53	Bhattacharya, U., & E. Jacobsen, S. (2016). The share repurchase announcement puzzle: Theory and evidence. <i>Review of Finance</i> , 20(2), 725-758.	FN79	IV. EA
17	Buybacks are used to boost executive pay	54	Cheng, Y., Harford, J., & Zhang, T. T. (2015). Bonus-driven repurchases. <i>Journal of Financial and Quantitative Analysis</i> , 50(3), 447-475.	FN80, FN106	IV. EA
17	Buybacks are used to boost executive pay	55	Kim, S., & Ng, J. (2018). Executive bonus contract characteristics and share repurchases. <i>The Accounting Review</i> , 93(1), 289-316.	FN80	IV. EA
17	Buybacks are used to boost executive pay	56	Young, S., & Yang, J. (2011). Stock repurchases and executive compensation contract design: The role of earnings per share performance conditions. <i>The Accounting Review</i> , 86(2), 703-733.	FN80	IV. EA
17	Buybacks are used to boost executive pay	48	Almeida, H., Fos, V., & Kronlund, M. (2016). The real effects of share repurchases. <i>Journal of Financial Economics</i> , 119(1), 168-185.	FN78, FN80	IV. EA
17	Buybacks are used to boost executive pay	4	SEC Staff Response to Congress: Negative Net Equity Issuance, December 2020.	FN58, FN59, FN60, FN63, FN70, FN80	IV. EA
17	Buybacks are used to boost executive pay via EPS	57	Fields, R. (2016, September 20). Buybacks and the board: Director perspectives on the share repurchase revolution. <a href="https://corpgov.law.harvard.edu/2016/09/20/buybacks-and-the-board-director-perspectives-on-the-share-repurchase-revolution/">https://corpgov.law.harvard.edu/2016/09/20/buybacks-and-the-board-director-perspectives-on-the-share-repurchase-revolution/</a> .	FN80	IV. EA
18	Buybacks are used to boost executive pay via stock prices	1	Chan, K., Ikenberry, D. L., Lee, I., & Wang, Y. (2010). Share repurchases as a potential tool to mislead investors. <i>Journal of Corporate Finance</i> , 16(2), 137-158.	FN14, FN79, FN81	I. Introduction; IV. EA

Topic #	Citation Topic in Proposal	Study #	Study	Location (Footnote, or FN)	Section
18	Buybacks are used to boost executive pay via stock prices	58	Bonaimé, A. A., & Ryngaert, M. D. (2013). Insider trading and share repurchases: Do insiders and firms trade in the same direction? <i>Journal of Corporate Finance</i> , 22, 35-53.	FN81, FN82	IV. EA
18	Buybacks are used to boost executive pay via stock prices	59	Cziraki, P., Lyandres, E., & Michaely, R. (2021). What do insiders know? Evidence from insider trading around share repurchases and SEOs. <i>Journal of Corporate Finance</i> , 66, 101544.	FN81, FN82	IV. EA
18	Buybacks are used to boost executive pay via stock prices	2	Palladino, L. (2020). Do corporate insiders use stock buybacks for personal gain? <i>International Review of Applied Economics</i> , 34(2), 152-174.	FN15, FN81	I. Introduction; IV. EA
18	Buybacks are used to boost executive pay via stock prices	60	Ahmed (2017). Insider trading around open-market share repurchases. Working Paper.	FN81	IV. EA
18	Buybacks are used to boost executive pay via stock prices	61	Edmans, A., Goncalves-Pinto, L., Groen-Xu, M., & Wang, Y. (2018). Strategic news releases in equity vesting months. <i>Review of Financial Studies</i> , 31(11), 4099-4141.	FN81	IV. EA
18	Buybacks are used to boost executive pay via stock prices	62	Edmans, A., Fang, V. W., & Huang, A. (2017). <i>The long-term consequences of short-term incentives</i> . European Corporate Governance Institute (ECGI)-Finance Working Paper, (527).	FN81	IV. EA
18	Buybacks are used to boost executive pay via stock prices	35	Liu, H., & Swanson, E. P. (2016). Is price support a motive for increasing share repurchases? <i>Journal of Corporate Finance</i> , 38, 77-91.	FN67, FN81	IV. EA
18	Buybacks are used to boost executive pay via stock prices	50	Busch, P., & Obernberger, S. (2017). Actual share repurchases, price efficiency, and the information content of stock prices. <i>Review of Financial Studies</i> , 30(1), 324-362.	FN79, FN81, FN85, FN98	IV. EA
19	Buybacks are timed with insider purchases to send credible signal	25	Dittmar, A., & Field, L. C. (2015). Can managers time the market? Evidence using repurchase price data. <i>Journal of Financial Economics</i> , 115(2), 261-282.	FN66, FN82, FN84	IV. EA
19	Buybacks are timed with insider purchases to send credible signal	63	Babenko, I., Tserlukevich, Y., & Vedrashko, A. (2012). The credibility of open market share repurchase signaling. <i>Journal of Financial and Quantitative Analysis</i> , 47(5), 1059-1088.	FN82	IV. EA
19	Buybacks are timed with insider purchases to send credible signal	58	Bonaimé, A. A., & Ryngaert, M. D. (2013). Insider trading and share repurchases: Do insiders and firms trade in the same direction? <i>Journal of Corporate Finance</i> , 22, 35-53.	FN81, FN82	IV. EA
19	Buybacks are timed with insider purchases to send credible signal	59	Cziraki, P., Lyandres, E., & Michaely, R. (2021). What do insiders know? Evidence from insider trading around share repurchases and SEOs. <i>Journal of Corporate Finance</i> , 66, 101544.	FN81, FN82	IV. EA
20	Issuers conduct buybacks when prices are low	15	Brav, A., Graham, J. R., Harvey, C. R., & Michaely, R. (2005). Payout policy in the 21st century. <i>Journal of Financial Economics</i> , 77(3), 483-527.	FN62, FN72, FN78, FN83	IV. EA
20	Issuers conduct buybacks when prices are low	25	Dittmar, A., & Field, L. C. (2015). Can managers time the market? Evidence using repurchase price data. <i>Journal of Financial Economics</i> , 115(2), 261-282.	FN66, FN82, FN84	IV. EA

Topic #	Citation Topic in Proposal	Study #	Study	Location (Footnote, or FN)	Section
20	Issuers conduct buybacks when prices are low	26	Ben-Rephael, A., Oded, J., & Wohl, A. (2014). Do firms buy their stock at bargain prices? Evidence from actual stock repurchase disclosures. <i>Review of Finance</i> , 18(4), 1299-1340.	FN66, FN84	IV. EA
21	Buybacks improve stock liquidity	50	Busch, P., & Obernberger, S. (2017). Actual share repurchases, price efficiency, and the information content of stock prices. <i>Review of Financial Studies</i> , 30(1), 324-362.	FN79, FN81, FN85, FN98	IV. EA
21	Buybacks improve stock liquidity	28	Cook, D. O., Krigman, L., & Leach, J. C. (2004). On the timing and execution of open market repurchases. <i>Review of Financial Studies</i> , 17(2), 463-498.	FN66, FN85	IV. EA
21	Buybacks improve stock liquidity	64	Hillert, A., Maug, E., & Obernberger, S. (2016). Stock repurchases and liquidity. <i>Journal of Financial Economics</i> , 119(1), 186-209.	FN85	IV. EA
22	SEC regulations attenuate buyback behavior	6	Bonaimé, A. A. (2015). Mandatory disclosure and firm behavior: Evidence from share repurchases. <i>The Accounting Review</i> , 90(4), 1333-1362.	FN27, FN79, FN86, FN87, FN99	II. Proposed Amendments; IV. EA
23	Liquidity declines around buybacks	65	Ginglinger, E., & Hamon, J. (2007). Actual share repurchases, timing and liquidity. <i>Journal of Banking &amp; Finance</i> , 31(3), 915-938.	FN89	IV. EA
23	Liquidity declines around buybacks	66	Brockman, P., & Chung, D. Y. (2001). Managerial timing and corporate liquidity: Evidence from actual share repurchases. <i>Journal of Financial Economics</i> , 61(3), 417-448.	FN89	IV. EA
24	Buybacks correct market undervaluation	67	Zhang, H. (2005). Share price performance following actual share repurchases. <i>Journal of Banking &amp; Finance</i> , 29(7), 1887-1901.	FN90	IV. EA
24	Buybacks correct market undervaluation	68	Drousia, A., Episcopos, A., & Leledakis, G. N. (2019). Market reaction to actual daily share repurchases in Greece. <i>Quarterly Review of Economics and Finance</i> , 74, 267-277.	FN90	IV. EA
24	Buybacks correct market undervaluation	69	Bratli, D., & Rehman, O. (2015). The price impact and timing of actual share repurchases in Norway (Master's thesis).	FN90	IV. EA
25	Disclosing buyback rationale correlates with completion rates	51	Bonaimé, A. A. (2012). Repurchases, reputation, and returns. <i>Journal of Financial and Quantitative Analysis</i> , 47(2), 469-491.	FN79, FN95	IV. EA
26	Benefits of disclosing buyback rationale may or may not be limited due by boilerplate	70	Cazier, R. A., McMullin, J. L., & Treu, J. S. (2021). Are lengthy and boilerplate risk factor disclosures inadequate? An examination of judicial and regulatory assessments of risk factor language. <i>The Accounting Review</i> , 96(4), 131-155.	FN96	IV. EA
26	Benefits of disclosing buyback rationale may or may not be limited due by boilerplate	71	Nelson, K. K., & Pritchard, A. C. (2016). Carrot or stick? The shift from voluntary to mandatory disclosure of risk factors. <i>Journal of Empirical Legal Studies</i> , 13(2), 266-297.	FN96	IV. EA

Topic #	Citation Topic in Proposal	Study #	Study	Location (Footnote, or FN)	Section
26	Benefits of disclosing buyback rationale may or may not be limited due by boilerplate	72	Campbell, J. L., Chen, H., Dhaliwal, D. S., Lu, H. M., & Steele, L. B. (2014). The information content of mandatory risk factor disclosures in corporate filings. <i>Review of Accounting Studies</i> , 19(1), 396-455.	FN96	IV. EA
27	Mandatory disclosures affect issuer behavior	73	Chuk, E. C. (2013). Economic consequences of mandated accounting disclosures: Evidence from pension accounting standards. <i>The Accounting Review</i> , 88(2), 395-427.	FN99	IV. EA
27	Mandatory disclosures affect issuer behavior	6	Bonaimé, A. A. (2015). Mandatory disclosure and firm behavior: Evidence from share repurchases. <i>The Accounting Review</i> , 90(4), 1333-1362.	FN27, FN79, FN86, FN87, FN99	II. Proposed Amendments; IV. EA
28	Decreases in information asymmetry lowers the cost of capital	74	Easley, D., & O'Hara, M. (2004). Information and the cost of capital. <i>Journal of Finance</i> , 59(4), 1553-1583.	FN100	IV. EA
28	Decreases in information asymmetry lowers the cost of capital	75	Botosan, C. A. (2006). Disclosure and the cost of capital: What do we know? <i>Accounting and Business Research</i> , 36(Sup1), 31-40.	FN100	IV. EA
28	Decreases in information asymmetry lowers the cost of capital	76	Lambert, R., Leuz, C., & Verrecchia, R. E. (2007). Accounting information, disclosure, and the cost of capital. <i>Journal of Accounting Research</i> , 45(2), 385-420.	FN100	IV. EA
29	Price impact could be disproportionate for small issuers	77	Amihud, Y., & Mendelson, H. (1986). Liquidity and stock returns. <i>Financial Analysts Journal</i> , 42(3), 43-48.	FN105	IV. EA
29	Price impact could be disproportionate for small issuers	78	Duarte, J., & Young, L. (2009). Why is PIN priced? <i>Journal of Financial Economics</i> , 91(2), 119-138.	FN105	IV. EA
30	Disproportionate impact on small issuers offset by less frequent repurchases	79	Dittmar, A. K. (2000). Why do firms repurchase stock? <i>Journal of Business</i> , 73(3), 331-355.	FN106	IV. EA
30	Disproportionate impact on small issuers offset by less frequent repurchases	54	Cheng, Y., Harford, J., & Zhang, T. T. (2015). Bonus-driven repurchases. <i>Journal of Financial and Quantitative Analysis</i> , 50(3), 447-475.	FN80, FN106	IV. EA
30	Disproportionate impact on small issuers offset by less frequent repurchases	80	Jiang, Z., Kim, K. A., Lie, E., & Yang, S. (2013). Share repurchases, catering, and dividend substitution. <i>Journal of Corporate Finance</i> , 21, 36-50.	FN106	IV. EA

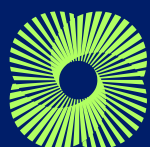
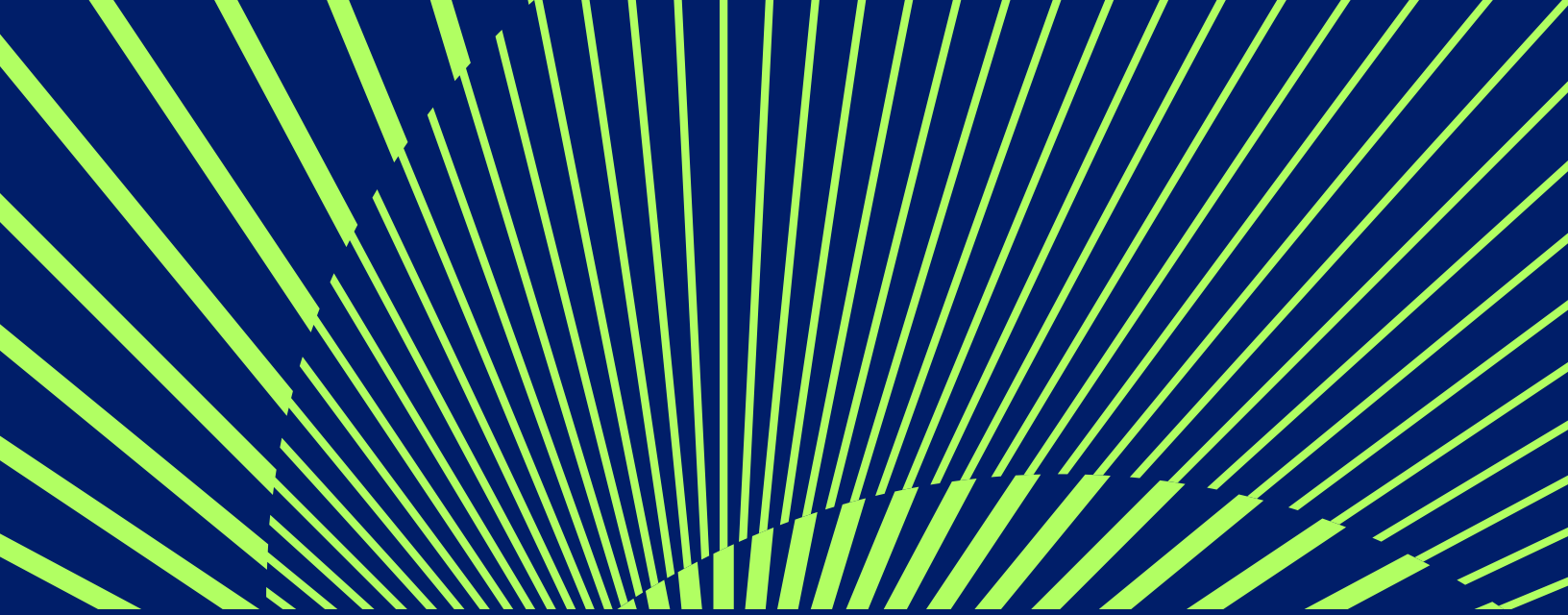


# V. Appendix B. Studies Not Cited in Proposal

Topic #	Topic in Comment Letter	Study #	Omitted Study	Section
1	Insider selling around repurchases	1	Dittmann, I., Li, A. Y., Obernberger, S., & Zheng, J. (2022). The impact of the corporate calendar on the timing of share repurchases and equity grants. Available at SSRN 4004098.	I.A.
2	Buybacks to boost executive pay	2	Fields, R.,(2016). <i>Buybacks and the board: Director perspectives on the share repurchase revolution</i> . Investor Responsibility Research Center Institute (IRRC) Institute/Tapestry Network.	I.B.
2	Buybacks to boost executive pay	3	PriceWaterhouseCoopers. (2019, July). <i>Share repurchases, executive pay and investment</i> . Report to Department for Business, Energy & Industrial Strategy, BEIS Research Paper 2019/011.	I.B.
2	Buybacks to boost executive pay	4	Bargeron, L., Kulchania, M., & Thomas, S. (2011). Accelerated share repurchases. <i>Journal of Financial Economics</i> , 101(1), 69-89.	I.B.
2	Buybacks to boost executive pay	5	Bennett, B., Bettis, J. C., Gopalan, R., & Milbourn, T. (2017). Compensation goals and firm performance. <i>Journal of Financial Economics</i> , 124(2), 307-330	I.B.
2	Buybacks to boost executive pay	6	Bens, D. A., Nagar, V., Skinner, D. J., & Wong, M. F. (2003). Employee stock options, EPS dilution, and stock repurchases. <i>Journal of Accounting and Economics</i> , 36(1-3), 51-90.	I.B.
3	Buybacks, investment, and employees	7	Fried, J., & Wang, C.C.Y. (2019, March 13). Democratic senators and the buyback boogeyman. <i>Harvard Law School Forum on Corporate Governance</i> .	I.C.
3	Buybacks, investment, and employees	8	Lazonick, W. (2014, September). Profits without prosperity. <i>Harvard Business Review</i> , 46-55.	I.C.
3	Buybacks, investment, and employees	9	Fried, J. M., & Wang, C. C. (2018). Are buybacks really shortchanging investment? <i>Harvard Business Review</i> , 96(2), 88-95.	I.C.
3	Buybacks, investment, and employees	10	Fried, J. M., & Wang, C. C. (2019). Short-termism and capital flows. <i>Review of Corporate Finance Studies</i> , 8(1), 207-233.	I.C.
3	Buybacks, investment, and employees	11	Fried, J. M., & Wang, C. C. (2021). Short-termism, shareholder payouts and investment in the EU. <i>European Financial Management</i> , 27(3), 389-413.	I.C.
3	Buybacks, investment, and employees	12	Asness, C., Hazelkorn, T., & Richardson, S. (2018). Buyback derangement syndrome. <i>Journal of Portfolio Management</i> , 44(5), 50-57.	I.C.
3	Buybacks, investment, and employees	13	Edmans, A. (2017, September 15). The case for stock buybacks. <i>Harvard Business Review</i> .	I.C.
3	Buybacks, investment, and employees	14	Edmans, A. (2020). <i>Grow the pie: How great companies deliver both purpose and profit</i> . Cambridge University Press.	I.C.
3	Buybacks, investment, and employees	15	Lewis, C. M. (2019). <i>The economics of share repurchase programs</i> . Report commissioned by the Association of Mature American Citizens.	I.C.
4	Buybacks and information asymmetry	16	Grossman, S. J., & Stiglitz, J. E. (1980). On the Impossibility of Informationally Efficient Markets. <i>American Economic Review</i> , 70(3), 393-408.	II



Topic #	Topic in Comment Letter	Study #	Omitted Study	Section
4	Buybacks and information asymmetry	17	Balakrishnan, K., Billings, M. B., Kelly, B., & Ljungqvist, A. (2014). Shaping liquidity: On the causal effects of voluntary disclosure. <i>Journal of Finance</i> , 69(5), 2237-2278	II
4	Buybacks and information asymmetry	18	Amihud, Y. (2002). Illiquidity and stock returns: Cross-section and time-series effects. <i>Journal of Financial Markets</i> , 5(1), 31-56	II
4	Buybacks and information asymmetry	19	Boone, A. L., Schumann-Foster, K., & White, J. T. (2021). Ongoing SEC disclosures by foreign firms. <i>The Accounting Review</i> , 96(3), 91-120.	II
4	Buybacks and information asymmetry	20	Lewis, C. M., & White, J.T. (2021). Corporate liquidity provision and share repurchase programs. U.S. Chamber of Commerce: Center for Capital Markets Competitiveness, Fall 2021.	II
4	Buybacks and information asymmetry	21	Core, J. E. (2001). A review of the empirical disclosure literature: Discussion. <i>Journal of Accounting and Economics</i> , 31(1-3), 441-456.	II
4	Buybacks and information asymmetry	22	Bushee, B. J., & Noe, C. F. (2000). Corporate disclosure practices, institutional investors, and stock return volatility. <i>Journal of Accounting Research</i> , 38, 171-202	II



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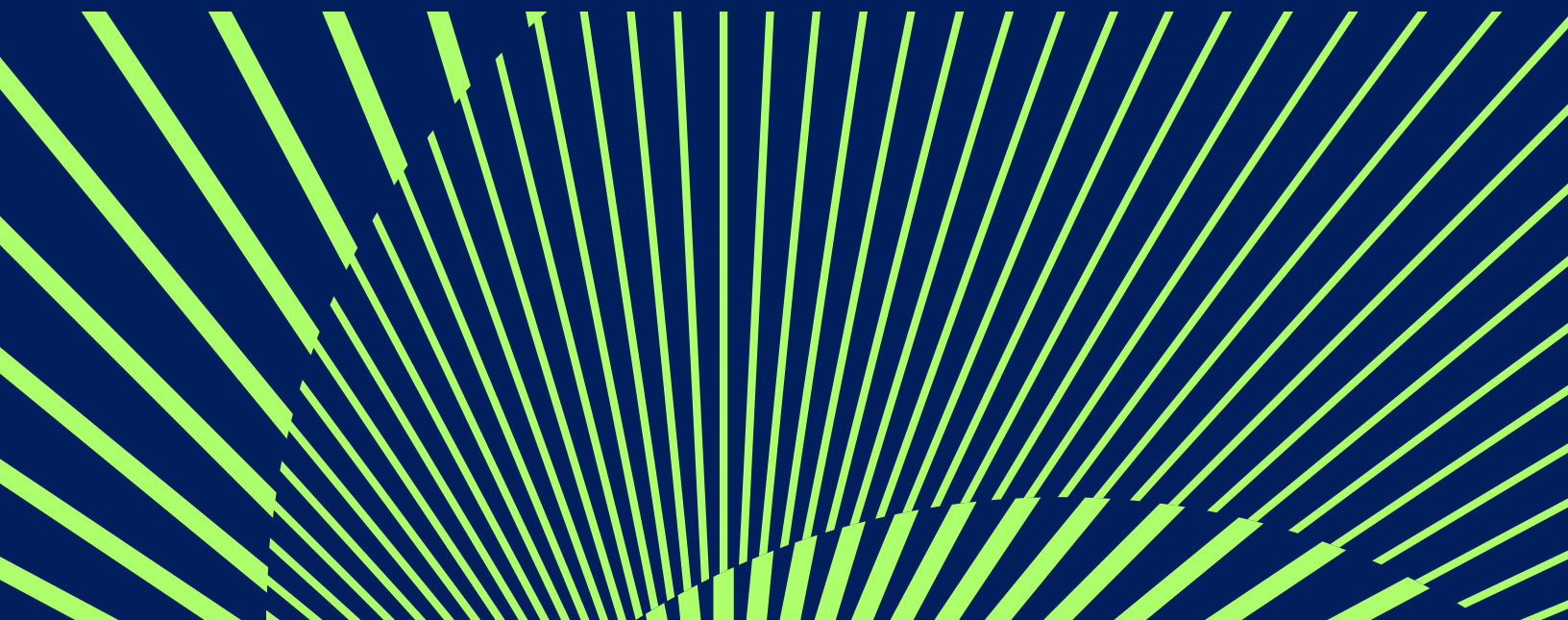
U.S. Chamber of Commerce  
Center for Capital Markets  
Competitiveness

Fall 2021 Report

Corporate Liquidity Provision &

# Share Repurchase Programs

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# Executive Summary

Corporations use stock buybacks as a means to unlock value by returning surplus cash to investors. In turn, these investors can deploy the capital to more productive uses.

The popularity of stock buyback programs has attracted significant attention from academics, policymakers, and practitioners. Some vocal opponents conjecture that stock buybacks necessarily reduce investment and harm non-investor stakeholders such as employees. Although a large body of academic literature overwhelmingly refutes these claims, such vocal criticisms persist and have led some to calls for limits via taxing stock buybacks or outright bans on open market repurchases.

In this study, we present large sample evidence showing that stock buybacks have a beneficial but often overlooked effect on stock price stabilization. Using a broad sample of over 10,000 U.S.-listed companies across a 17-year sample period of 2004 to 2020, we present strong evidence that managers strategically utilize share repurchases to increase stock liquidity and reduce volatility. The resulting stabilization in stock prices benefits all investors—including retail investors, who now account for over 20% of trading volume in U.S. equities.

Our analyses of stock buybacks have six key takeaways:

1. Greater liquidity: Companies repurchasing stock provides substantial liquidity that facilitates orderly trading and reduces transaction costs for retail investors.
2. Reduced volatility: Stock buybacks significantly reduce realized and anticipated return volatility. Imposing limitations on buyback activity would increase stock market volatility and force retail investors to bear greater amounts of downside risk.
3. Retail investors benefit: Stock buybacks generate an economically large benefit for retail investors. Since 2004, buybacks have saved retail investors \$2.1–4.2 billion in transaction and price impact costs.
4. Proactive repurchase activity: Managers utilize market-based estimates of future volatility to inform their buyback decisions. When volatility is expected to be higher, managers increase their buyback intensity to stabilize stock prices, thus reducing costs for retail investors.
5. Response to uncertainty: Studies show that economic policy uncertainty increases stock price volatility and illiquidity. Managers respond to elevated policy uncertainty by strengthening their buyback activities. Retail investors benefit from price certainty about the value of their investments during periods of greater uncertainty.
6. Strategic liquidity supplier: Managers expand stock buyback activity during critical periods when investors sell relatively large amounts of shares. Thus, managers use buybacks to actively mitigate price pressure during periods of net selling pressure.

Overall, our analyses demonstrate the beneficial impact of stock buybacks on stock liquidity and volatility. To appreciate the market stabilization benefit of buybacks, it is important to understand what stock liquidity and volatility represent. A stock is considered to be liquid if buyers and sellers can transact quickly with low price impact. Highly liquid stocks also have more stable prices and thus lower stock price volatility. Our study shows that stock buybacks enhance liquidity and lower volatility. This allows all investors—institutional and retail—to buy and sell without having a large price impact.

Stock liquidity is especially beneficial to investors during periods of greater uncertainty when, for example, some institutional investors (e.g., index funds) must transact in stocks due to fund flows in and out of their portfolio. Retail investors also benefit from more stable stock prices as it allows them to sell stocks closer to the intrinsic value even during periods of higher uncertainty. By providing price support during periods when selling pressure is relatively high, buybacks benefit investors by reducing the downside risk of their investment.

Much of the rhetoric that surrounds the current debate on stock buybacks focuses on perceived advantages conferred to wealthy shareholders. For example, U.S. Sen. Sherrod Brown, the current chair of the Senate Committee on Banking, Housing and Urban Affairs, recently commented, “Today, much of that capital is funneled back to wealthy executives in the form of stock buybacks—which used to be illegal

market manipulation—and only about 15 percent goes to the real economy.”<sup>1</sup>

Contrary to the “political” view that share repurchase programs are self-serving mechanisms for inflating executive compensation, the evidence introduced by our study overwhelmingly supports the notion that managers use stock buybacks as a market stabilizing force, especially during uncertain and volatile periods. Price stabilization is a benefit that is conferred to all shareholders, including retail investors, regardless of whether they buy and sell stock in their own accounts or participate indirectly through investment in retirement accounts. We quantify the liquidity and volatility benefits of buybacks and estimate that retail investors save \$2.1–4.3 billion during our full sample period. These benefits equate to \$126–253 million in retail investor savings per year.

Therefore, our results have important policy implications for the contemporaneous discussions on buyback activity. Based on our findings, imposing any limitations or taxes on corporate share repurchases will curb managers’ ability to supply liquidity and reduce volatility during crucial periods of uncertainty, which would ultimately harm retail investors by forcing them to incur additional transaction costs and bear greater downside risk.

1. See “Brown, Wyden unveil major new legislation to tax stock buybacks,” September 10, 2021, available at <https://www.brown.senate.gov/newsroom/press/release/brown-wyden-tax-stock-buybacks>. Sen. Brown’s comment ignores the fact that the funds directed to stock buybacks are reallocated within the economy, likely to companies that are better able to put the money to use in profitable opportunities that create even more jobs (see, e.g., Fried and Wang, 2018).

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# 1. Introduction

Corporate payouts attract significant interest from investors, lawmakers, and academics.<sup>2</sup> A debate continues to surround a specific type of payout: share repurchase programs. Proponents argue that the distribution of excess cash reserves creates incentives for managers to make efficient capital investments; signals undervalued share prices; allows investors to liquidate equity positions in a tax-efficient manner; and redirects aggregate investment capital to young, growing companies with valuable investment opportunities that should ultimately lead to job creation. By contrast, opponents argue that share repurchase plans cause artificial price inflation, lead to inadequate future investment, are an artifact of managerial short-termism, and disproportionately benefit wealthy investors and corporate insiders at the expense of employees.

This study examines the *price stabilization* role of share repurchase programs. The possibility that companies can strategically reduce volatility or provide liquidity during uncertain periods has received limited attention in the contemporaneous debate on repurchases. However, some in the media conjecture that a widespread pause in stock buyback activity can lead to market volatility.<sup>3</sup>

Several academic papers examine the link between stock buybacks and liquidity, but often focus on the liquidity role of market-makers rather than corporations

during repurchasing events. Empirical findings on this relation are dated and mixed. For example, a number of studies report a negative relation between stock repurchases and liquidity as evidenced by widening bid-ask spreads following a share repurchase announcement (e.g., Barclay and Smith, 1988; Brockman and Chung, 2001). These papers argue that market-makers demand compensation for transacting against potentially informed insiders during repurchase programs, which results in widening spreads. A second set of studies employs varying sample sizes, research designs, and sample periods, and reports small or no relation between buyback announcements and bid-ask spreads (e.g., Singh et al., 1994, Wiggins, 1994; Miller and McConnell, 1995; Franz et al., 1995).

In contrast to these findings, two studies focusing on the liquidity role of corporations through buybacks provide suggestive evidence that share repurchases can have a *beneficial* impact on stock liquidity. Cook et al. (2004) examine a sample of 64 firms that provide daily repurchase data and find some improvements in bid-ask spreads and attenuations in the price impact of order imbalances. They argue that by supplying liquidity during times when there is net selling pressure, managers can actively mitigate the price impact. Hillert et al. (2016) find similar results using a large sample of buyback activities between 2004 and 2010.

2. Throughout this study we use the terms “buybacks,” “stock buybacks,” “repurchases,” and “share repurchases” interchangeably to describe the corporate payout policy decision to repurchase equity from existing shareholders.
3. See, e.g., Erik Sherman, “Stock buybacks drop may mean more market volatility,” *Fortune*, July 3, 2019, available at <https://fortune.com/2019/07/03/share-buybacks-slowdown/>.

Motivated by the mixed findings and small or dated samples in existing studies, we revisit the relation between stock buybacks, liquidity, and volatility using a large sample of over 10,000 U.S.-listed firms over the 17-year period 2004 to 2020.<sup>4</sup> Our sample period encompasses significant changes in technology, market microstructure, and the ownership structure of U.S.-listed firms via the rise in passive indexers and retail traders. Thus, we compute a wide range of variables intended to capture multiple dimensions of buyback activities, liquidity, and volatility. We also use an econometric technique to adjust our estimates for other factors that could influence these outcomes.<sup>5</sup>

By announcing the initiation of a share repurchase program, a firm effectively notifies investors that it plans to open a window when investors can be reasonably confident that they can liquidate positions without being unduly concerned about negative price impact. Similar to Benveniste et al. (1996), we argue that share repurchase programs implicitly provide liquidating shareholders with a put option that allows them to sell at the current market price.<sup>6</sup> The benefit derived from corporate liquidity provision is similar to underwriter efforts to stabilize prices of newly listed firms immediately following initial public offerings (IPOs).<sup>7</sup> The main difference is that the firms purchase the shares in a stock buyback rather than the underwriter in an IPO. In both cases, the entity purchasing shares can strategically decide when to enter the market. The marginal benefit

of this action should be larger during periods of elevated uncertainty and when downward price pressure is the strongest.

Based on these arguments, our main prediction is that managers will repurchase shares when trading is characterized by a period of illiquidity and that strategic repurchasing will reduce stock market volatility all else equal. By limiting downside risk, buyback-induced reductions in volatility are especially beneficial to retail investors. Similarly, greater stock liquidity reduces transaction costs of investing, which benefits all shareholders, especially retail traders who tend to transact more frequently (Odean, 1999; Barber and Odean, 2000; Eaton et al., 2021).

We perform a regression analysis on several liquidity proxies and find that, as predicted, managers actively repurchase shares during periods when selling pressure is relatively high. When firms repurchase shares, their actions improve liquidity, thereby reducing transaction costs. We also find that these effects are an increasing function of buyback intensity (percentage of shares repurchased relative to shares outstanding). All of these findings are consistent with our hypothesis that share repurchase programs provide liquidity.

We next consider the impact on stock price volatility. We use three measures of volatility: historical volatility, implied volatility, and abnormal return volatility. The latter measure focuses on firm-specific

4. We start our sample in the first quarter of 2004 (1Q04) because the U.S. Securities and Exchange Commission (SEC) began requiring reporting issuers to provide quarterly disclosure of all share repurchases for issuers with fiscal periods ending on or after March 15, 2004. See SEC, Purchases of Certain Equity Securities by the Issuer and Others, Final Rule, November 10, 2003, available at <https://www.sec.gov/rules/final/33-8335.htm>.
5. Our regression models include standard control variables used in tests of liquidity and volatility, calendar-quarter fixed effects to control for time-varying factors that could influence liquidity and volatility; and industry fixed effects to control for time-invariant factors that could impact these outcomes.
6. Benveniste et al. (1996) argue that underwriter price stabilization following an initial public offering provides institutional investors with a put option as implicit compensation for revealing private information during the pre-offer period.
7. Lewellen (2006) documents that there is a substantial amount of price support in the IPO market.

risk by netting out the volatility of the overall market. We show that, regardless of the volatility metric, stock return volatility tends to be lower during periods when managers are actively repurchasing shares. Moreover, the magnitude of the volatility reduction is larger when the company repurchases a greater percentage of shares. These findings are consistent with the prediction that strategically timed share repurchases effectively provide price support by reducing the risk of stock price declines. This result does not, however, imply that repurchase programs prevent stock prices from reaching their fundamental values. Instead, it suggests that buybacks limit liquidity-induced losses and reduce transaction costs for investors.

We also provide estimates of the economic benefits to retail investors due to repurchase activity. Studies and news articles show that retail investors account for a growing portion of stock market activity in the U.S. Estimates of retail investor trading volume range from 10% to 14% before commission free trading was introduced, and more than 20% by the end of our sample period. We estimate net savings of \$2.1–4.2 billion during our sample period, most of which stems from reduced stock price volatility.

We also consider whether managers are more likely to repurchase shares during periods when near-term volatility is expected to be high relative to longer-term volatility forecasts. Using the implied volatility of short- and medium-term stock options, we predict and find that managers tend to engage in more buyback activities and strengthen the intensity of their repurchases when short-term implied volatility is relatively higher than long-term implied volatility.

We then examine periods of high political uncertainty, which prior work links to deteriorations in overall market quality and liquidity (Pasquariello and Zafeiridou, 2014). We find that when political uncertainty is high, firms with existing buyback programs are more likely to repurchase shares. We also show that firms are less likely to initiate a new buyback program during this period, perhaps due to the uncertainty of future tax or governmental policies. A graphical examination of the time series of buybacks shows that firms tend to increase the intensity of share repurchase activity just before a U.S. presidential election period. This finding is also consistent with managers using share repurchases to provide liquidity during uncertain times.

Finally, we test a “liquidity windows hypothesis” by examining whether managers alter repurchase activity during periods when institutional investors are selling more shares. We hypothesize and find that managers tend to strengthen repurchase activities when institutional selling is high. We interpret this finding as evidence that managers supply liquidity to markets by attenuating volatility pressures due to institutional selling.

Taken together, we provide substantial evidence that managers strategically use share repurchase programs to stabilize stock price and provide liquidity during periods of uncertainty. These activities mitigate share price declines and benefit the firm’s investors by reducing transaction costs and reducing downside liquidity risk. Thus, our study provides timely evidence that should be considered in the contemporaneous debate on stock

buyback activity. Based on our findings, any imposition of limits on stock buyback activity would reduce stock liquidity, elevate return volatility, and introduce risk that ultimately harms the company's investor base, which includes a substantial and growing portion of retail investors.

The rest of the paper is organized as follows: Section 2 discusses the economics of buybacks and the contemporaneous debate surrounding stock buybacks, and reviews the relevant literature. Section 3 describes the data and the metrics used in our analysis. Section 4 discusses our main results. Section 5 offers additional analyses. We conclude in Section 6.

## 2. Background Information

### A. The Economics of Buybacks

Stock buybacks are corporate payout policy decisions designed to return excess cash to shareholders. A firm that follows an optimal investment policy will first allocate capital to new and existing investments that increase firm value. Once a company invests in all projects that have a positive net present value, it will consider whether it should return any surplus cash to shareholders since further investment would likely reduce firm value. In other words, value would be reduced if firms continued to invest by directing capital to projects that earn less than the opportunity cost of capital. Rather than make value-destroying investments, firms can return surplus cash to shareholders that can then use the returned capital to invest in other companies that need to raise additional cash for investment opportunities that are value increasing.<sup>8</sup> By allowing surplus cash to find a better use, economy-wide corporate investment is more efficiently allocated.

### Share Repurchase Regulation

Prior to 1982, companies conducting open market share repurchases were subject to potential stock price manipulation penalties under Sections 9(a)(2) and

10(b) of the Securities Exchange Act of 1934 (Exchange Act). During this period, firms were effectively forced to rely on ordinary or special dividends to return surplus cash to shareholders. Since ordinary dividends are taxed as ordinary income, it results in the double taxation of corporate income since the distributed cash was generated by earnings that were already taxed at the corporate level.

Under Rule 10b-18, which the SEC adopted in 1982 and updated in 2003, firms can receive a safe harbor from liability for manipulation based solely on the timing or price of repurchases.<sup>9</sup> Importantly, managers can still violate the anti-fraud and anti-manipulation provisions of the Exchange Act if they, for example, engage in repurchases while in possession of material, nonpublic information that could impact the company's stock price. Thus, most share repurchases actively seek this safe harbor by following a standard process.<sup>10</sup>

### Share Repurchase Mechanics

Before engaging in buybacks, the board of directors must explicitly authorize and approve a formal share repurchase program. The firm then publicly discloses the repurchase program prior to its

8. It is important to note that the buyback cash paid to shareholders does not necessarily exit capital markets or the economy. Investors that tender their shares during the share repurchase program can reinvest the cash received at other companies or spend it to consume goods and services. Thus, share repurchases can have a reallocation effect by allocating capital to a more efficient use.

9. See SEC, Purchases of Certain Equity Securities by the Issuer and Others, Final Rule, November 10, 2003, available at <https://www.sec.gov/rules/final/33-8335.htm>.

10. The SEC's Division of Trading and Markets provides a set of questions and answers to assist companies in meeting the voluntary safe harbor from liability for manipulation under Rule 10b-18. See SEC, "Division of Trading and Markets: Answers to frequently asked questions concerning Rule 10b-18 ('Safe Harbor' for Issuer Repurchases)," modified December 2, 2016, available at <https://www.sec.gov/divisions/marketreg/r10b18faq0504.htm>.



commencement. This disclosure informs market participants on the timing, size, objective, and method of repurchase. Although this disclosure is not a firm commitment to repurchase shares, the market response to repurchase announcements has historically been positive, indicating that investors approve of the board's decision and view the disclosure as a credible non-binding commitment (see, e.g., Ikenberry et al., 1995; Oded, 2005; Barger et al., 2011). Over the course of an active repurchase program, firms are required to periodically report the actual shares repurchased on SEC Forms 10-Q and 10-K (and 20-F for foreign private issuers).<sup>11</sup>

There are several methods for repurchasing shares. The most common approach is called an open market repurchase (OMR) program, where the firm buys back its shares over a period that can last several months or multiple years. Academic studies (e.g., Oded, 2005; Farre-Mensa et al., 2014) have shown that OMRs constitute as much as 90% of the dollar volume of all announced repurchases. An advantage of an OMR is that a firm can determine how many shares to repurchase as a function of changing market conditions (Stephens and Weisbach, 1998; Cook et al., 2004).

Companies also employ structural buyback programs with features designed to achieve specific objectives. One example is an accelerated share repurchase (ASR) program. A firm that employs an ASR retains an investment bank to collect a large position in the firm's common stock for which the firm pays a fixed as opposed to uncertain price to repurchase.

In effect, an ASR functions much like a reverse equity issuance. In some cases, the cash used to execute an ASR comes from the issuance of new debt, which substantively increases the relative amount of debt in the firm's capital structure. ASR programs, however, are less flexible than OMR programs as managers have less flexibility to alter ASR terms once this type of repurchase program is announced (Barger et al., 2011). Other less frequently employed forms of repurchases include privately negotiated repurchases (Peyer and Vermaelen, 2005) and tender offers through a Dutch auction (Comment and Jarrell, 1991) or at a fixed price (Masulis, 1980).

### **Motivations for Repurchasing Stock**

Firms engage in stock buybacks for a number of reasons. As noted above, share repurchases are a mechanism for distributing surplus cash, which is the amount of cash left over after funding new investment opportunities. By returning surplus cash to investors, managers can attenuate the temptation to invest in negative net present value projects (i.e., projects that earn less than the opportunity cost of capital) that sub-optimally grow the size of the firm's assets.

Prior to the SEC's safe harbor for share repurchases, there was considerable evidence that some managers would use surplus cash for projects or acquisitions that increased the size of assets under their control. These actions generated managerial prestige and boosted compensation, thereby destroying firm value (Jensen, 1986).

11. In contrast to quarterly reporting of buyback activity by the firm, its insiders—defined as top executives, directors, and 10% owners—must report buys and sales within two business days after the transaction under Section 16(a) of the Securities Exchange Act of 1934. See SEC, "Exchange Act Section 16 and related rules and forms," modified August 11, 2010, available at <https://www.sec.gov/divisions/corpfin/guidance/sec16interp.htm>.



Repurchasing shares and paying dividends limits the resources under management control, thereby requiring firms to engage with capital market participants to fund new investment. Such engagement can create value by adding another layer of monitoring on corporate investment decisions. There also is strong evidence that investors negatively view surplus cash left on the balance sheet rather than being returned via payouts. For example, Dittmar and Mahrt-Smith (2007) show that the market value of \$1.00 on the balance sheet of a poorly governed firm is worth less than \$1.00. Taken together, academic evidence shows that payout surplus cash via dividends and stock buybacks is a way to unlock value.

In comparison to dividends, share repurchases have a number of additional advantages. First, share repurchases can be a more *tax-efficient* method for returning surplus cash. Consider a dividend paid to all investors simultaneously. Tax laws typically treat the dividend as ordinary income and, thus, paying a dividend triggers potential tax obligations for all investors. In the case of a share repurchase, selling shareholders will be subject to capital gains taxes. If the capital gains tax rate is lower than the ordinary income tax rate, these investors will realize a higher after-tax rate of return on their investment. Moreover, only those investors that tender shares trigger tax obligations since shareholders that do not sell defer tax obligations to a future sale date. Yet, non-selling shareholders still benefit from any corresponding increase in the stock price. On net, share repurchases allow shareholders to determine when they are exposed to personal taxes rather than imposing taxes on retail investors.

A second advantage of share repurchases is the *flexibility* for managers to adjust to changes in market conditions under an OMR program. Dividends carry the implied promise that the company will continue to pay the same or an increasing dividend. Indeed, academic evidence shows that dividend initiations are typically met with an increase in the stock price, which is often attributed to signaling confidence that future profitability will remain strong enough to pay additional dividends. For example, Kale et al. (2012) study a sample of firms initiating their first dividend after an IPO and find a 1.7% positive abnormal price response. However, dividend cuts are typically met with a strongly negative market response. For instance, Henry et al. (2017) find an average -6% stock price decline around the announcement of dividend reduction for a sample of firms during 1997 to 2015.

Several studies find a positive market response to the announcement of share repurchases, which is frequently attributed to signaling undervalued stock prices and a reduction in agency costs by reducing surplus cash (e.g., Ikenberry et al., 1995; Oded, 2005; Bargerón et al., 2011). Bargerón et al. (2020) also show that the suspension of a previously announced open market repurchase program is met with a negative stock price response, but the magnitude of the response is smaller than the response associated with dividend cuts. For example, Bargerón et al. (2020) report a -1.35% abnormal return to disclosing repurchase suspensions over 1984 to 2010, which is substantially less negative than the -6% stock price decline to dividend cuts reported in Henry et al. (2017).

Consistent with repurchases being more flexible than dividends, Stephens and Weisbach (1998) find that “quarterly repurchases are positively related to both the expected and surprise components of the firm’s quarterly cash flows, suggesting that managers adjust their stock repurchases for unexpected changes in the firm’s cash position.” They note that such adjustments would not be possible if managers had to pre-commit to specific amounts or timing in repurchases.

Firms also repurchase shares to adjust their capital structure. For firms that grant stock or issue options to employees, share repurchases help offset the dilutive impact of equity compensation. Similarly, a firm that issues stock to fund an acquisition might wish to repurchase those shares over time to achieve a target capital structure. Firms might also repurchase shares as part of a large change in their capital structure, such as the issuance of debt to repurchases shares, which is known as a leveraged buyback. When companies have slowing growth and unused debt capacity, a leveraged buyback allows firms to optimize their capital structure and avail themselves to valuable tax benefits of debt financing. Prior work (e.g., Lei and Zhang, 2016) shows that leveraged buybacks are met with both positive announcement and long-term stock returns, likely due to the dual governance effect of reducing surplus cash and additional monitoring by creditors. Thus, repurchases can be value-enhancing by reducing agency costs of equity.

## B. Contemporaneous Debate on Buybacks

### Opponents of Stock Buybacks

The popularity of share repurchase programs attracts its share of critics. Some claim that buybacks sacrifice long-term value creation that harms non-investor stakeholders. For example, Lazonick (2014) argues that share repurchases erode employee income gains, harm employment levels, limit corporate investment, and contribute to a wealth gap between investors and other Americans. Lazonick points to a statistic that, over 2003 to 2012, companies in the Standard and Poor’s S&P500 index used 54% of earnings to buy back stock and 37% to pay dividends. Lazonick (2014) notes that these high payout rates leave only 9% to invest in the future growth of companies. Similar criticisms were lodged by Lazonick et al. (2020) and echoed by prominent investors such as BlackRock’s Chairman and CEO Laurence Fink in a letter to S&P500 CEOs in 2014.<sup>12</sup>

In response to these concerns, U.S. Sens. Chuck Schumer and Bernie Sanders penned an opinion article for the *New York Times* in February 2019.<sup>13</sup> They cite the same 90% payout statistic as Lazonick (2014) and assert that managers overly focus on shareholder value rather than worker productivity or corporate resiliency. These senators argue that share repurchases are bad for U.S. workers and the long-term strength of the economy. Moreover, they claim that share repurchases constrain

12. In a letter to S&P500 CEOs, Fink states, “Too many companies have cut capital expenditures and even increased debt to boost dividends and share buybacks. We certainly believe that returning cash to shareholders should be part of a balanced capital strategy; however, when done for the wrong reasons and at the expense of capital investment, it can jeopardize a company’s ability to generate sustainable long-term returns.” See “Text of letter sent by Larry Fink, BlackRock’s Chairman and CEO, encouraging a focus on long-term growth strategies,” *Wall Street Journal*, March 21, 2014, available at <https://online.wsj.com/public/resources/documents/blackrockletter.pdf>.
13. See Schumer and Sanders, “Limit corporate stock buybacks,” *New York Times*, February 3, 2019, available at <https://www.nytimes.com/2019/02/03/opinion/chuck-schumer-bernie-sanders.html>.

company investment in research and development (R&D) and reduce firms' ability to pay their workers higher wages. In the article, the senators threaten to introduce legislation that would limit share repurchase activity by modifying the corporate tax code. In July 2019, U.S. Sen. Sherrod Brown introduced legislation seeking to curb stock buybacks by repealing the safe harbor under Rule 10b-18 and creating a "worker dividend" equal to \$1 for every \$1 million invested in stock buybacks, dividend increases, and special dividends.<sup>14</sup> In September 2021, Sens. Brown and Ron Wyden unveiled a bill titled the Stock Buyback Accountability Act that proposes a 2% excise tax on the amount of stock buybacks.<sup>15</sup>

Criticisms of stock buyback activity also surfaced during the onset of the COVID-19 pandemic. For example, in March 2020, then presidential candidate Joe Biden called upon CEOs to commit to forgo stock repurchases for a full year under the pretext that CEOs should focus on their employees and their community.<sup>16</sup> Specific restrictions on stock buybacks and dividends were also included by Congress in the text of the economic stimulus and relief acts in 2020 and 2021 as well as recently proposed legislation focusing on infrastructure investment.<sup>17</sup>

## Proponents of Stock Buybacks

Several academics have responded to criticisms of share repurchases by either highlighting logical flaws in the critiques of buybacks or noting overlooked aspects of corporate financial policies that call into question the premise that buybacks are the source of so many negative economic outcomes. We briefly summarize the rebuttal to the criticism of share repurchases below.

Fried and Wang (2018, 2019) argue that the "90% payout statistic" cited by Lazonick (2014) and U.S. Sens. Schumer and Sanders is misleading. They present empirical evidence that public companies recover about 80% of the cash distributed to shareholders by raising new equity. Thus, the net amounts of cash being returned to shareholders is less than half the amount claimed by buyback critics. Fried and Wang (2018, 2019) also argue that when critics cite the payout ratio—shareholder payouts as a percentage of net income—they fail to recognize that net income has already deducted R&D expenditures, which they estimate accounts for 25–30% of net income. They note that "net income at best is a measure of the amount available for capital expenditures (CAPEX) and additional R&D."

14. See Stock Buyback Reform and Worker Dividend Act of 2019, S.2391, 116th Cong. (2019), available at <https://www.congress.gov/bills/116th-congress/senate-bill/2391/text>.

15. See "Brown, Wyden unveil major new legislation to tax stock buybacks," September 10, 2021, available at <https://www.brown.senate.gov/newsroom/press/release/brown-wyden-tax-stock-buybacks>. A copy of the bill is available at [https://www.brown.senate.gov/imo/media/doc/stock\\_buy\\_back\\_accountability\\_act\\_bill\\_text.pdf](https://www.brown.senate.gov/imo/media/doc/stock_buy_back_accountability_act_bill_text.pdf).

16. See tweet by Joe Biden, "I am calling on every CEO in America to publicly commit now to not buying back their company's stock over the course of the next year. As workers face the physical and economic consequences of the coronavirus, our corporate leaders cannot cede responsibility for their employees. Every CEO in America should be focusing on workers, families, and communities—not executive compensation and share prices." March 20, 2020, available at <https://twitter.com/JoeBiden/status/1240998489498288129>.

17. The Coronavirus Aid, Relief, and Economic Security Act, which provided \$2.2 trillion in economic stimulus, was signed into law on March 27, 2020. The legislation provides loans and loan guarantees to businesses with the restriction that, "[U]ntil the date 12 months after the date the loan or loan guarantee is no longer outstanding, the eligible business shall not pay dividends or make other capital distributions with respect to the common stock of the eligible business." See <https://www.govinfo.gov/content/pkg/PLAW-116publ136/pdf/PLAW-116publ136.pdf>. Similar restrictions were placed on contractors and air carriers in the \$900 billion Consolidated Appropriations Act of 2021 (see <https://www.govinfo.gov/content/pkg/BILLS-116hr133enr/pdf/BILLS-116hr133enr.pdf>) and the \$1.9 trillion American Rescue Plan of 2021 (see <https://www.congress.gov/117/bills/hr1319/BILLS-117hr1319enr.pdf>).

Fried and Wang (2018, 2019) highlight the flaw in viewing stock buybacks and investments as substitutes. Their evidence indicates that firms are able to make all of the investment in CAPEX and R&D that managers deem necessary and repurchase shares out of surplus cash from net income. Thus, buybacks do not shortchange investments in the company and its employees. Similarly, buybacks do not necessarily sacrifice investments in the community because investors in general tend to invest in local companies (see, e.g., Coval and Moskowitz, 1999). Therefore, it stands to reason that funds directed to stock buybacks are more likely to be reinvested locally.

Fried and Wang (2018, 2019) conclude that shareholder payouts are not wasted from an investment or innovation perspective. Moreover, buybacks and dividends do not constrain firms' ability to invest since shareholders supply investment capital by buying newly issued shares. They also argue that limiting repurchases for public companies would make it harder to return surplus capital to investors who can reinvest in young and growing private firms, which contribute substantially to employment growth. Moreover, they argue that buybacks do not meaningfully contribute to income inequality.

Asness et al. (2018) also push back on the notion that share repurchases are harmful. In their study, they characterize the political attacks on share repurchases as "buyback derangement syndrome." They first reject claims by critics that current levels of buyback activities are abnormally high. In their analysis, they demonstrate that, when properly measured, aggregate share repurchase activity is far

below historically high levels. Moreover, when netting repurchases against debt issuance, they claim that share repurchases are essentially a "non-event" in terms of changes in capital structure. Asness et al. (2018) also argue that repurchases did not mechanically create earnings growth or stifle aggregate investment activity as critics often claim. They also contend that buybacks were not the primary cause of the stock market strength during the 2010s and that the "myths" of the buyback programs should be discarded.

Edmans (2017, 2020) systematically challenges critics' claims that companies are misappropriating corporate funds towards buybacks by reviewing several academic studies. He first points to empirical evidence showing that firms are not reducing investment at the expense of long-term value creation. In fact, he argues that this viewpoint "puts the cart before the horse" since firms first allocate money to investment based on investment opportunities that generate a return greater than the firms' cost of capital. Any remaining or "surplus" cash is then available to use for buybacks, which is supported by both empirical and survey evidence that repurchases are made out of residual cash flow after investment spending (Brav et al., 2005).

Edmans (2017, 2020) also points to studies showing that stock repurchases tend to occur when firms' growth opportunities are poor (Grullon and Michaely, 2002) or stock prices are low (Dittmar and Fields, 2015). He argues that buybacks do not necessarily weaken companies in the long term. For example, he points to studies showing that firms engaging in buybacks tend to outperform the market (Ikenberry

et al., 1995). Edmans (2017, 2020) also confronts the premise behind the critique of buybacks that “more investment is better than less investment.” He notes that a fundamental principle of finance is that value is created only if the returns from investment are higher than other projects that shareholders could invest in.

Edmans warns that restrictions on repurchases could harm the economy as it would incentivize companies to “empire build” by investing the capital to sub-optimally grow the size of the firm. Limiting or taxing buybacks would also damage the ability to efficiently reallocate money to young, smaller companies that fuel growth and employment (see, e.g., Fried and Wang, 2018). He also notes that repurchases increase the ownership percentages of insiders such as the CEO, which further aligns their stakes with shareholders.

Given that numerous academic studies refute the claims that buybacks are leading to short-termism that deprives public firms of investment capital and harms stakeholders, it is puzzling that the negative buyback rhetoric continues to persist as part of the political dialogue. In other words, how does one reconcile that some politicians continue to seek ways to limit buyback activity by pointing to claims of short-termism that are not backed up by the preponderance of scientific studies?

To shed light on this phenomenon, Roe and Shapira (2020) examine the power of narrative in corporate lawmaking. They note that “short-termism” is a powerful and persistent narrative of a seemingly dichotomous managerial choice of investing for the short versus long term, which is not true. This narrative argues that market forces encourage short-term actions such as buybacks that necessarily sacrifice long-term value creation and ultimately damage the economy. The narrative is powerful due to forces such as its connotation of good versus bad and psychological tendencies such as confirmation bias by those wishing to limit or tax corporate actions. Roe and Shapira (2020) warn that politicians can use the narrative of short-termism to push for limits on company actions that are not justified by the data, which will inevitably result in sub-optimal policymaking.

## C. Buybacks, Liquidity, and Volatility

In this subsection, we review academic literature linking elements of buyback activity to stock liquidity or volatility.<sup>18</sup> Existing studies provide mixed evidence as to whether stock buybacks increase or decrease stock liquidity.

Theoretically, there are several reasons why share repurchase activity could impact liquidity. For example, one implication of the seminal theory on payout by Miller and Modigliani (1961) is that trading

18. Other prior work focuses on the liquidity of the company rather than the liquidity of its stock. For example, Stephens and Weisbach (1998) show that quarterly repurchase activity is positively related to the expected and surprise components of cash flows. This finding implies that managers adjust their repurchase activity when they experience unanticipated changes in their cash holdings (i.e., have fewer liquid assets to use for repurchases). Consistent with this notion, Bargeron et al. (2011) note that, in comparison to OMR buyback programs, ASR programs reduce the flexibility of managers to alter buybacks in response to unexpected shocks to cash flow. Moreover, they note that similar arguments apply to changes in stock price or liquidity after the buyback program is announced. The lack of flexibility is likely one reason that firms buy back greater amounts of stock through OMR rather than ASR programs. Manconi et al. (2019) examine buyback activity around the world and show that buybacks create long-term shareholder value, especially in countries with poor stock market liquidity. However, shareholder returns crucially depend on the liquidity of equity markets. They note that average stock liquidity is the only country-level characteristic that is robustly related to long-term abnormal stock returns, indicating that investors might underreact in the near-term to the positive information contained in buyback announcements.



frictions, such as liquidity costs, could impact firms' payout policy decisions. Similar to the role of underwriters in IPOs (see, e.g., Benveniste et al., 1996), share repurchase activity could contribute to price stabilization, thereby increasing liquidity and reducing volatility by allowing existing and large shareholders to sell at the current market price. However, Holden et al. (2014) note that repurchases could negatively impact liquidity by simply reducing the number of shares traded in the market.

Holden et al. (2014) note that repurchases could also influence liquidity indirectly if they alter the behavior of market-makers, who are key suppliers of market liquidity. This influence will depend on whether market-makers perceive repurchase activities as informed trading by corporate insiders. On the one hand, buybacks could reduce liquidity if market-makers demand compensation for transacting against informed insiders. In this case, market-makers could widen the spread to compensate for their opportunity cost of time and invested capital. On the other hand, share repurchases could induce competition amongst market-makers, who supply liquidity, thereby having a positive impact on liquidity.

Empirical evidence on the relation between buybacks and liquidity is mixed as existing studies document positive, negative, and negligible effects on liquidity. Cook et al. (2004) find a positive relation between buybacks and liquidity. They posit that firms can provide liquidity and lower their capital costs through OMR trades during periods of low trading volume or higher selling pressure. For example, they argue that firms can directly impact quoted bid-ask spreads by placing a limit order to buy

shares if the price declines to a certain level. Cook et al. (2004) study buyback activity during 1993 and 1994 for a sample of 64 firms that respond to a questionnaire about buyback activities. Using intra-day trading data, they find that repurchases positively influence liquidity by narrowing bid-ask spreads and attenuating the price impact of order imbalances on days when repurchase trades are completed.

More recently, Hillert et al. (2016) also find a positive relation between share repurchases and liquidity using a sample of companies over 2004 to 2010. Using an instrumental variables approach, these authors report that stock buyback intensity reduces bid-ask spreads and other measures of stock illiquidity. Moreover, they find that firms use buybacks to provide price support via contrarian trading strategies, such as increasing buyback intensity when order imbalances and short selling interest is higher, both of which put downward pressure on stock prices. Thus, these studies provide initial evidence suggesting that firms repurchase stock to provide liquidity.

Other studies find a negative relation between buybacks and liquidity. For example, Barclay and Smith (1988) find that bid-ask spreads widened after stock repurchase announcements during 1983 to 1986. They argue that the widening of bid-ask spreads reflects actions by market-makers to increase compensation for transacting against informed company insiders. Consistent with these findings, Brockman and Chung (2001) also find that buyback activity significantly reduces stock liquidity. They study repurchases by companies listed on the Stock Exchange of Hong Kong, which uniquely requires listed firms to disclose all repurchases

by the start of the next business day. Brockman and Chung (2001) find that bid-ask spreads widen on days when share repurchases are executed versus non-repurchase days. They conclude that buyback activities impose a cost in the form of lower liquidity. Similar findings are reported by Ginglinger and Hamon (2007) for a sample of 352 firms listed in France.

Other studies find negligible evidence of share repurchase announcements influencing stock liquidity. For example, Singh et al. (1994) match a sample of 181 OMR announcements over 1984 to 1990 to a control sample of non-repurchasing firms with similar market capitalizations. They present regressions that fail to uncover differences in bid-ask spreads around the announcement date. Wiggins (1994) studies a sample of 195 repurchase announcements over 1988 to 1990 and finds a negligible decline rather than increase in spreads and no evidence of a shift in depths following the announcement of repurchases. Similarly, Miller and

McConnell (1995) study 248 repurchase announcements over 1984 to 1988 and find no relation between repurchases and bid-ask spreads. Franz et al. (1995) study 157 buyback announcements over 1983 to 1987 and find a decline in bid-ask spreads after adjusting for dealers' order-processing and inventory-holding costs.

Taken together, existing research is mixed on whether one might expect a positive or negative relation between buyback activity and measures of stock liquidity. Many of the existing studies examine non-U.S.-listed firms or utilize small or older sample periods that predate changes in SEC rules, technology, and the rise of passive indexing and retail investors. Moreover, there is sparse literature on the influence between stock buybacks and volatility. Thus, we revisit the relation between buybacks, liquidity, and volatility for a large cross-section and time series of over 10,000 firms across 17 years. We also use a wide range of measures of liquidity and volatility that we define in the next section.



# 3. Sample and Research Design

## A. Buybacks and Sample Selection

We construct our sample by first downloading all firms in the Center for Research in Security Prices (CRSP)/Compustat merged databases from Wharton Research Data Services over 2004 to 2020. We begin our sample in the first quarter of 2004 because this period coincides with the December 2003 effective data of SEC rules requiring companies to report quarterly share repurchase activity. Thus, Compustat’s full coverage of the number of shares repurchased each quarter begins in 2004. After dropping firms with missing values for our measures of stock liquidity, the final sample includes 10,928 unique firms and 340,327 firm-quarters.

### Buyback Activity

We construct two measures of buyback activity. First, we create an indicator variable, buyback active (*BB\_ACTIVE*), that equals 1 if a firm repurchases any shares during a quarter, and otherwise 0. Thus, *BB\_ACTIVE* is meant to proxy for the *extent* of buyback activity during the quarter. Second, we measure the *intensity* of buyback activity by dividing the number of shares repurchased during the quarter by the shares outstanding at the end of the prior quarter, which we label *BB\_PCTOUT*. For firms with missing information on buyback activity, we assume they repurchased zero shares during the quarter. In regression estimates, we take the natural log of 1 plus the ratio of shares repurchased to shares outstanding, to normalize this measure.

### Buyback Disclosure

We also capture buyback disclosure using data from the S&P Capital IQ–Key Developments (CIQ-KD) database. The CIQ-KD database contains summaries of events and news that could have a material impact on stock prices. We retain all news events related to share repurchases. We then classify news on buyback programs into three categories: announcements, updates, and expansions.

To identify announcements of new buyback programs, we retain all news events with event identification numbers 36 (“Buybacks”), 152 (“Potential Buybacks”), and 232 (“Buyback Transaction Announcements”) in the CIQ-KD database. A random sample of these events shows that they tend to correspond to the announcement of a new buyback plan, firms seeking board or shareholder approval of a buyback plan, or board authorization of a new buyback plan. We create a variable, *BB\_ANNOUNCE*, that equals 1 for firms with any of these three event types during a calendar-quarter, and otherwise 0.

To detect updates on quarterly share repurchases, we retain event identification number 231 (“Buyback Tranche Update”) in the CIQ-KD database. This event reflects disclosures of buyback activity from a previously announced repurchase program. The event type almost always reports the quarter of reporting, the number of shares repurchased, and often the repurchase price or percentage of repurchase program

that is complete. We generate an indicator variable, *BB\_UPDATE*, that equals 1 if a firm provides at least one disclosure of this event type during the quarter, and otherwise 0.

We also measure buyback expansions, which are event identification number 230 (“Buyback—Change in Plan Terms”) in the CIQ-KD database. We analyze a random sample of these disclosures and find they mostly reflect an extension of time to repurchase shares under an existing program or an increase in the authorized number of shares they can repurchase. We generate the indicator variable, *BB\_EXPAND*, that equals 1 if any of these event type disclosures are made during a quarter, and otherwise 0.<sup>19</sup>

## B. Measures of Stock Liquidity

The academic literature designates a stock as having higher liquidity if market participants can quickly trade large quantities at a low cost with little price impact (Liu, 2006). Thus, stock liquidity is a function of trading quantity, speed, cost, and price impact. Given that stock liquidity is highly dimensional, prior researchers have employed a number of metrics to capture these properties.

### Amihud Illiquidity

Amihud (2002) introduces a measure of stock illiquidity that is among the most widely used measures of trading cost-based liquidity in the academic literature (Le and Gregoriou, 2020). Amihud’s (2020) illiquidity (*ILLIQ*) measure is a

return-to-volume metric that captures the sensitivity of daily stock price movements per \$1 of trading volume. Thus, it captures the price impact of stock trading. It is calculated in Equation (1) as follows:

$$ILLIQ_{it} = \frac{1}{D_{it}} \sum_{d=1}^{D_{it}} \frac{|R_{idt}|}{Dvol_{idt}}$$

where *ILLIQ* is the illiquidity ratio of stock *i* in period *t*, *D<sub>it</sub>* is the number of trading days in the period *t* for stock *i*, *|R<sub>idt</sub>|* is the absolute value of the daily return for stock *i* on day *d* in the period *t*, and *Dvol<sub>idt</sub>* is dollar trading volume for stock *i* on day *d* in the period *t*. We average *ILLIQ* over calendar-quarters during our sample period. Higher values of *ILLIQ* indicate that the stock is less liquid because the return to trading volume is higher.

In comparison to other liquidity measures, *ILLIQ* has the advantages that it is both widely available for all stocks with basic trading data and captures the effects of trading volume on stock price movements. Thus, *ILLIQ* reflects transaction costs (Acharya and Pedersen, 2005). Some work criticizes *ILLIQ* by arguing that the volume effect on stock returns is caused by mispricing and not compensation for illiquidity (Lou and Shu, 2017). Others note that *ILLIQ* suffers from a size bias due to the positive correlation between trading volume and market capitalization (Cochrane, 2005). Thus, in the case of two stocks with identical returns, the one with a smaller market capitalization will mechanically have a higher value of *ILLIQ*. Amihud’s *ILLIQ* also ignores time-series and cross-sectional variation in trading frequency.

19. The CIQ-KD database also contains event types 234 (“Buyback Transaction Closings”) and 233 (“Buyback Transaction Cancellations”), which are present in 3.96% and 0.02% of sample quarters, respectively.

## Bid-ask Spread

Another set of liquidity measures reflects the costs associated with executing a stock trade. One of the most popular and strongest transaction costs measures of liquidity utilizes the spread of the bid and ask price for stocks (Fong et al., 2017). Prior work notes that bid-ask spreads reflect three dimensions of trading costs: order processing costs, information asymmetry, and inventory costs (Demsetz, 1968; Stoll, 1978; Ho and Stoll, 1981).

We measure bid-ask spreads as the closing percentage quoted spread (*SPREAD*) introduced by Chung and Zhang (2014). It is estimated using daily closing bid and ask prices and is calculated in Equation (2) as follows:

$$SPREAD_{it} = \frac{1}{D_{it}} \sum_{d=1}^{D_{it}} \frac{Closing\ ask_{idt} - Closing\ bid_{idt}}{(Closing\ ask_{idt} - Closing\ bid_{idt})/2}$$

where  $SPREAD_{it}$  is the closing percentage quoted spread of stock  $i$  in the period of time  $t$ ,  $D_{it}$  is the number of trading days in time  $t$ , and  $Closing\ ask_{idt}$  and  $Closing\ bid_{idt}$  are the closing ask and bid prices of stock  $i$  on day  $d$ , respectively. Stocks with higher values of *SPREAD* are considered to be less liquid.

## Dollar Trading Volume

Trading volume-based measures of liquidity utilize the number of stock transactions to identify whether the security is more or less liquid. We use two standard measures of trading volume: dollar trading volume and stock turnover. Trading volume-based measures are intuitively linked to bid-ask spreads since a stock transaction will execute only when the bid and ask price overlap. Thus, larger bid-ask spreads imply potentially lower trading volume. However, trading volume can also impact bid-ask spreads. Easley and O'Hara (1992) argue that greater trading volume leads to larger spreads due to the information component of the bid-ask spread.

Dollar trading volume (*DVOLUME*) is the value of traded shares between buyers and sellers. Prior work shows that trading volume is a significant determinant of the liquidity component of stock prices (O'Hara, 2003) and impacts the cost of holding stocks for broker-dealers (Stoll, 1978). It is calculated in Equation (3) as:

$$DVOLUME_{it} = \sum_{j=1}^n P_{ikt} \times Vol_{ikt}$$

where  $DVOLUME_{it}$  is the dollar trading volume of stock  $i$  over the period of time  $t$ . It is computed as the sum of the dollar value of  $n$  transactions of stock  $i$  during period  $t$ .  $P_{ikt}$  and  $Vol_{ikt}$  are the price and quantity of stock  $i$  for transaction  $k$  at the time period  $t$ , respectively. Stocks with higher *DVOLUME* are considered to be more liquid. *DVOLUME* is widely used as a proxy for liquidity in the academic literature (e.g., Lee, 1993; Chordia et al., 2001).

## Stock Turnover Ratio

Another trading volume-based measure of stock liquidity is the turnover ratio (*TURN*). This measure is calculated as the number of traded shares divided by the number of shares outstanding in Equation (4) as follows:

$$TURN_{it} = \frac{1}{D_{it}} \sum_{d=1}^{D_{it}} \frac{Vol_{idt}}{Shrout_{idt}}$$

where  $TURN_{it}$  is the turnover ratio of stock  $i$  during the period of time  $t$ ,  $D_{it}$  is the number of trading days, and  $Vol_{idt}$  and  $Shrout_{idt}$  are the daily number of shares trading and shares outstanding of stock  $i$ , respectively. Prior work (e.g., Easley and O'Hara, 1992) shows that *TURN* reflects market information from trading and thus impacts stock liquidity. Moreover, since *TURN* accounts for the market capitalization of stocks, it is likely a superior trading volume-based measure of stock liquidity when compared to *DVOLUME*.

## Zero Return Days

One drawback of liquidity measures such as *ILLIQ* is that they do not account for days without trading, which likely reflects important dimensions of illiquidity (Le and Gregoriou, 2020). Thus, we compute an additional measure of liquidity based on the number of trading days with zero returns. In Equation (5), we follow Lesmond et al. (1999) by computing the ratio of the number of days with zero return divided by the total number of observable trading days (*ZEROS*):

$$ZEROS_{it} = \frac{Zero\ daily\ returns_{it}}{D_{it}}$$

where  $ZEROS_{it}$  is the ratio of the number of days with returns equal to zero for stock  $i$  during the period of time  $t$ , *Zero daily returns<sub>it</sub>* is the number of zero return days of stock  $i$  over time  $t$ , and  $D_{it}$  is the number of available trading days.

Stocks with higher values of *ZEROS* are considered less liquid. This measure is based intuitively on difficulties in trading highly illiquid stocks, higher transaction costs, and periods when investors with private information are less likely to trade (Lesmond et al., 1999; Lesmond, 2005). Prior work confirms that *ZEROS* is a strong proxy for stock liquidity (Goyenko et al., 2009).

## C. Measures of Volatility

We compute three proxies of volatility, two of which are historical measures based on realized changes in stock prices using data from CRSP. Stock return volatility (*RETVOL*) is the standard deviation of daily stock returns over the calendar-quarter. We also compute abnormal stock returns by subtracting out the daily returns of the CRSP value-weighted index. We then estimate abnormal stock return volatility (*ARETVOL*) as the standard deviation of abnormal daily returns over the calendar-quarter. Higher values of *RETVOL* and *ARETVOL* indicate greater realized return volatility. We annualize both measures by *multiplying by  $\sqrt{252}$* .

For our third measure, we ascertain implied volatility (*IVOL*) derived from the prices of stock options. These data are obtained from the OptionMetrics Standardized Options database. Following Goyal and Saretto (2009), we average the implied volatilities of the call and put contracts that are closest to at-the-money (ATM) and are one month to maturity (30 days). Higher values of *IVOL* indicate that, over the life of the option, the market expects larger changes in the underlying stock price.

Tests of stock return volatility focus on a subsample of 340,215 firm-quarters. A subsample of 194,222 firm-quarters has data on implied volatility during 2004 to 2020.

# 4. Main Results

## A. Summary Statistics

In Table 1, we present summary statistics. Firms actively repurchase shares in 27.8% of firm-quarters during our sample period. The average firm repurchases 0.3% of

shares outstanding each quarter. When conditioning on non-zero repurchase activity, sample firms repurchase an average of 1.1% of shares outstanding each quarter. We discuss time trends in buybacks in the next subsection.

	Mean	Median	Standard Deviation	Firm Quarters
<b>Buyback Activity</b>				
<i>BB_PCTOUT</i>	0.003	0.000	0.020	340,327
<i>BB_PCTOUT (non-zero)</i>	0.011	0.005	0.037	94,776
<i>BB_PCTOUT (log-transformed)</i>	0.003	0.000	0.013	340,327
<i>BB_ACTIVE</i>	0.278	0.000	0.448	340,327
<b>Buyback Disclosure</b>				
<i>BB_ANNOUNCE</i>	0.053	0.000	0.224	340,327
<i>BB_UPDATE</i>	0.267	0.000	0.442	340,327
<i>BB_EXPAND</i>	0.017	0.000	0.129	340,327
<b>Stock Liquidity</b>				
<i>ILLIQ</i>	0.191	0.001	0.955	340,327
<i>SPREAD</i>	0.009	0.002	0.018	340,327
<i>DVOLUME (\$ millions)</i>	35.700	3.196	185.135	340,327
<i>DVOLUME (log-transformed)</i>	14.746	14.977	2.706	340,327
<i>TURN</i>	0.659	0.361	9.467	340,327
<i>TURN (log-transformed)</i>	-1.163	-1.019	1.192	340,327
<i>ZERO</i>	0.033	0.016	0.047	340,327
<b>Volatility</b>				
<i>RETVOL</i>	0.499	0.395	0.435	340,219
<i>ARETVOL</i>	0.467	0.362	0.430	340,219
<i>IVOL</i>	0.474	0.408	0.257	194,222
<b>Firm Characteristics</b>				
<i>SIZE</i>	6.637	6.630	2.223	340,327
<i>LEVERAGE</i>	0.227	0.170	0.227	340,327
<i>MTB</i>	1.597	1.082	1.761	340,327
<i>ROA</i>	-0.002	0.010	0.064	340,327
<i>CASH</i>	0.202	0.097	0.241	340,327
<i>DIVIDENDS</i>	0.003	0.000	0.006	340,327
<i>R&amp;D</i>	0.013	0.000	0.031	340,327
<i>FOROPS</i>	0.370	0.000	0.483	340,327
<i>ANALYSTS</i>	4.640	2.000	6.200	340,327
<i>RANALYSTS</i>	0.002	-0.132	1.000	340,327

	Mean	Median	Standard Deviation	Firm Quarters
<i>OPTIONS</i>	0.011	0.001	0.028	340,327
<i>S&amp;P500</i>	0.099	0.000	0.299	340,327
<b>Uncertainty Measures</b>				
<i>HIEXPVOL</i>	0.500	1.000	0.500	187,192
<i>EPU</i>	0.135	0.126	0.063	340,327

Table 1: Summary Statistics

In terms of disclosure, 5.3% of firm-quarters have a new buyback announcement, which includes either plans for the board to vote on a share repurchase program or announcing that the board has approved a new program. We find that 26.7% of firm-quarters include a buyback disclosure update on the number of shares repurchased and the average repurchase price. Approximately 1.7% of firm-quarters include a disclosure to expand the duration or size of the previously announced repurchase program.

Table 1 also provides sample statistics on our key measures of liquidity and volatility. Recall that each of these measures is estimated at the daily level and then averaged across the calendar-quarter. Sample firms have an average daily Amihud illiquidity value of 0.19 and average (median) bid-ask spread of 90 (20) basis points. The average firm has \$35.7 million in daily trading volume and its stock turns over 0.66 times each day. The average sample firm has 3.3% of trading days each quarter with zero returns. The standard deviation of daily stock returns is just over 3%, which annualizes to just under 50%. Table 1 shows similar estimates of abnormal stock return volatility and implied volatility, as the average firm has an annualized average of 47% for both measures.

Across firm characteristics, the median firm has 17% debt, a return on assets close to 1%, and approximately 10% of assets in cash. These firms invest an average of 1.3% of assets in quarterly R&D, pay an average of 0.3% of assets in quarterly cash dividends, and have an average (median) market-to-book value of 1.6 (1.1). Approximately 37% of sample firms have foreign operations and the average (median) firm has 4.6 (2) analysts providing quarterly earnings forecasts. Approximately 10% of sample firms are included in the S&P500 index.

## B. Time Trends in Buybacks

### Full Sample Repurchase Activity

Figure 1 shows the time-series trend for both measures of buyback activity over the full sample period. In this figure, quarterly buyback intensity (*BB\_PCTOUT*) is depicted using bars that correspond to the left y-axis. The percentage of firms actively repurchasing shares (*BB\_ACTIVE*) is depicted as a line graph whose scale is provided on the right y-axis.



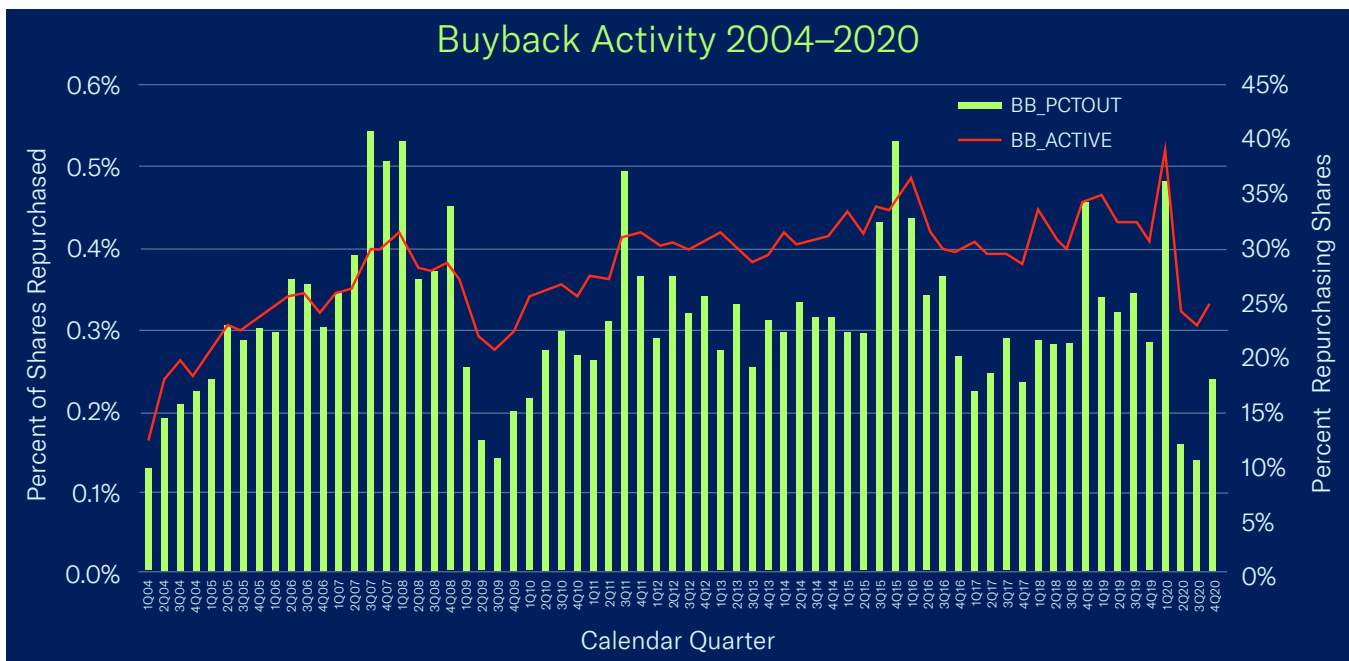


Figure 1: Buybacks over time

The plots show that both measures of buyback activity increase from 2004 to 2007. Buybacks decline during the financial crisis of 2008 and bottom out in 3Q09 before increasing again. These patterns likely correspond to periods when firms have surplus cash that can be returned to investors.

Buyback intensity spikes during 1Q08, 3Q11, 4Q15, 4Q18, and 1Q20, which tend to align with the approximate start of presidential election years. These patterns motivate us to conduct additional analyses of presidential elections in Subsection 5.2.

The presence of buyback activity increases over 1Q04 to a peak of 32% in 1Q08, before falling to 21% in 3Q09. Buyback activity increases again and peaks at 36% in 1Q16, then oscillates before it reaches a high of 39% in 1Q20.

Buyback activity fell precipitously in 2Q20 to 23%, which is a decline of over 40% from the prior quarter, likely due to the onset of the COVID-19 pandemic.

### Repurchase Activity by S&P500 Index Membership

Prior academic literature shows that buyback activity varies based on factors such as firm size and profitability (e.g., Bhattacharya and Jacobsen, 2016). Thus, in Figures 2 and 3, we further analyze time-series variation in buyback activity by partitioning our sample based on whether the firm is a member of the S&P500 index. S&P determines the constituents of the S&P500 index, which includes large capitalization stocks.<sup>20</sup>

20. A discussion of the index methodology is provided by S&P in “S&P U.S. indices methodology,” June 2021, available at <https://www.spglobal.com/spdji/en/documents/methodologies/methodology-sp-us-indices.pdf>.

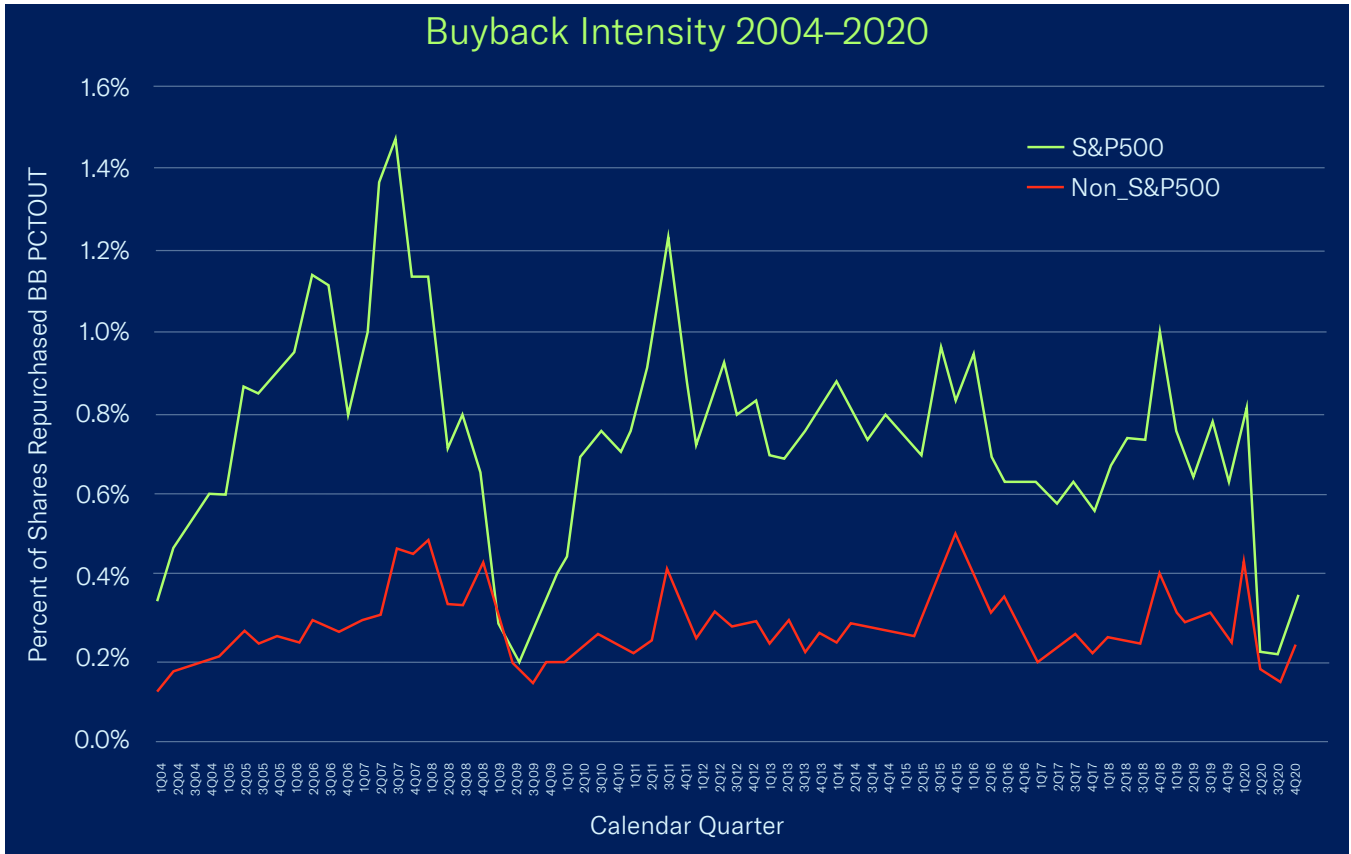


Figure 2: Share buyback intensity for S&P500 and non-S&P500 firms

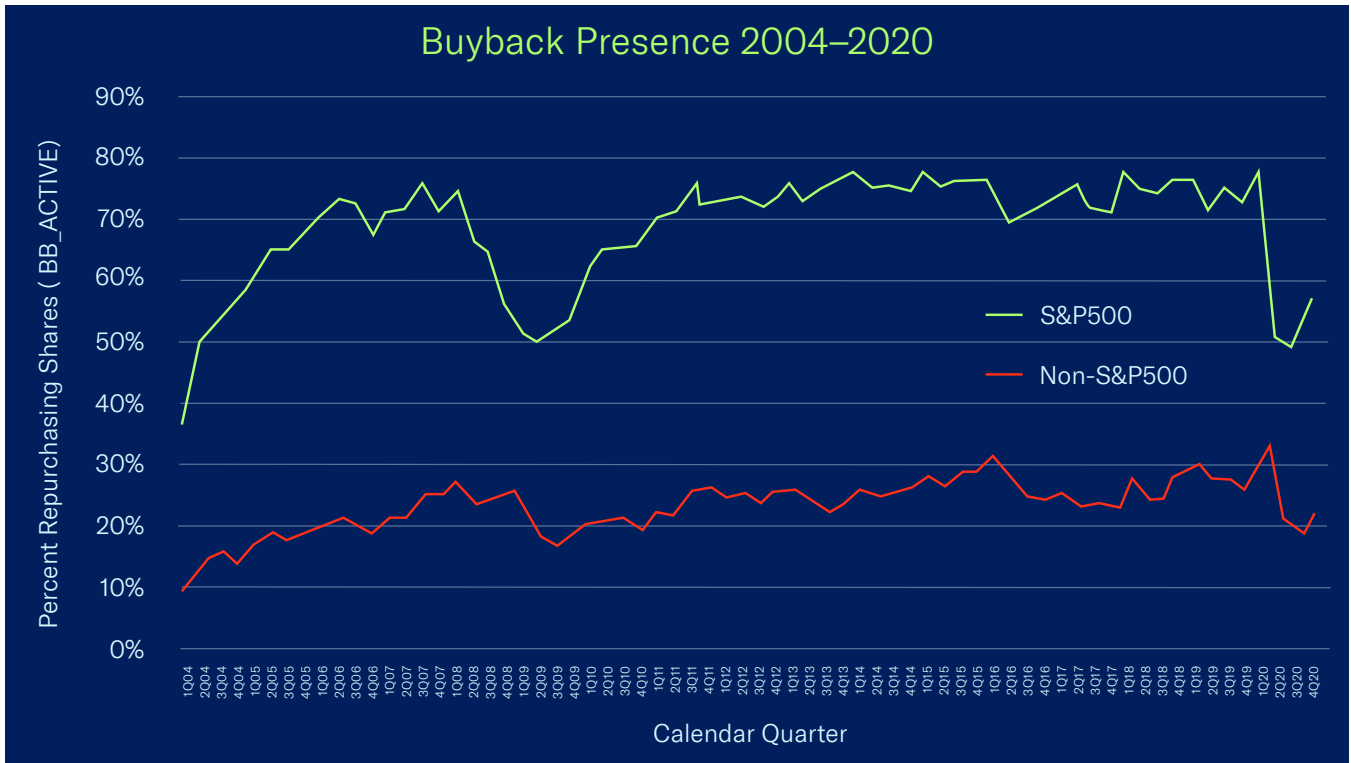


Figure 3: Share buyback presence for S&P500 and non-S&P500 firms

Figure 2 shows that variation in buyback intensity (*BB\_PCTOUT*) over time is substantially higher for firms that are members of the S&P500. For example, increases in buyback activity during 2004 to 2007 and 2009 to 2011 are more pronounced for S&P500 members. Similarly, the proportional decline in buyback activity during 2008 to 2009 and in early 2020 are stronger for S&P500 index members.

Figure 3 shows similar trends for the percentage of firms actively repurchasing shares (*BB\_ACTIVE*). For the full sample, the average percentage of repurchasing shares is 69% for S&P500 members and 23% for non-S&P500 members. These differences likely reflect substantial differences in variation in surplus cash, as larger and profitable firms, such as members of the S&P500, tend to generate

greater amounts of free cash flow. This graph reinforces the notion that younger, smaller firms need cash for investment and R&D and have less surplus cash for buyback investment than older, larger firms that tend to compose the S&P500.

### Payouts Over Time

Firms can pay out surplus cash via dividends or stock buybacks. Prior literature points to the flexibility of share repurchases as one of their desirable traits versus dividends (e.g., Brav et al., 2005). In Figure 4, we plot time-series variation in buybacks and dividends as a percentage of net income. Figure 4 shows that stock repurchase exhibits substantially more variation than dividends, especially during periods when profitability are higher (e.g., 2007) or lower (e.g., 2009).

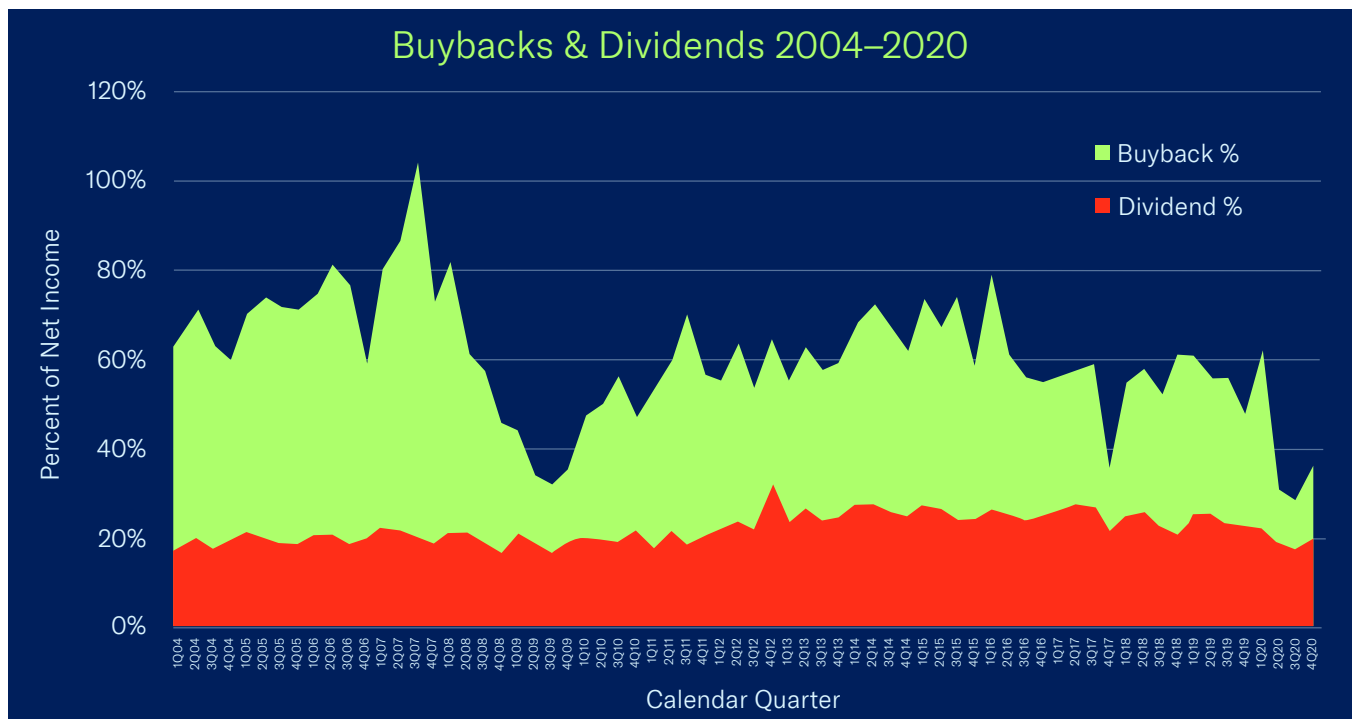


Figure 4: Payouts over time

## C. Correlation of Buybacks with Stock Liquidity and Volatility

We present a pairwise correlation matrix of our buyback, liquidity, and volatility measures in Table 2. Columns (1) and (2) provide initial evidence that buyback activity is correlated with lower levels of stock illiquidity and volatility. For example, the presence of buyback activity in a calendar-

quarter is correlated with 15.4% lower bid-ask spreads, on average, and a 17% reduction in stock return volatility in Column (2), both of which are statistically different from zero at the 5% level or better. Moreover, Column (3) shows that the measures of liquidity and volatility are highly, but not perfectly, correlated with each other. Thus, each of these measures likely reflects unique dimensions of liquidity and volatility.

	<i>BB_PCTOUT</i>	<i>BB_ACTIVE</i>	<i>ILLIQ</i>	<i>SPREAD</i>	<i>DVOLUME</i>	<i>TURN</i>	<i>ZERO</i>	<i>RETVOL</i>	<i>ARETVOL</i>	<i>IVOL</i>
<i>BB_PCTOUT</i>	1.0000									
<i>BB_ACTIVE</i>	0.2502*	1.0000								
<i>ILLIQ</i>	-0.0172*	-0.0706*	1.0000							
<i>SPREAD</i>	-0.0360*	-0.1541*	0.6890*	1.0000						
<i>DVOLUME</i>	0.0770*	0.3016*	-0.3876*	-0.6155*	1.0000					
<i>TURN</i>	0.0448*	0.0839*	-0.3320*	-0.4554*	0.6867*	1.0000				
<i>ZERO</i>	-0.0363*	-0.1614*	0.2668*	0.4056*	-0.5408*	-0.3930*	1.0000			
<i>RETVOL</i>	-0.0354*	-0.1660*	0.2303*	0.4257*	-0.2224*	0.1500*	0.0987*	1.0000		
<i>ARETVOL</i>	-0.0400*	-0.1868*	0.2562*	0.4663*	-0.2765*	0.1072*	0.1480*	0.9891*	1.0000	
<i>IVOL</i>	-0.0624*	-0.2577*	0.0509*	0.4900*	-0.4382*	0.2240*	0.2244*	0.7447*	0.7431*	1.0000

Table 2: Correlation Matrix

## D. Buybacks and Liquidity

In this subsection, we formally test the relation between buyback activity and stock liquidity by estimating the following equation using ordinary least squares (OLS) regressions in Equation (6):

$$Liquidity_{it} = \alpha + \beta_1 Buyback_{it} + X_{it} + Industry\ FE + Time\ FE + \epsilon_{it}$$

where each of the liquidity *measures* (*ILLIQ*, *SPREAD*, *DVOLUME*, *TURN*, *ZERO*) of stock *i* during the calendar-quarter *t* are tested separately as the dependent variables. The variable of interest, *Buyback<sub>it</sub>*, is estimated separately using *BB\_PCTOUT* and *BB\_ACTIVE*, which allows us to estimate the intensive and extensive margins of stock repurchases on liquidity. We include calendar-quarter fixed effects, which adjust for time trends in liquidity and volatility, and industry fixed effects using two-digit Standard Industrial Classification

(SIC) codes to control for time-invariant industry-level factors.<sup>21</sup> For each regression, we estimate  $t$ -statistics based on robust standard errors double clustered at the firm and calendar-quarter level.

Based on extant academic research (e.g., Bhattacharya and Jacobsen, 2016), we include a vector of firm controls ( $X_{it}$ ) that adjust our regression estimates for a wide range of firm characteristics. The Appendix defines these variables, which include standard controls such as firm size (*SIZE*), debt financing (*LEVERAGE*), market-to-book (*MTB*), return on assets (*ROA*), cash holdings (*CASH*), dividend payouts (*DIVIDENDS*), and investments in research and development (*R&D*) based on quarterly data from Compustat. All quarterly control variables are measured in the fiscal period that ends during the same calendar-quarter as the dependent measures of liquidity. However, the relation between buybacks and liquidity is similar if we lag these variables by one fiscal period.

Using annual Compustat data, we generate a foreign operations indicator variable (*FOROPS*) that equals 1 if the firm has a non-missing, non-zero value for pre-tax income from foreign operations in the fiscal year. We also control for analyst coverage (*ANALYSTS*) by counting the number of analysts providing quarterly earnings per share estimates using data from I/B/E/S. For our regressions, we orthogonalize analysts following with respect to firm size since large firms tend to attract more analysts. Thus, the variable residual analyst following (*RANALYSTS*) gauges the portion of analyst coverage not explained by firm size. We control for stock options by taking the natural log of 1 plus the ratio of stock options granted to common shares outstanding in the prior fiscal year (*OPTIONS*). Finally, we use a Python script to obtain information on membership in the Standard & Poor's 500 index (*S&P500*) from the CRSP database.

We report estimates of Equation (6) in Table 3. Panel A uses buyback intensity (*BB\_PCTOUT*) as the variable of interest. Across all five measures of liquidity, the coefficient on *BB\_PCTOUT* is statistically different from zero at the 1% level and indicates that greater buyback intensity is correlated with better stock liquidity. For example, in tests of *SPREAD* in Column (2), the coefficient on *BB\_PCTOUT* is  $-0.023$  with a  $t$ -statistic of  $-4.77$  ( $p$ -value  $< 0.001$ ), which indicates that, all else equal, firms buying back a greater portion of their outstanding shares within a calendar-quarter tend to have significantly lower average bid-ask spreads.

21. The relation between buybacks and liquidity are similar if we replace industry fixed effects with firm fixed effects. We utilize industry fixed effects to avoid a reduction in sample size due to singleton observations.

	<i>ILLIQ</i>	<i>SPREAD</i>	<i>DVOLUME</i>	<i>TURN</i>	<i>ZERO</i>
Panel A: Intensity of buybacks					
<i>BB_PCTOUT</i>	-0.754*** (-3.95)	-0.023*** (-4.77)	5.959*** (8.99)	3.185*** (7.44)	-0.035*** (-4.18)
<i>SIZE</i>	-0.160*** (-11.60)	-0.005*** (-15.55)	1.082*** (70.37)	0.246*** (18.55)	-0.011*** (-26.19)
<i>LEVERAGE</i>	0.176*** (5.92)	0.005*** (7.42)	-0.651*** (-11.31)	0.138*** (3.46)	0.014*** (10.69)
<i>MTB</i>	-0.050*** (-7.98)	-0.001*** (-10.65)	0.396*** (35.70)	0.065*** (7.75)	-0.005*** (-20.45)
<i>ROA</i>	-0.319** (-2.57)	-0.025*** (-8.95)	0.799*** (2.74)	-1.075*** (-4.26)	-0.043*** (-5.59)
<i>CASH</i>	-0.253*** (-6.77)	-0.006*** (-8.12)	0.843*** (15.01)	0.709*** (16.19)	-0.005*** (-3.43)
<i>DIVIDENDS</i>	-3.808*** (-5.66)	-0.086*** (-6.27)	3.198 (1.61)	-13.969*** (-9.57)	-0.251*** (-7.65)
<i>R&amp;D</i>	-1.588*** (-6.04)	-0.035*** (-7.66)	1.809*** (4.28)	0.297 (0.85)	-0.022* (-1.99)
<i>FOROPS</i>	-0.031*** (-2.75)	-0.001*** (-5.17)	0.190*** (7.32)	0.006 (0.30)	-0.003*** (-5.59)
<i>ANALYSTS</i>	-0.001 (-0.16)	-0.001*** (-6.79)	0.431*** (27.77)	0.161*** (16.44)	-0.003*** (-11.83)
<i>OPTIONS</i>	-0.629*** (-3.43)	-0.016*** (-3.42)	1.601*** (3.20)	1.458*** (3.33)	-0.035*** (-3.88)
<i>S&amp;P500</i>	0.338*** (11.73)	0.009*** (15.31)	0.141*** (3.30)	-0.330*** (-9.79)	0.017*** (14.55)
Industry FE	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Firm Quarters	340,323	340,323	340,323	340,323	340,323
Adjusted R <sup>2</sup>	0.120	0.320	0.792	0.292	0.277

	<i>ILLIQ</i>	<i>SPREAD</i>	<i>DVOLUME</i>	<i>TURN</i>	<i>ZERO</i>
Panel B: Extent of buybacks					
<i>BB_ACTIVE</i>	-0.047*** (-5.35)	-0.002*** (-9.02)	0.242*** (13.88)	0.009 (0.68)	-0.003*** (-7.59)
<i>SIZE</i>	-0.158*** (-11.54)	-0.005*** (-15.47)	1.076*** (70.06)	0.247*** (18.51)	-0.011*** (-25.92)
<i>LEVERAGE</i>	0.173*** (5.84)	0.005*** (7.33)	-0.635*** (-11.01)	0.139*** (3.47)	0.014*** (10.56)
<i>MTB</i>	-0.050*** (-7.97)	-0.001*** (-10.64)	0.395*** (35.74)	0.064*** (7.67)	-0.005*** (-20.50)
<i>ROA</i>	-0.303** (-2.43)	-0.024*** (-8.75)	0.734** (2.51)	-1.050*** (-4.15)	-0.042*** (-5.43)
<i>CASH</i>	-0.258*** (-6.89)	-0.006*** (-8.33)	0.870*** (15.45)	0.712*** (16.12)	-0.005*** (-3.62)
<i>DIVIDENDS</i>	-3.660*** (-5.43)	-0.081*** (-5.91)	2.422 (1.22)	-14.028*** (-9.61)	-0.243*** (-7.40)
<i>R&amp;D</i>	-1.586*** (-6.04)	-0.035*** (-7.67)	1.806*** (4.28)	0.302 (0.86)	-0.022* (-1.98)
<i>FOROPS</i>	-0.029** (-2.54)	-0.001*** (-4.84)	0.179*** (6.96)	0.008 (0.37)	-0.003*** (-5.33)
<i>ANALYSTS</i>	0.001 (0.33)	-0.001*** (-6.19)	0.422*** (27.49)	0.163*** (16.59)	-0.003*** (-11.42)
<i>OPTIONS</i>	-0.636*** (-3.46)	-0.016*** (-3.45)	1.643*** (3.24)	1.463*** (3.33)	-0.035*** (-3.90)
<i>S&amp;P500</i>	0.347*** (11.91)	0.010*** (15.63)	0.100** (2.36)	-0.323*** (-9.68)	0.017*** (15.10)
Industry FE	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Firm Quarters	340,323	340,323	340,323	340,323	340,323
Adjusted R <sup>2</sup>	0.121	0.321	0.792	0.291	0.278

Table 3: Buybacks and Liquidity



In Panel B, we report regression results where the buyback indicator (*BB\_ACTIVE*) is the variable of interest. Across all measures of liquidity except turnover, the presence of buyback activity is statistically related to liquidity improvements in the stock at the 1% level. Moreover, the magnitude of improvements in liquidity is economically meaningful. For example, in tests of *SPREAD* in Column (2), the coefficient on *BB\_ACTIVE* is  $-0.00155$  (which is rounded to  $-0.002$  in the table). This 15.5-basis-point reduction is a 17.9% relative decline in bid-ask spreads from the sample mean (0.00867) for firms that are actively repurchasing shares.

**Key Takeaway 1:** Companies that repurchase shares provide liquidity to the stock market. Greater investment in stock buybacks equates to larger improvements in liquidity. In turn, this liquidity reduces transaction costs for all investors and helps facilitate orderly markets.

## E. Buybacks and Volatility

We next test the formal relation between buyback activity and return volatility by estimating Equation (7) using OLS:

$$\text{Volatility}_{it} = \alpha + \beta_1 \text{Buyback}_{it} + X_{it} + \text{Industry FE} + \text{Time FE} + \epsilon_{it}$$

where each of the liquidity *measures* (*RETVOL*, *ARETVOL*, *IVOL*) of stock *i* during the calendar-quarter *t* are tested separately as the dependent variables. The variables of interest, fixed effects, standard error clustering, and control variables are all identical to tests of liquidity in Equation (6). The results are reported in Table 4.

	<i>RETVOL</i>	<i>ARETVOL</i>	<i>IVOL</i>	<i>RETVOL</i>	<i>ARETVOL</i>	<i>IVOL</i>
<i>BB_PCTOUT</i>	-0.632*** (-4.89)	-0.626*** (-5.01)	-0.658*** (-6.68)			
<i>BB_ACTIVE</i>				-0.050*** (-14.21)	-0.053*** (-17.19)	-0.037*** (-14.76)
<i>SIZE</i>	-0.058*** (-29.87)	-0.069*** (-27.50)	-0.059*** (-32.48)	-0.057*** (-29.55)	-0.067*** (-27.26)	-0.059*** (-32.08)
<i>LEVERAGE</i>	0.206*** (11.49)	0.211*** (11.53)	0.136*** (13.23)	0.203*** (11.39)	0.208*** (11.43)	0.133*** (12.90)
<i>MTB</i>	-0.008*** (-4.38)	-0.011*** (-5.33)	-0.017*** (-11.48)	-0.008*** (-4.34)	-0.011*** (-5.30)	-0.017*** (-11.44)
<i>ROA</i>	-1.347*** (-20.37)	-1.329*** (-21.17)	-1.126*** (-23.04)	-1.328*** (-20.29)	-1.308*** (-21.05)	-1.105*** (-22.57)
<i>CASH</i>	0.036** (2.43)	0.034** (2.45)	0.131*** (12.41)	0.030** (2.08)	0.028** (2.06)	0.124*** (11.98)
<i>DIVIDENDS</i>	-5.833*** (-17.88)	-5.678*** (-17.95)	-4.858*** (-17.41)	-5.679*** (-17.56)	-5.514*** (-17.60)	-4.737*** (-17.00)

	<i>RETVOL</i>	<i>ARETVOL</i>	<i>IVOL</i>	<i>RETVOL</i>	<i>ARETVOL</i>	<i>IVOL</i>
<i>R&amp;D</i>	-0.754*** (-5.92)	-0.789*** (-6.22)	0.054 (0.59)	-0.753*** (-5.93)	-0.787*** (-6.23)	0.050 (0.55)
<i>FOROPS</i>	-0.021*** (-5.89)	-0.027*** (-7.39)	-0.025*** (-7.71)	-0.018*** (-5.18)	-0.024*** (-6.68)	-0.023*** (-7.20)
<i>ANALYSTS</i>	-0.009*** (-5.15)	-0.011*** (-6.72)	-0.015*** (-10.86)	-0.007*** (-3.97)	-0.009*** (-5.44)	-0.014*** (-10.04)
<i>OPTIONS</i>	0.122*** (2.70)	0.106** (2.49)	0.332** (2.29)	0.114** (2.57)	0.097** (2.33)	0.324** (2.29)
<i>S&amp;P500</i>	0.045*** (7.92)	0.059*** (10.01)	0.023*** (5.65)	0.055*** (9.38)	0.070*** (11.57)	0.030*** (7.57)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm Quarters	340,215	340,215	194,222	340,215	340,215	194,222
Adjusted R <sup>2</sup>	0.332	0.322	0.605	0.334	0.324	0.608

Table 4: Buybacks and Volatility

Columns (1) to (3) use buyback intensity (*BB\_PCTOUT*) as the variable of interest and (4) to (6) use buyback presence (*BB\_ACTIVITY*). Across all six regression estimates, we find strong evidence that stock buybacks are statistically related to lower volatility at the 1% level. For example, the coefficient in Column (4) indicates that firms actively repurchasing their shares have a 5.0 percentage point reduction in return volatility (*RETVOL*) during the quarter, which is significant at the 1% level. When compared to the average quarterly volatility of 0.499, this indicates that the presence of buyback activity is associated with 10% lower stock return variation during the quarter. The results are similar if we use abnormal stock return volatility (*ARETVOL*) that adjusts for total stock market variation or use forward-looking estimates of implied volatility (*IVOL*) for the subsample that has traded stock options.

Key Takeaway 2: Stock buybacks are associated with significant reductions in both realized and anticipated stock return volatility. Thus, bans or limitations on buyback activity would likely result in higher stock market volatility.

## F. Buybacks and Investor Savings

Firms that repurchase shares provide liquidity support to investors that want to sell positions. Liquidity support has three separate components: (1) the reduction in actual transaction costs (narrowing the bid-ask spread), (2) the reduction of price impact costs stemming from lower volatility, and (3) the implicit level of price support that a firm provides when it actively attempts to maintain prices at their fundamental values. We provide estimates of the cost savings related to lower transaction and price impact costs. The third benefit is unobservable and does not lend itself to estimation.

## Transaction Costs

We first consider how improvements in bid-ask spreads benefit all investors by reducing transaction costs. Recall from Table 2 that in tests of *SPREAD*, the coefficient on *BB\_ACTIVE* was  $-0.00155$ . This result indicates that firms actively repurchasing shares have a 15.5-basis-point reduction in transaction costs.<sup>22</sup> To quantify the total bid-ask spread savings (*SPREAD SAVINGS*) for investors in our sample, we specify Equation (8) as follows:

$$SPREAD\ SAVINGS_{i,t} = -0.0155 \times SPREAD_{i,t} \times DVOLUME_{i,t} \times BB\_ACTIVE_{i,t}$$

where *SPREAD* is the average closing bid-ask spread for stock *i* in period *t*, which we define in Subsection 3.2.2.; *DVOLUME* is the sum of dollar trading volume of stock *i* over the period of time *t*, which we define in Subsection 3.2.3.; and *BB\_ACTIVE* equals 1 for firms repurchasing shares during the quarter. Thus, *SPREAD SAVINGS* represent the transaction cost savings for each stock and quarter in our sample. We scale this value by the number of trading days to calculate the daily average savings in bid-ask spreads and present the results in Panel A of Table 5.

	Full Sample	Buyback Percent Quintiles				
		Q1	Q2	Q3	Q4	Q5
<b>Panel A. Transaction Costs</b>						
<i>Spread Savings</i>						
Average per day (\$)	53.7	65.2	40.7	50.5	55.8	56.4
Average per quarter (\$)	3,381	4,110	2,554	3,181	3,513	3,548
Total per year (\$ millions)	18.8	4.6	2.8	3.5	3.9	4.0
Total all years (\$ millions)	320.4	77.9	48.4	60.3	66.6	67.3
<b>Panel A. Transaction Costs</b>						
<i>Price Impact Savings (PIS)</i>						
Average per day (\$)	13.09	1.70	7.04	13.16	17.64	25.94
Average per quarter (\$)	3,554	3	118	1,458	4,760	11,431
Total per year (\$ millions)	1,245	0.2	8.3	102.2	333.5	800.8
Total all years (\$ millions)	21,164	3	141	1,737	5,670	13,614

Table 5: Buybacks and Investor Savings

22. One basis point is equivalent to 0.01% or 1/100th of a percent.

The average buyback firm generates \$53.7 in savings in bid-ask spreads per trading day. Summing this value for each sample firm across the calendar-quarter shows that the average buyback firm saves investors \$3,381 in spreads per quarter. Using the percentage of shares repurchased (*BB\_PCTOUT*) each quarter, we sort repurchasing firms into quintiles. We then report the estimates of spread savings for each quintile, which range from \$2,554 per quarter for those in the second quintile to \$3,548 per quarter for those in the highest quintile. Interestingly, the average firm in the lowest quintile of buyback intensity (Q1) has the largest amount of spread savings at \$4,110 per quarter. Across all firms in our sample, spread savings total to \$18.8 million per year or \$320.4 million for the full sample period.<sup>23</sup>

## Price Impact

We next estimate the buyback savings to investors stemming from reductions in the price impact aspect of liquidity. Since price impact typically increases with volatility, firms that provide liquidity during periods when there is net selling pressure will reduce the corresponding price impact associated with investor demand for liquidity.<sup>24</sup> We estimate the price impact savings from buyback-induced reductions in volatility using the so-called “square-root” model (Gomes and Waelbroeck, 2015). According to this model, price impact (*PI*) is a function of the square root of the

relative trade size and daily price volatility, which we define in Equation (9) as:

$$PI_{i,t} = 2.8\sigma_{i,t} \sqrt{Q_{i,t} / V_{i,t}}$$

where  $\sigma_{i,t}$  is the daily stock return volatility for firm *i* on day *t*,  $Q_{i,t}$  is the number of shares of firm *i* repurchased on day *t*, and  $V_{i,t}$  is average daily trading volume for firm *i* on day *t*. The estimate of the 2.8 scale factor is obtained from Gomes and Waelbroeck (2015).

We then estimate the price impact savings (*PIS*) in Equation (10) as:

$$PIS_{i,t} = 2.8 \frac{0.05}{\sqrt{252}} \sqrt{Q_{i,t} / V_{i,t}} \times BB\_ACTIVE_{i,t}$$

where 0.05 is the coefficient on *BB\_ACTIVE* from Table 4, which is the reduction in annualized volatility for firms that repurchase shares in a specific quarter *q*. For estimation purposes, we convert the quarterly number of shares repurchased to a daily estimate by assuming that shares are purchased ratably over the quarter—that is,  $\sigma_{i,t}$  is estimated as a rolling average of daily trading volume in stock *i* over the 60 trading days prior to day *t*.  $BB\_ACTIVE_{i,t}$  equals 1 for firms that are actively repurchasing shares during the quarter, and otherwise 0.

23. An alternative approach to estimating transaction cost savings is to estimate bid-ask spread savings based on the average daily dollar volume in our sample, which is \$74.1 million for firms that are actively repurchasing shares. Multiplying the average daily dollar volume times the savings in bid-ask spread of 15.5 basis points indicates that investors save \$74.1 million  $\times$  0.00155 = \$114,855 per trading day, which multiplied by 62.91 trading days per quarter equates to \$7.23 million per quarter on average. Our sample period includes 68 calendar-quarters, indicating the savings in bid-ask spreads totals \$497.4 million over 2004 to 2020.

24. Although a reduction in volatility seems intuitively beneficial, a brief discussion is warranted. In finance, the classical view is that risk—such as volatility—and expected return are positively related as risk-averse investors demand compensation for bearing more risk. For example, the Capital Asset Pricing Model posits that the expected returns of a well-diversified investor’s portfolio are positively related to the portfolio’s exposure to the risk of the overall market. Thus, one might erroneously conclude that if buybacks reduce volatility, it follows that investors will experience lower returns. This type of logic is flawed because buybacks are designed to reduce temporary volatility spikes associated with price pressure and would not be expected to affect systemic risk.

Next, in Equation (11), we estimate the dollar value of the price impact on day  $t$  for firm  $i$  as:

$$DPIS_{i,t} = PIS_{i,t} Q_{i,t} \hat{P}_{i,t}$$

where  $\hat{P}_{i,t}$  is the average of the closing prices on days  $t-1$  and  $t$  for firm  $i$ . The results of Equations (10) and (11) are presented in Panel B of Table 5.

The mean price impact savings per trade is 13.09 basis points. Across the quintiles of percentage of shares repurchased, estimates of price impact range from 1.70 to 25.94 basis points for firms in the lowest and highest quintiles of share repurchase intensity. As one would expect, the price impact benefits associated with the provision of liquidity via buybacks are the highest for firms that are the most active.

The mean dollar price impact savings per trade is \$3,554. Estimates of the price

impact savings range from \$3 to \$11,431 for firms in the lowest and highest repurchase intensity quintiles. The aggregate cost savings per year over the full sample is \$1,245 million, which totals to \$21,165 million of liquidity-induced losses that investors were able to avoid for the full sample period. We note that the estimated price impact savings in this table are losses that investors are able to avoid when companies provide liquidity via repurchases. These savings are not related to losses attributable to changes in the underlying intrinsic value of the firm's stock.

In Figure 5, we graph the aggregate investor benefits from spread savings and price impact across each year in our sample period. As the figure shows, the majority of buyback-induced liquidity savings stem from reductions in price impact. The peak savings in bid-ask spreads occur in 2008 at \$55 million, while the peak price impact occurs in 2018 at just over \$2 billion.

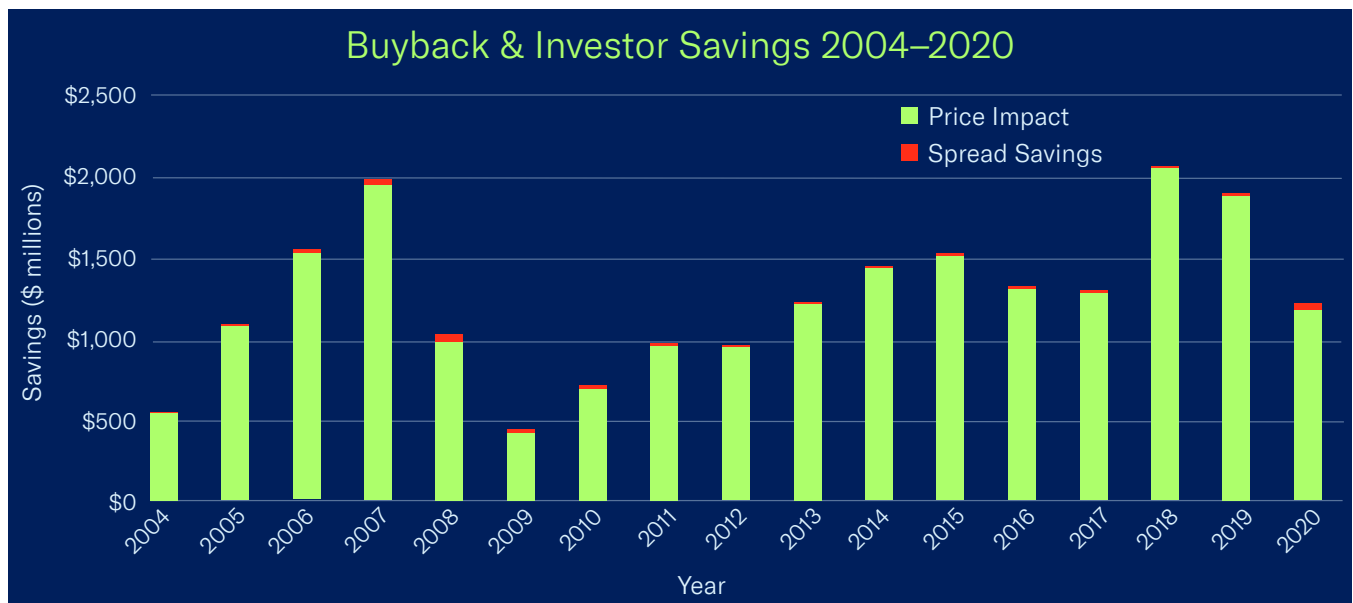


Figure 5: Investor benefits of buybacks

## Retail Investors

We next consider how the price impact and transaction cost benefits of share repurchases benefit retail investors. To quantify the benefit for retail investors, we first consider their fraction of market participation. Estimates of retail investor participation range from 10% to 14% of U.S. equity trades before commission-free trading was introduced in 2013, and now represent as much as 23% in 2021.<sup>25</sup>

Table 5 shows that, during our sample period, buybacks generated \$320 million in spread savings and \$21,164 million in price impact savings for investors. Given that retail investors represent from 10% to 20% of order flow, we estimate that the liquidity provision of buybacks saved retail investors \$2.1 to \$4.3 billion during our full sample period. These values equate to retail investor savings of \$126 to \$253 million per year due to buyback activity.

**Key Takeaway 3:** Stock buybacks generate economically large benefits for retail investors. Since the SEC revised buyback activity disclosures in 2004, we estimate that buybacks have saved retail investors \$2.1 to \$4.2 billion in transaction and price impact costs.

25. See Katie Martin and Robin Wigglesworth, "Rise of the retail army: the amateur traders transforming markets," *Financial Times*, March 8, 2021, available at <https://www.ft.com/content/7a91e3ea-b9ec-4611-9a03-a8dd3b8bddb5>; Bloomberg Intelligence, "Stock-market gamification unlikely to end soon or draw new rules," *Bloomberg*, February 19, 2021, available at <https://www.bloomberg.com/professional/blog/stock-market-gamification-unlikely-to-end-soon-or-draw-new-rules/>; and Bill Hertz and David Aferiat, "Survey on the 2021 State of the Independent Retail Investor," *Nasdaq*, May 25, 2021, available at <https://www.nasdaq.com/articles/survey-on-the-2021-state-of-the-independent-retail-investor-2021-05-25>.

## 5. Additional Tests

### A. Buybacks and Future Uncertainty

The evidence so far indicates that stock repurchase activity is correlated with reductions in stock illiquidity and volatility. In this subsection, we ask whether market-based measures of future volatility and uncertainty influence the properties of stock buybacks. For these tests, we compute expected volatility (*EXPVOL*) as the ratio of the implied volatility on the 30-day ATM stock options divided by the *adjusted* implied volatility on the 91-day ATM stock options on the first day of each calendar-quarter. For this measure, we adjust the implied volatility of the 91-day options to remove the implied volatility component of the 30-day options. We then partition the sample with data in OptionMetrics and create a variable, *HIEXPVOL*, that equals 1 if the firm's expected volatility is above the sample median value for each calendar-quarter; and else 0. We then estimate Equation (12) as follows:

$$\text{Buyback}_{it} = \alpha + \beta_1 \text{HIEXPVOL}_{it} + X_{it} + \text{Industry FE} + \text{Time FE} + \epsilon_{it}$$

where each of the buyback measures (*BB\_PCTOUT*, *BB\_ACTIVE*, *BB\_ANNOUNCE*, *BB\_UPDATE*, and *BB\_EXPAND*) of stock *i* during the calendar-quarter *t* are tested separately as the dependent variables. All control variables, fixed effects, and standard error clustering are identical to Equations (6) and (7). Since these regressions include high dimensional fixed effects, we follow the advice of Greene (2004) in using a linear probability model via OLS rather than a *maximum likelihood estimator* to test the dependent indicator variables *BB\_ACTIVE*, *BB\_ANNOUNCE*, *BB\_UPDATE*, and *BB\_EXPAND*. If managers strategically use stock repurchases to calm markets during periods of high expected volatility, we anticipate that firms with higher *expected volatility* will be more proactive in repurchasing shares during the quarter in order to attenuate the market's expectation of volatility. Thus, we expect a positive coefficient on  $\beta_1$ .

	<i>BB_PCTOUT</i>	<i>BB_ACTIVE</i>	<i>BB_ANNOUNCE</i>	<i>BB_UPDATE</i>	<i>BB_EXPAND</i>
<i>HIEXPVOL</i>	0.002*** (11.18)	0.119*** (17.47)	0.017*** (8.55)	0.121*** (11.73)	0.012*** (9.28)
<i>SIZE</i>	-0.000 (-1.39)	0.006** (2.02)	0.012*** (8.60)	0.005 (1.54)	-0.000 (-0.09)
<i>LEVERAGE</i>	0.001** (2.13)	-0.046** (-2.50)	-0.035*** (-6.12)	-0.098*** (-4.59)	-0.008** (-2.46)
<i>MTB</i>	-0.000*** (-8.89)	-0.007*** (-2.98)	-0.001 (-1.63)	-0.014*** (-5.94)	0.000 (0.39)
<i>ROA</i>	0.019*** (12.29)	0.869*** (12.22)	0.256*** (10.47)	1.007*** (12.19)	0.147*** (6.81)



	<i>BB_PCTOUT</i>	<i>BB_ACTIVE</i>	<i>BB_ANNOUNCE</i>	<i>BB_UPDATE</i>	<i>BB_EXPAND</i>
<i>CASH</i>	0.002* (1.77)	-0.124*** (-5.88)	0.022*** (3.61)	-0.106*** (-3.87)	0.005 (1.23)
<i>DIVIDENDS</i>	-0.048*** (-4.16)	1.281* (1.89)	-0.212 (-1.09)	2.968*** (4.30)	-0.060 (-0.46)
<i>R&amp;D</i>	0.008 (1.62)	-0.029 (-0.17)	0.135*** (2.67)	-0.076 (-0.41)	0.079* (1.90)
<i>FOROPS</i>	0.001*** (3.99)	0.064*** (6.83)	-0.001 (-0.44)	0.062*** (5.79)	0.002 (1.27)
<i>ANALYSTS</i>	0.000*** (7.22)	0.041*** (10.59)	-0.000 (-0.28)	0.025*** (6.58)	0.002*** (2.93)
<i>OPTIONS</i>	0.001 (0.54)	-0.202** (-2.07)	0.015 (0.66)	-0.347** (-2.45)	-0.008 (-0.59)
<i>S&amp;P500</i>	0.003*** (9.30)	0.237*** (16.85)	0.002 (0.35)	0.135*** (8.09)	0.008*** (3.26)
Industry FE	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Firm Quarters	186,863	186,863	186,863	186,863	186,863
Adjusted R <sup>2</sup>	0.049	0.195	0.024	0.286	0.016

Table 6: Future Uncertainty and Buybacks

The results are reported in Table 6. Columns (1) and (2) indicate that firms with higher expected volatility on the first day of the quarter—where *HIEXPVOL* equals 1—tend to be more active and intensive with their buyback activity during the quarter. For example, the positive coefficient on *HIEXPVOL* in Column (2) is significant at the 1% level and indicates that firms with above-median values of expected volatility are 11.9% more likely to actively repurchase shares.

Column (3) shows that firms with higher expected volatility are also more likely to authorize a new buyback (*BB\_ANNOUNCE*). The coefficient of 0.017 on *HIEXPVOL* is 32% of the sample mean of buyback announcements (0.053) and

is significantly different from zero at the 1% level (*p-value*<0.001). The results in Columns (4) and (5) indicate that firms with high expected volatility also provide substantially more buyback updates and are more likely to expand the duration or magnitude of the repurchase program.

Overall, the regression estimates in Table 4 imply that managers can potentially influence volatility through their buyback activity. Table 6 extends this result and shows that managers utilize forward-looking estimates of volatility to inform their buyback decisions. The latter result is important as it helps attenuate potential concerns of coefficient bias due to endogeneity via reverse causality. In other words, one might

be concerned that the negative relation between buybacks and volatility shown in Table 4 could be interpreted as either (1) that buybacks reduce volatility or (2) that managers conduct more buybacks when volatility is lower. However, the results in Table 6 show that buyback activity is stronger when forward-looking volatility is higher and not lower as would be the case with reverse causality under interpretation (2). Thus, the evidence indicates that managers use buybacks to reduce volatility.

**Key Takeaway 4:** Managers attenuate volatility through their buyback activities and utilize market-based estimates of future volatility to inform their buyback decisions. When future volatility is expected to be higher, managers increase their buyback intensity.

## B. Buybacks and Policy Uncertainty

To shed more light on the direction of causality between uncertainty and buyback activity, we conduct an additional analysis using exogenous variation in political uncertainty. Prior work links political uncertainty to plausibly exogenous deteriorations in overall market quality and liquidity (Pasquariello and Zafeiridou, 2014; Boone et al., 2021). For these tests, we use the economic policy uncertainty (*EPU*) index developed by Baker et al. (2016), which we obtain from the website [policyuncertainty.com](http://policyuncertainty.com). For our analyses, we download the normalized monthly *EPU* index based on the relative volume of news articles discussing terms that reflect policy-related economic uncertainty. We then average these values at the calendar-quarter level

and estimate regressions of buyback activity and disclosure as dependent variables.<sup>26</sup>

In particular, we estimate Equation (13) using OLS regressions:

$$Buyback_{it} = \alpha + \beta_1 EPU_t + X_{it} + Firm\ FE + \epsilon_{it}$$

where each of the buyback measures (*BB\_PCTOUT*, *BB\_ACTIVE*, *BB\_ANNOUNCE*, *BB\_UPDATE*, and *BB\_EXPAND*) of stock *i* during the calendar-quarter *t* are tested separately as the dependent variables. All control variables are identical to Equations (6) and (7). However, since the variable of interest, *EPU*, is identical across all firms in a calendar-quarter, we do not include calendar-quarter fixed effects as these would absorb all variation in the *EPU* index. We also use firm fixed effects (which absorbs industry fixed effects) but the results are similar with either choice. We cluster standard errors at the firm level.

26. To confirm that economic policy uncertainty induces market volatility, we examine the correlation between the *EPU* index and the CBOE Volatility Index (*VIX*). We find a 49% correlation between quarterly variation in the *EPU* index and *VIX* during 2004 to 2020, which is statistically different from zero at the 1% level.

	<i>BB_PCTOUT</i>	<i>BB_ACTIVE</i>	<i>BB_ANNOUNCE</i>	<i>BB_UPDATE</i>	<i>BB_EXPAND</i>
<i>EPU</i>	-0.000 (-0.34)	0.114*** (5.72)	-0.073*** (-9.95)	1.136*** (48.38)	0.007 (1.63)
<i>SIZE</i>	0.000** (2.24)	0.059*** (17.95)	0.009*** (9.46)	0.119*** (27.68)	0.006*** (10.43)
<i>LEVERAGE</i>	-0.001** (-2.01)	-0.062*** (-5.35)	-0.046*** (-12.26)	-0.041*** (-2.67)	-0.011*** (-4.23)
<i>MTB</i>	-0.000*** (-7.04)	-0.004*** (-3.15)	-0.002*** (-5.47)	0.002* (1.71)	0.000 (0.32)
<i>ROA</i>	0.004** (2.30)	0.087*** (3.19)	0.091*** (8.89)	-0.276*** (-8.58)	0.026*** (3.96)
<i>CASH</i>	-0.000 (-0.18)	-0.001 (-0.06)	0.012*** (2.97)	0.036** (2.23)	0.005** (2.01)
<i>DIVIDENDS</i>	0.020*** (2.65)	2.827*** (9.14)	0.489*** (3.07)	6.417*** (15.29)	0.252*** (2.83)
<i>R&amp;D</i>	0.005* (1.89)	0.381*** (6.18)	0.071*** (3.45)	0.513*** (6.91)	0.069*** (4.86)
<i>FOROPS</i>	0.000 (1.23)	0.046*** (5.85)	-0.001 (-0.22)	0.103*** (10.07)	0.003* (1.79)
<i>ANALYSTS</i>	0.001*** (6.71)	0.041*** (10.87)	0.008*** (5.54)	0.074*** (15.78)	0.003*** (3.20)
<i>OPTIONS</i>	0.000 (0.32)	-0.093*** (-2.61)	0.012 (1.03)	-0.348*** (-3.52)	-0.029*** (-2.84)
<i>S&amp;P500</i>	0.001*** (3.20)	0.075*** (4.86)	0.006 (1.11)	0.070*** (3.54)	0.009*** (2.96)
Firm FE	Yes	Yes	Yes	Yes	Yes
Time FE	No	No	No	No	No
Firm Quarters	340,043	340,043	340,043	340,043	340,043
Adjusted R <sup>2</sup>	0.097	0.439	0.058	0.467	0.067

Table 7: Political Uncertainty and Buybacks

The regression estimates of Equation (13) are presented in Table 7. In Column (1), the coefficient on *EPU* is not statistically different from zero, indicating that policy uncertainty does not influence the intensity of buyback activity per se. However, Column

(2) shows that firms are more likely to repurchase shares during periods when the *EPU* index is higher. Interestingly, the results in Column (3) show that firms are less likely to announce a new buyback program during periods when the *EPU* index

is higher. However, firms are substantially more likely to provide updates on buyback activity during periods of high policy uncertainty (Column 4). Thus, economic policy uncertainty seems to mostly influence

*existing* buyback programs by inducing more firms to repurchase shares and provide updates on their repurchase activity during periods of exogenous spikes in uncertainty.

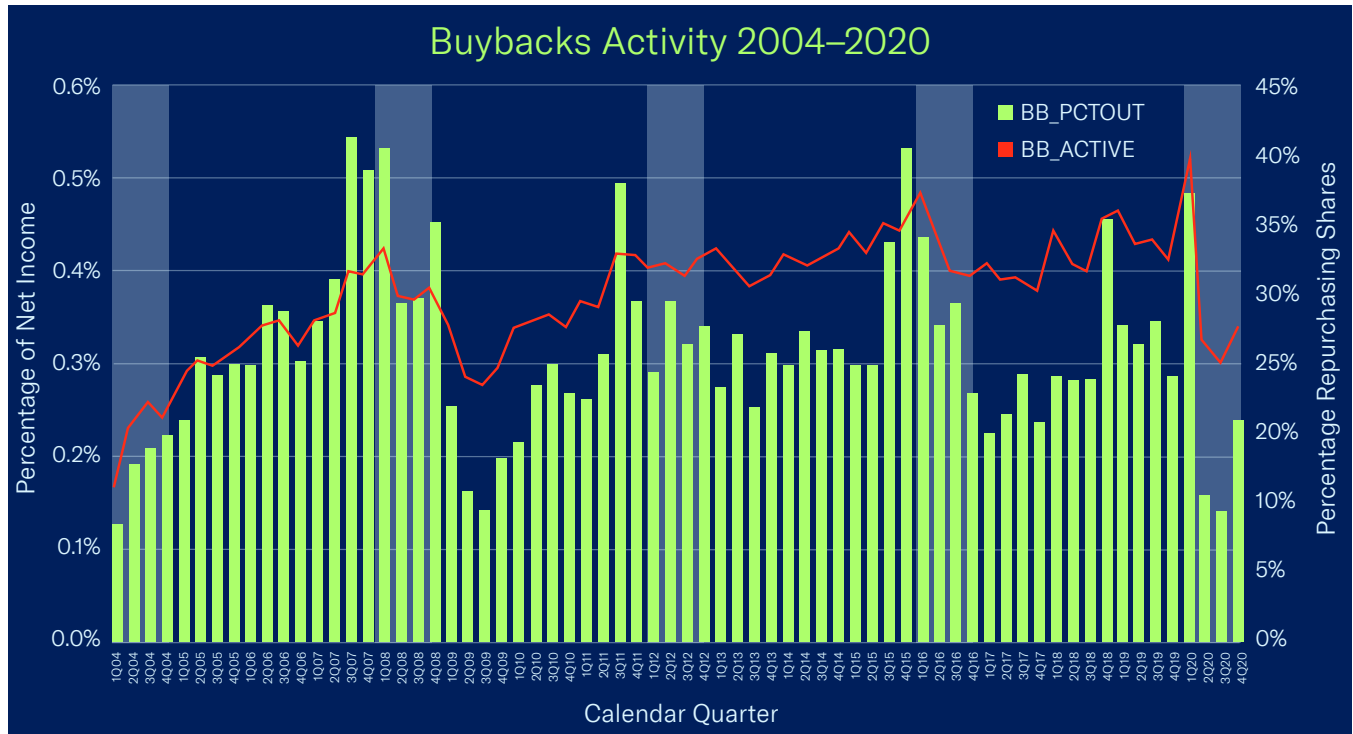


Figure 6: Buybacks and U.S. presidential elections

As an additional measure of how political uncertainty can influence repurchase activity, we again graph buybacks over time in Figure 6. This graph is similar to Figure 1 except we add gray shaded areas that depict U.S. presidential election periods, which we define as starting with the first primary election—the Iowa caucus—in January or February (Q1) and ending with the election in November (Q4).<sup>27</sup> Figure 6 shows that the intensity and presence of buyback activity tend to spike in the one or two quarters just before the presidential election period and persist into the first quarter of the election year, but often return swiftly to the prior level as the election

period enters Q2. We observe a similar pattern in 4Q19 except buyback intensity dropped even further in 2Q20, likely due to the COVID-19 pandemic and its impact on business uncertainty and excess cash availability. Thus, this graph provides further evidence that uncertainty and volatility likely factor into firms’ buyback decisions.

**Key Takeaway 5:** Economic policy uncertainty increases stock return volatility and reduces stock liquidity. Managers respond to transient variation in economic policy uncertainty by strengthening their buyback activities. When economic policy uncertainty can be anticipated, such as

27. The Iowa caucus dates during our sample period are January 19, 2004; January 3, 2008; January 3, 2012; February 1, 2016; and February 3, 2020. The U.S. presidential election dates are November 2, 2004; November 4, 2008; November 6, 2012; November 8, 2016; and November 3, 2020.

with presidential elections, managers proactively increase their buyback activities and, in the aggregate, likely have a calming effect on stock markets.

### C. Buybacks and Institutional Trading

In this subsection, we examine the relationship between institutional trading and buyback activity. We hypothesize that managers will use buyback activity to provide price support and liquidity to their stock when institutional selling pressure is high, which we refer to as the “liquidity windows hypothesis.”

Using data from the Thomson Reuters 13-F database, we measure three properties of institutional ownership. First, we measure the quarterly level of shares owned by institutions with more than \$100 million in assets under management. We divide total institutional ownership by shares outstanding and label this variable *IOPCT\_OWN*.

We also generate two measures of quarterly flows at the firm level using 13-F data. For each firm, we separately sum institutional buys and sells of stock based on the quarter-over-quarter net change in stock

ownership. If an institution reduces its quarterly position, we consider it a “sell.” We then calculate the percentage of institutional shares sold divided by total institutional ownership (*IOPCT\_SELL*). Similarly, if an institution increases its quarterly position in a stock, we consider it a “buy.” The ratio of shares bought during the quarter divided by total institutional ownership is labeled *IOPCT\_BUY*. We then estimate buyback activity in Equation (14) using OLS regressions:

$$Buyback_{it} = \alpha + \beta_1 IOPCT\_SELL_{it} + \beta_2 IOPCT\_BUY_{it} + \beta_3 IOPCT\_OWN_{it} + X_{it} + Industry\ FE + Time \times FE + \epsilon_{it}$$

where each of the buyback measures (*BB\_PCTOUT*, *BB\_ACTIVE*, *BB\_ANNOUNCE*, *BB\_UPDATE*, and *BB\_EXPAND*) of stock *i* during the calendar-quarter *t* are tested separately as the dependent variables. All control variables, fixed effects, and standard error clustering are identical to Equations (6) and (7). If firms strengthen the presence or intensity of buyback activity to provide liquidity when institutions are more likely to be selling rather than buying shares, then we expect a positive coefficient on  $\beta_1$  that is larger (i.e., more positive) than the coefficient on  $\beta_2$ . The results are presented in Table 8.

	<i>BB_PCTOUT</i>	<i>BB_ACTIVE</i>	<i>BB_ANNOUNCE</i>	<i>BB_UPDATE</i>	<i>BB_EXPAND</i>
<i>IOPCT_SELL</i>	0.067*** (3.93)	3.010*** (5.60)	0.706* (1.99)	3.701*** (9.43)	0.358 (1.29)
<i>IOPCT_BUY</i>	0.011 (0.66)	0.761* (1.67)	-0.103 (-0.69)	1.643*** (2.92)	0.018 (0.12)
<i>IOPCT_OWN</i>	0.002*** (10.96)	0.164*** (15.19)	-0.005 (-1.28)	0.124*** (7.20)	0.009*** (5.74)
<i>SIZE</i>	0.000*** (2.74)	0.019*** (9.71)	0.012*** (12.13)	0.016*** (7.11)	0.001*** (3.40)

	<i>BB_PCTOUT</i>	<i>BB_ACTIVE</i>	<i>BB_ANNOUNCE</i>	<i>BB_UPDATE</i>	<i>BB_EXPAND</i>
<i>LEVERAGE</i>	0.000 (0.43)	-0.060*** (-4.63)	-0.034*** (-9.47)	-0.095*** (-6.17)	-0.009*** (-4.51)
<i>MTB</i>	-0.000*** (-5.18)	-0.001 (-0.41)	-0.000 (-0.36)	-0.004** (-2.20)	0.001 (1.55)
<i>ROA</i>	0.008*** (6.89)	0.389*** (9.80)	0.129*** (10.51)	0.476*** (9.27)	0.066*** (7.05)
<i>CASH</i>	0.001 (1.54)	-0.094*** (-7.39)	0.005 (1.46)	-0.097*** (-5.97)	0.000 (0.05)
<i>DIVIDENDS</i>	-0.005 (-0.58)	3.361*** (6.79)	0.136 (0.96)	5.062*** (8.67)	0.126 (1.50)
<i>R&amp;D</i>	0.001 (0.22)	-0.020 (-0.23)	0.048* (1.89)	-0.136 (-1.40)	0.025 (1.40)
<i>FOROPS</i>	0.000*** (4.57)	0.049*** (7.32)	0.001 (0.80)	0.051*** (6.35)	0.002* (1.71)
<i>ANALYSTS</i>	0.000*** (4.44)	0.029*** (7.82)	0.002** (2.08)	0.017*** (4.63)	0.002*** (2.93)
<i>OPTIONS</i>	0.001 (0.66)	-0.176*** (-3.74)	0.027* (1.76)	-0.246*** (-3.80)	-0.012* (-1.71)
<i>S&amp;P500</i>	0.003*** (11.17)	0.261*** (19.46)	0.007 (1.61)	0.147*** (8.79)	0.011*** (4.59)
Industry FE	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Firm Quarters	340,043	340,043	340,043	340,043	340,043
Adjusted R <sup>2</sup>	0.036	0.200	0.024	0.273	0.014

Table 8: Institutional Trading and Buybacks

Column (1) shows that the intensity of buybacks (*BB\_PCTOUT*) is stronger when institutions are selling rather than buying shares. Whereas the coefficient on *IOPCT\_SELL* is positive (0.067) and statistically significant at the 1% level ( $p$ -value<0.001), the coefficient on *IOPCT\_BUY* is not statistically different from zero ( $p$ -value=0.511). The results are similar in Column (2), where the dependent variable is the presence of buyback

activity (*BB\_ACTIVE*). The coefficient on *IOPCT\_SELL* (3.010) is statistically different from zero at the 1% level ( $p$ -value<0.001). The coefficient on *IOPCT\_BUY* is smaller (0.761) and is only marginally different from the 10% level ( $p$ -value=0.100). An *F*-test reveals that the coefficient on *IOPCT\_SELL* is statistically larger than the coefficient on *IOPCT\_BUY* in Columns (1) and (2).<sup>28</sup>

28. *F*-tests show that the coefficient on *IOPCT\_SELL* is statistically larger than the coefficient on *IOPCT\_BUY* in Column (1): *F*-statistic=5.01,  $p$ -value=0.029; Column (2): *F*-statistic=9.15,  $p$ -value=0.004; Column (3): *F*-statistic=4.50,  $p$ -value=0.038; and Column (4): *F*-statistic=10.91,  $p$ -value=0.002. The coefficients are not statistically different in Column (5): *F*-statistic=1.03;  $p$ -value=0.313.

Column (3) shows that institutional selling is marginally and positively related to announcements of a buyback plan (*BB\_ANNOUNCE*). We find no similar relation with institutional buying. In Column (4), both institutional buying and selling are related to providing buyback updates. However, the coefficient on *IOPCT\_SELL* is numerically (3.701 versus 1.643) and statistically ( $p$ -value=0.002) larger than the coefficient on *IOPCT\_BUY*, which we interpret as evidence that managers provide more buyback updates when selling pressure is higher. Neither institutional buying nor selling are related to expansion of buyback programs in Column (5).

Key Takeaway 6: Managers increase stock buyback activity when institutional investors tend to be selling shares, which indicates that buybacks help stabilize markets.



## 6. Conclusion

We study the liquidity and volatility implications of corporate share buyback programs. Using a broad sample of over 10,000 firms across 17 years, we find strong evidence that firms strategically employ share repurchases to provide an important liquidity role similar to market-makers and a market stabilization role similar to investment bankers. We find strong evidence that share repurchases are associated with overall improvements in stock liquidity and attenuations in stock return volatility. We demonstrate how market improvements from buyback activities specifically benefit retail investors, which we estimate saved retail investors \$2.1 to \$4.2 billion in transaction and price impact costs during our sample period.

We also find that firms tend to strengthen buyback presence and intensity when institutional investor selling pressure is higher, which is the period when stock liquidity and volatility likely come under pressure. Firms also strengthen buyback activities when the market anticipates higher near-term stock-specific volatility and during spikes in overall economic policy uncertainty.

Taken together, our analyses demonstrate the beneficial impact of share repurchases on stock liquidity and volatility. These relations have important policy implications for contemporaneous discussions on buyback activity. Vocal opponents of stock buybacks have either introduced or threatened to introduce legislation to limit buyback activity. These legislative threats tend to demonize open market repurchase programs, which provide additional flexibility to managers wishing to return surplus capital to investors. Based on our findings, imposing limitations on stock buybacks will limit firms' ability to calm markets, supply liquidity, and reduce volatility during the most crucial periods of uncertainty. Such limitations would ultimately harm retail investors, who now account for approximately 20% of the average daily traded volume of equities in the U.S.

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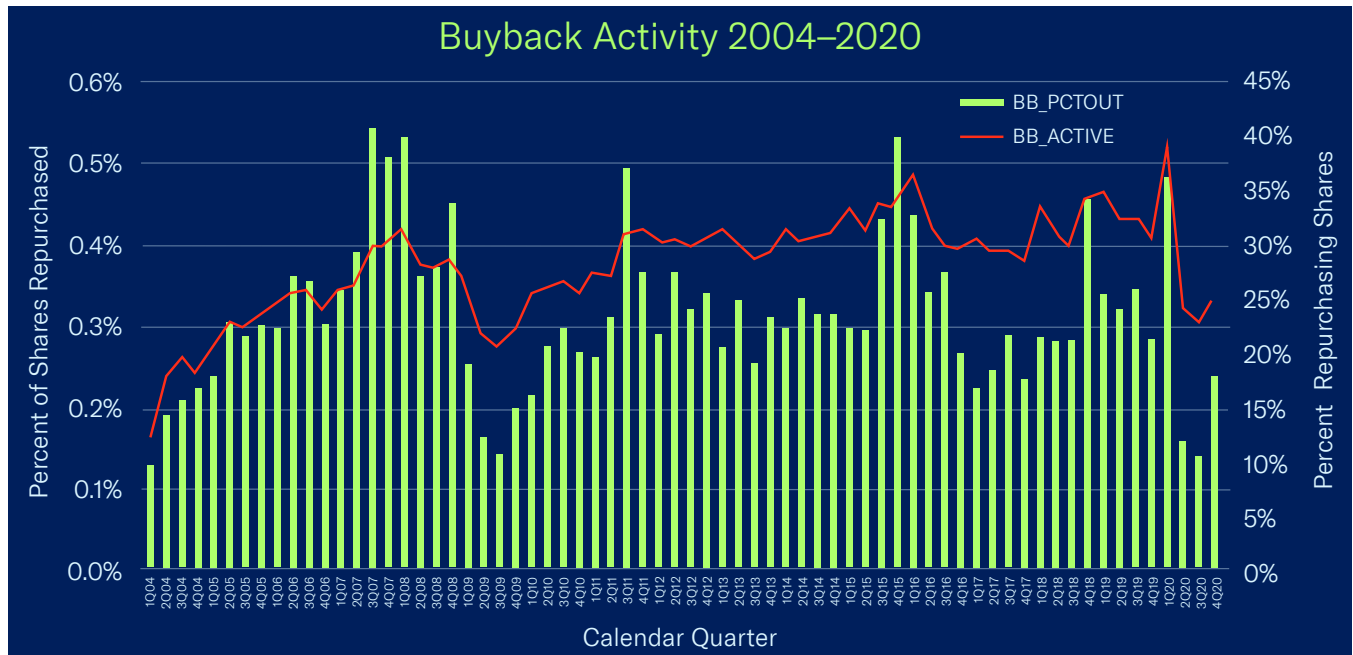
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## 8. Appendix: Variable Definitions

Variable	Definition
<b>Buyback Activity</b>	
<i>BB_PCTOUT</i>	Number of shares repurchased during the quarter by the shares outstanding at the end of the prior quarter.
<i>BB_ACTIVE</i>	Equals 1 if a firm repurchases any shares during a quarter, and otherwise 0.
<b>Buyback Disclosure</b>	
<i>BB_ANNOUNCE</i>	Equals 1 if a firm reports event types 36, 152, or 232 in the CIQ-KD database, which correspond to the announcement of a new buyback program.
<i>BB_UPDATE</i>	Equals 1 if a firm reports event type 231 in the CIQ-KD database, which corresponds to buyback tranche updates of quarterly buyback amounts.
<i>BB_EXPAND</i>	Equals 1 if a firm reports event type 230 in the CIQ-KD database, which corresponds to expanded duration or size of existing buyback programs.
<b>Liquidity</b>	
<i>ILLIQ</i>	Absolute stock return divided by dollar trading volume.
<i>SPREAD</i>	Closing percentage quoted bid-ask spread is the closing ask less the closing bid divided by the midpoint of the closing ask and bid.
<i>DVOLUME</i>	Dollar volume is log transformed value of the stock price times the shares traded.
<i>TURN</i>	Stock turnover is the natural log of shares traded divided by shares outstanding.
<i>ZERO</i>	Percentage of trading days with zero stock returns.
<b>Volatility</b>	
<i>RETVOL</i>	Annualized standard deviation of daily stock returns over the quarter.
<i>ARETVOL</i>	Annualized standard deviation of daily abnormal stock returns over the quarter, where abnormal returns adjust for the returns of the CRSP value-weighted index.
<i>IVOL</i>	Average of the implied volatilities of the call and put contracts, which are closest to ATM and are one month to maturity (30 days).
<b>Controls</b>	
<i>SIZE</i>	Natural log of total assets.
<i>LEVERAGE</i>	Sum of long-term debt and long-term debt in current liabilities divided by total assets.
<i>MTB</i>	Market value of debt and equity divided by total assets.
<i>ROA</i>	Earnings before interest and taxes divided by total assets.
<i>CASH</i>	Cash and cash equivalents divided by total assets.
<i>DIVIDENDS</i>	Common dividends divided by earnings before interest, tax, depreciation, and amortization.
<i>R&amp;D</i>	Research and development expense divided by total assets. Missing values are set to 0.
<i>FOROPS</i>	Foreign operations indicator equals 1 if the firm has a non-missing, non-zero value for pre-tax income from foreign operations during the fiscal year, and otherwise 0.
<i>ANALYSTS</i>	Number of analysts providing quarterly earnings per share estimates from the I/B/E/S adjusted summary file. We set missing values to zero.

Variable	Definition
<i>RANALYSTS</i>	Residual number of analysts, which is analyst following (ANALYSTS) orthogonalized with respect to firm size (SIZE).
<i>OPTIONS</i>	Natural log of 1 plus the number of options granted divided by shares outstanding in the prior fiscal year.
<i>S&amp;P500</i>	Equals 1 if the company is a member of the S&P500 index, and otherwise 0.
<b>Other Measures</b>	
<i>HIEXPVOL</i>	High expected volatility equals 1 if the firm has an above-median quarterly value of expected volatility, which we define as the ratio of the implied volatility on the 30-day ATM call and put stock option divided by the implied volatility on the 91-day ATM call and put stock options on the first day of each calendar-quarter, and otherwise 0.
<i>EPU</i>	Normalized index value of the volume of news articles discussing economic policy uncertainty from Baker et al. (2016).
<i>IOPCT_SELL</i>	Percentage of institutional shares sold divided by institutional ownership; 0 if missing.
<i>IOPCT_BUY</i>	Percentage of institutional shares bought divided by institutional ownership; 0 if missing.
<i>IOPCT_OWEN</i>	Percentage of institutional shares owned divided by total shares outstanding; 0 if missing.

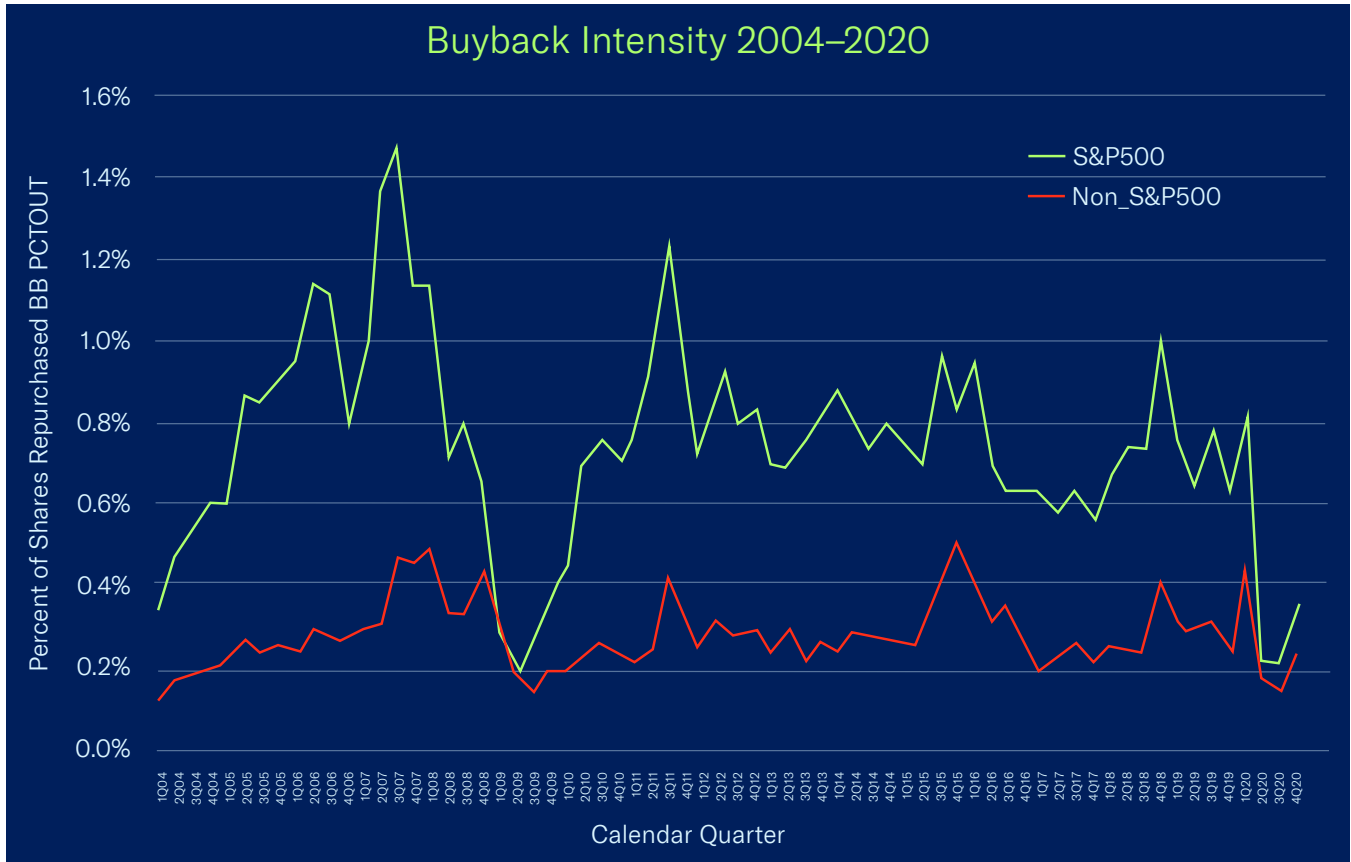
Figure 1. Buybacks Over Time



This figure plots time-series variation in buyback activity over calendar-quarters 1Q-04 to 4Q-20. The percentage of shares repurchased (*BB\_PCTOUT*) is presented as black bars that correspond to values on the left y-axis. The percentage of firms repurchasing stock (*BB\_ACTIVE*) is plotted as a gray dashed line with its scale on the right y-axis.

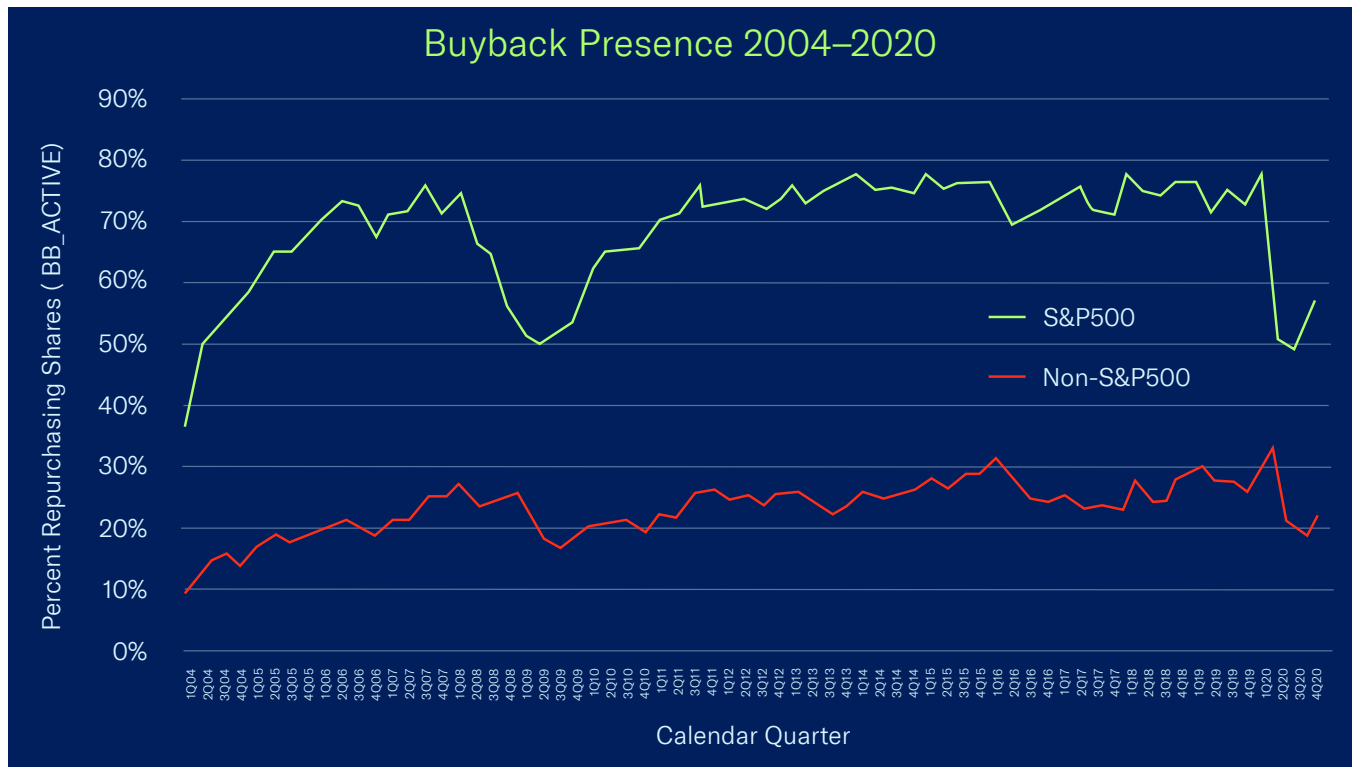


Figure 2. Share Buyback Intensity for S&P500 and Non-S&P500 Firms



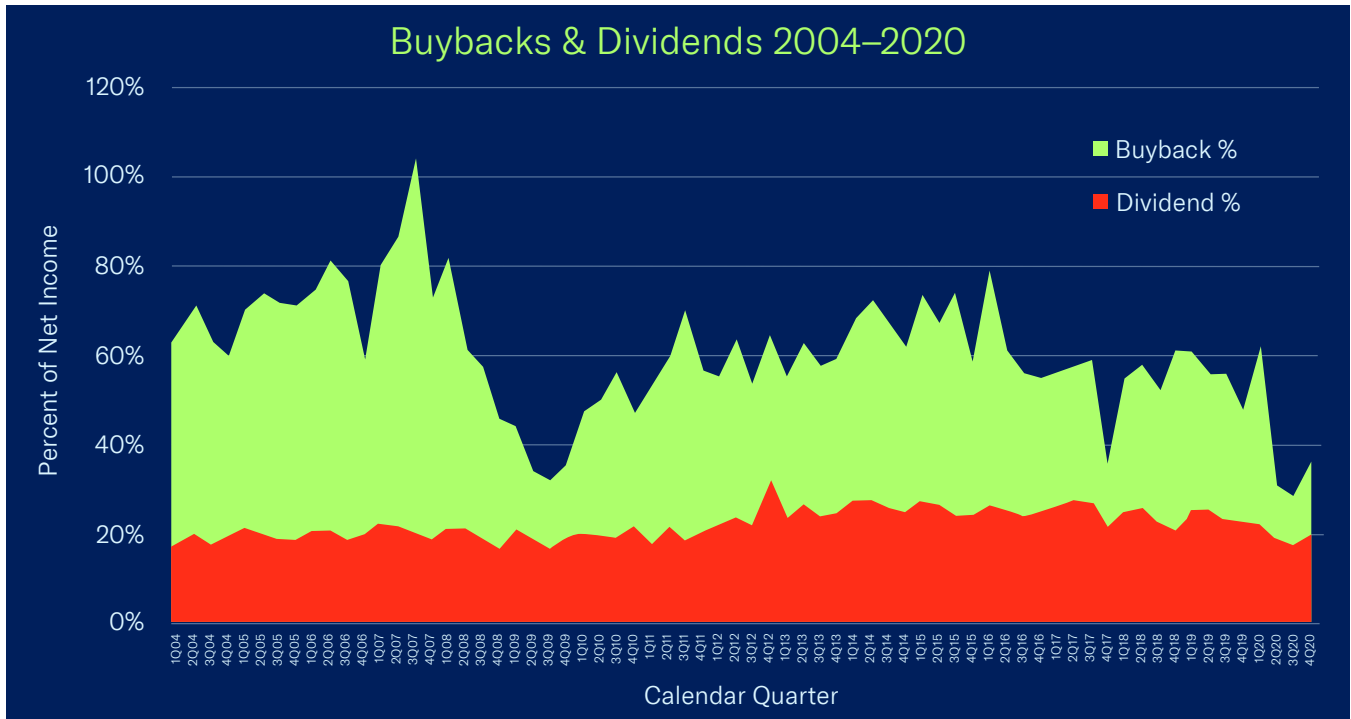
This figure plots time-series variation in buyback intensity based on S&P500 index membership. For each sample quarter, we separately calculate the average percentage of shares repurchased (*BB\_PCTOUT*) for sample firms that are members of the S&P500 and those that are not. *BB\_PCTOUT* is depicted by the black solid line for S&P500 constituents, and by the gray dashed line for non-S&P500 sample firms.

Figure 3. Share Buyback Presence for S&P500 and Non-S&P500 Firms



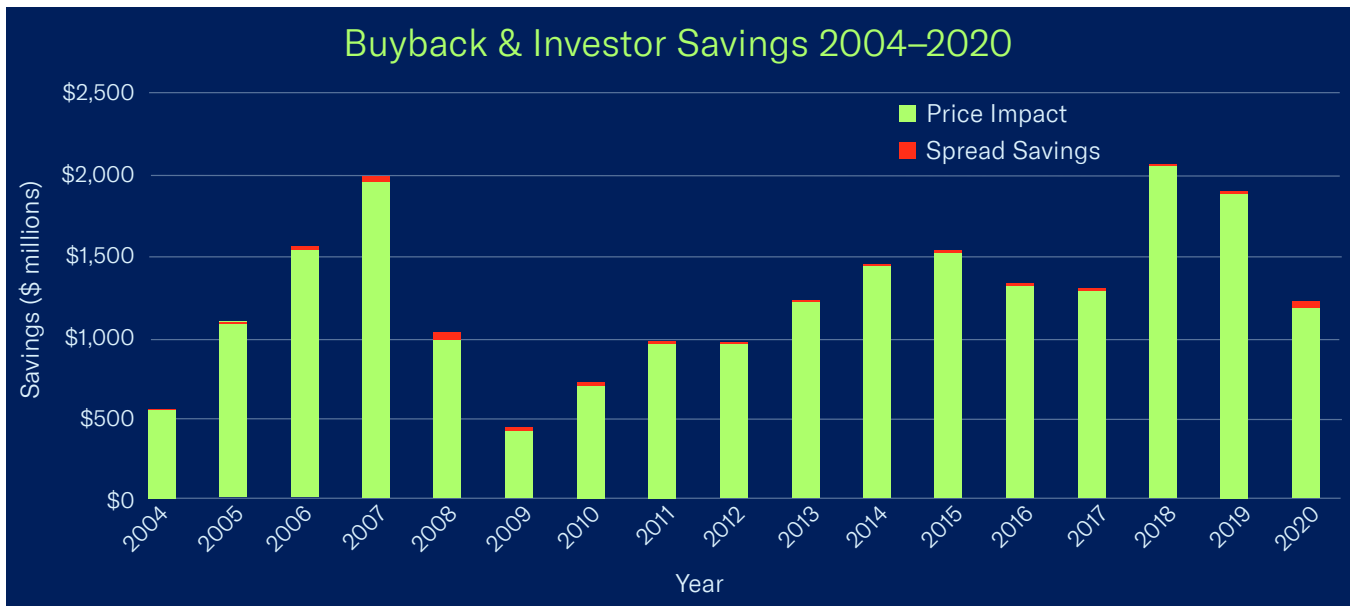
This figure plots time-series variation in buyback activity based on S&P500 index membership. For each sample quarter, we separately calculate the average percentage of firms repurchasing shares (*BB\_ACTIVE*) for sample firms that are members of the S&P500 and those that are not. *BB\_ACTIVE* is depicted by the black solid line for S&P500 constituents, and by the gray dashed line for non-S&P500 sample firms.

Figure 4. Payouts Over Time



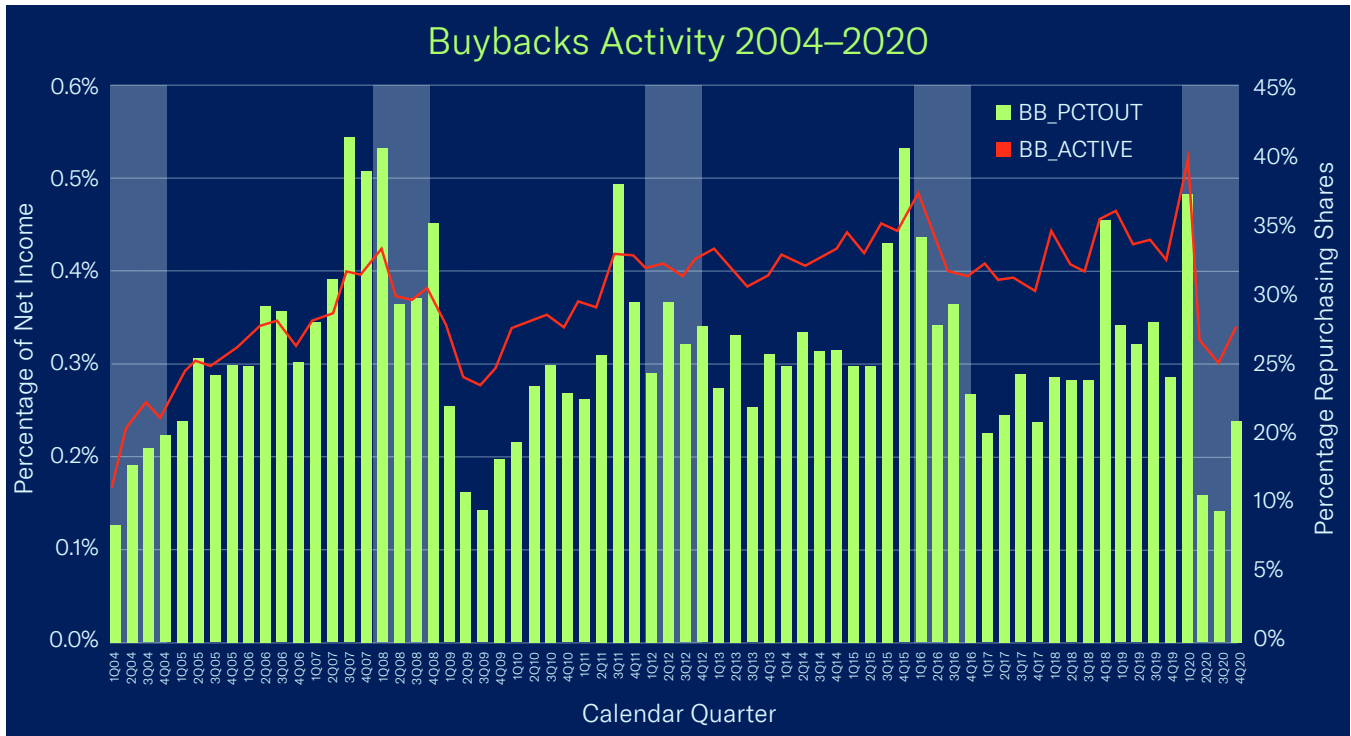
This figure plots time-series variation in payout statistics. For each sample quarter, we separately calculate dividends and buybacks as a percentage of net income. Dividend % is depicted by the area shaded in gray. Buyback % is represented by the area shaded in black.

Figure 5. Investor Benefits of Buybacks



This graph depicts the investor savings from buyback activity over 2004 to 2020. The graphs depict annual savings in terms of transaction costs via bid-ask spreads (*SPREAD SAVINGS*) charted in black bars and price impact savings (*PIS*) charted in gray bars.

Figure 6. Buybacks and U.S. Presidential Elections



This figure plots time-series variation in buyback activity over calendar-quarters 1Q-04 to 4Q-20. The percentage of shares repurchased (*BB\_PCTOUT*) is presented as black bars that correspond to values on the left y-axis. The percentage of firms repurchasing stock (*BB\_ACTIVE*) is plotted as a gray dashed line with its scale on the right y-axis. The gray shaded areas depict the U.S. presidential election period, which begins with the first primary election in Q1 and ends with the election in Q4 during election years.

**Table 1. Summary Statistics**

	Mean	Median	Standard Deviation	Firm Quarters
<b>Buyback Activity</b>				
<i>BB_PCTOUT</i>	0.003	0.000	0.020	340,327
<i>BB_PCTOUT (non-zero)</i>	0.011	0.005	0.037	94,776
<i>BB_PCTOUT (log-transformed)</i>	0.003	0.000	0.013	340,327
<i>BB_ACTIVE</i>	0.278	0.000	0.448	340,327
<b>Buyback Disclosure</b>				
<i>BB_ANNOUNCE</i>	0.053	0.000	0.224	340,327
<i>BB_UPDATE</i>	0.267	0.000	0.442	340,327
<i>BB_EXPAND</i>	0.017	0.000	0.129	340,327
<b>Stock Liquidity</b>				
<i>ILLIQ</i>	0.191	0.001	0.955	340,327
<i>SPREAD</i>	0.009	0.002	0.018	340,327
<i>DVOLUME (\$ millions)</i>	35.700	3.196	185.135	340,327
<i>DVOLUME (log-transformed)</i>	14.746	14.977	2.706	340,327
<i>TURN</i>	0.659	0.361	9.467	340,327
<i>TURN (log-transformed)</i>	-1.163	-1.019	1.192	340,327
<i>ZERO</i>	0.033	0.016	0.047	340,327
<b>Volatility</b>				
<i>RETVOL</i>	0.499	0.395	0.435	340,219
<i>ARETVOL</i>	0.467	0.362	0.430	340,219
<i>IVOL</i>	0.474	0.408	0.257	194,222
<b>Firm Characteristics</b>				
<i>SIZE</i>	6.637	6.630	2.223	340,327
<i>LEVERAGE</i>	0.227	0.170	0.227	340,327
<i>MTB</i>	1.597	1.082	1.761	340,327
<i>ROA</i>	-0.002	0.010	0.064	340,327
<i>CASH</i>	0.202	0.097	0.241	340,327
<i>DIVIDENDS</i>	0.003	0.000	0.006	340,327
<i>R&amp;D</i>	0.013	0.000	0.031	340,327
<i>FOROPS</i>	0.370	0.000	0.483	340,327
<i>ANALYSTS</i>	4.640	2.000	6.200	340,327
<i>RANALYSTS</i>	0.002	-0.132	1.000	340,327
<i>OPTIONS</i>	0.011	0.001	0.028	340,327
<i>S&amp;P500</i>	0.099	0.000	0.299	340,327
<b>Uncertainty Measures</b>				
<i>HIEXPVOL</i>	0.500	1.000	0.500	187,192
<i>EPU</i>	0.135	0.126	0.063	340,327

This table presents the mean, median, standard deviation, and sample observations of key variables. We define variables in the Appendix.

**Table 2. Correlation Matrix**

	<i>BB_PCTOUT</i>	<i>BB_ACTIVE</i>	<i>ILLIQ</i>	<i>SPREAD</i>	<i>DVOLUME</i>	<i>TURN</i>	<i>ZERO</i>	<i>RETVOL</i>	<i>ARETVOL</i>	<i>IVOL</i>
<i>BB_PCTOUT</i>	1.0000									
<i>BB_ACTIVE</i>	0.2502*	1.0000								
<i>ILLIQ</i>	-0.0172*	-0.0706*	1.0000							
<i>SPREAD</i>	-0.0360*	-0.1541*	0.6890*	1.0000						
<i>DVOLUME</i>	0.0770*	0.3016*	-0.3876*	-0.6155*	1.0000					
<i>TURN</i>	0.0448*	0.0839*	-0.3320*	-0.4554*	0.6867*	1.0000				
<i>ZERO</i>	-0.0363*	-0.1614*	0.2668*	0.4056*	-0.5408*	-0.3930*	1.0000			
<i>RETVOL</i>	-0.0354*	-0.1660*	0.2303*	0.4257*	-0.2224*	0.1500*	0.0987*	1.0000		
<i>ARETVOL</i>	-0.0400*	-0.1868*	0.2562*	0.4663*	-0.2765*	0.1072*	0.1480*	0.9891*	1.0000	
<i>IVOL</i>	-0.0624*	-0.2577*	0.0509*	0.4900*	-0.4382*	0.2240*	0.2244*	0.7447*	0.7431*	1.0000

This table presents a pairwise correlation matrix at the calendar-quarter level. The asterisk \* denotes correlations are statistically different from zero at the 5% level or better. We define variables in the Appendix.

**Table 3. Buybacks and Liquidity**

	<i>ILLIQ</i>	<i>SPREAD</i>	<i>DVOLUME</i>	<i>TURN</i>	<i>ZERO</i>
Panel A: Intensity of buybacks					
<i>BB_PCTOUT</i>	-0.754*** (-3.95)	-0.023*** (-4.77)	5.959*** (8.99)	3.185*** (7.44)	-0.035*** (-4.18)
<i>SIZE</i>	-0.160*** (-11.60)	-0.005*** (-15.55)	1.082*** (70.37)	0.246*** (18.55)	-0.011*** (-26.19)
<i>LEVERAGE</i>	0.176*** (5.92)	0.005*** (7.42)	-0.651*** (-11.31)	0.138*** (3.46)	0.014*** (10.69)
<i>MTB</i>	-0.050*** (-7.98)	-0.001*** (-10.65)	0.396*** (35.70)	0.065*** (7.75)	-0.005*** (-20.45)
<i>ROA</i>	-0.319** (-2.57)	-0.025*** (-8.95)	0.799*** (2.74)	-1.075*** (-4.26)	-0.043*** (-5.59)
<i>CASH</i>	-0.253*** (-6.77)	-0.006*** (-8.12)	0.843*** (15.01)	0.709*** (16.19)	-0.005*** (-3.43)
<i>DIVIDENDS</i>	-3.808*** (-5.66)	-0.086*** (-6.27)	3.198 (1.61)	-13.969*** (-9.57)	-0.251*** (-7.65)
<i>R&amp;D</i>	-1.588*** (-6.04)	-0.035*** (-7.66)	1.809*** (4.28)	0.297 (0.85)	-0.022* (-1.99)
<i>FOROPS</i>	-0.031*** (-2.75)	-0.001*** (-5.17)	0.190*** (7.32)	0.006 (0.30)	-0.003*** (-5.59)
<i>ANALYSTS</i>	-0.001 (-0.16)	-0.001*** (-6.79)	0.431*** (27.77)	0.161*** (16.44)	-0.003*** (-11.83)
<i>OPTIONS</i>	-0.629*** (-3.43)	-0.016*** (-3.42)	1.601*** (3.20)	1.458*** (3.33)	-0.035*** (-3.88)
<i>S&amp;P500</i>	0.338*** (11.73)	0.009*** (15.31)	0.141*** (3.30)	-0.330*** (-9.79)	0.017*** (14.55)
Industry FE	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Firm Quarters	340,323	340,323	340,323	340,323	340,323
Adjusted R <sup>2</sup>	0.120	0.320	0.792	0.292	0.277



	<i>ILLIQ</i>	<i>SPREAD</i>	<i>DVOLUME</i>	<i>TURN</i>	<i>ZERO</i>
Panel B: Extent of buybacks					
<i>BB_ACTIVE</i>	-0.047*** (-5.35)	-0.002*** (-9.02)	0.242*** (13.88)	0.009 (0.68)	-0.003*** (-7.59)
<i>SIZE</i>	-0.158*** (-11.54)	-0.005*** (-15.47)	1.076*** (70.06)	0.247*** (18.51)	-0.011*** (-25.92)
<i>LEVERAGE</i>	0.173*** (5.84)	0.005*** (7.33)	-0.635*** (-11.01)	0.139*** (3.47)	0.014*** (10.56)
<i>MTB</i>	-0.050*** (-7.97)	-0.001*** (-10.64)	0.395*** (35.74)	0.064*** (7.67)	-0.005*** (-20.50)
<i>ROA</i>	-0.303** (-2.43)	-0.024*** (-8.75)	0.734** (2.51)	-1.050*** (-4.15)	-0.042*** (-5.43)
<i>CASH</i>	-0.258*** (-6.89)	-0.006*** (-8.33)	0.870*** (15.45)	0.712*** (16.12)	-0.005*** (-3.62)
<i>DIVIDENDS</i>	-3.660*** (-5.43)	-0.081*** (-5.91)	2.422 (1.22)	-14.028*** (-9.61)	-0.243*** (-7.40)
<i>R&amp;D</i>	-1.586*** (-6.04)	-0.035*** (-7.67)	1.806*** (4.28)	0.302 (0.86)	-0.022* (-1.98)
<i>FOROPS</i>	-0.029** (-2.54)	-0.001*** (-4.84)	0.179*** (6.96)	0.008 (0.37)	-0.003*** (-5.33)
<i>ANALYSTS</i>	0.001 (0.33)	-0.001*** (-6.19)	0.422*** (27.49)	0.163*** (16.59)	-0.003*** (-11.42)
<i>OPTIONS</i>	-0.636*** (-3.46)	-0.016*** (-3.45)	1.643*** (3.24)	1.463*** (3.33)	-0.035*** (-3.90)
<i>S&amp;P500</i>	0.347*** (11.91)	0.010*** (15.63)	0.100** (2.36)	-0.323*** (-9.68)	0.017*** (15.10)
Industry FE	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Firm Quarters	340,323	340,323	340,323	340,323	340,323
Adjusted R <sup>2</sup>	0.121	0.321	0.792	0.291	0.278

This table presents results from an OLS regression estimate of stock liquidity and buybacks. All regressions include industry (two-digit SIC) and time (calendar-quarter) fixed effects. *T*-statistics are presented in parentheses based on robust standard errors double clustered at the firm and calendar-quarter levels. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% level, respectively. We define variables in the Appendix.

**Table 4. Buybacks and Volatility**

	<i>RETVOL</i>	<i>ARETVOL</i>	<i>IVOL</i>	<i>RETVOL</i>	<i>ARETVOL</i>	<i>IVOL</i>
<i>BB_PCTOUT</i>	-0.632*** (-4.89)	-0.626*** (-5.01)	-0.658*** (-6.68)			
<i>BB_ACTIVE</i>				-0.050*** (-14.21)	-0.053*** (-17.19)	-0.037*** (-14.76)
<i>SIZE</i>	-0.058*** (-29.87)	-0.069*** (-27.50)	-0.059*** (-32.48)	-0.057*** (-29.55)	-0.067*** (-27.26)	-0.059*** (-32.08)
<i>LEVERAGE</i>	0.206*** (11.49)	0.211*** (11.53)	0.136*** (13.23)	0.203*** (11.39)	0.208*** (11.43)	0.133*** (12.90)
<i>MTB</i>	-0.008*** (-4.38)	-0.011*** (-5.33)	-0.017*** (-11.48)	-0.008*** (-4.34)	-0.011*** (-5.30)	-0.017*** (-11.44)
<i>ROA</i>	-1.347*** (-20.37)	-1.329*** (-21.17)	-1.126*** (-23.04)	-1.328*** (-20.29)	-1.308*** (-21.05)	-1.105*** (-22.57)
<i>CASH</i>	0.036** (2.43)	0.034** (2.45)	0.131*** (12.41)	0.030** (2.08)	0.028** (2.06)	0.124*** (11.98)
<i>DIVIDENDS</i>	-5.833*** (-17.88)	-5.678*** (-17.95)	-4.858*** (-17.41)	-5.679*** (-17.56)	-5.514*** (-17.60)	-4.737*** (-17.00)
<i>R&amp;D</i>	-0.754*** (-5.92)	-0.789*** (-6.22)	0.054 (0.59)	-0.753*** (-5.93)	-0.787*** (-6.23)	0.050 (0.55)
<i>FOROPS</i>	-0.021*** (-5.89)	-0.027*** (-7.39)	-0.025*** (-7.71)	-0.018*** (-5.18)	-0.024*** (-6.68)	-0.023*** (-7.20)
<i>ANALYSTS</i>	-0.009*** (-5.15)	-0.011*** (-6.72)	-0.015*** (-10.86)	-0.007*** (-3.97)	-0.009*** (-5.44)	-0.014*** (-10.04)
<i>OPTIONS</i>	0.122*** (2.70)	0.106** (2.49)	0.332** (2.29)	0.114** (2.57)	0.097** (2.33)	0.324** (2.29)
<i>S&amp;P500</i>	0.045*** (7.92)	0.059*** (10.01)	0.023*** (5.65)	0.055*** (9.38)	0.070*** (11.57)	0.030*** (7.57)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes	Yes
Firm Quarters	340,215	340,215	194,222	340,215	340,215	194,222
Adjusted R <sup>2</sup>	0.332	0.322	0.605	0.334	0.324	0.608

This table presents results from an OLS regression estimate of stock and option volatility. All regressions include industry (two-digit SIC) and time (calendar-quarter) fixed effects. *t*-statistics are presented in parentheses based on robust standard errors double clustered at the firm and calendar-quarter levels. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% level, respectively. We define variables in the Appendix.

**Table 5. Buybacks and Investor Savings**

	Full Sample	Buyback Percent Quintiles				
		Q1	Q2	Q3	Q4	Q5
<b>Panel A. Transaction Costs</b>						
<i>Spread Savings</i>						
Average per day (\$)	53.7	65.2	40.7	50.5	55.8	56.4
Average per quarter (\$)	3,381	4,110	2,554	3,181	3,513	3,548
Total per year (\$ millions)	18.8	4.6	2.8	3.5	3.9	4.0
Total all years (\$ millions)	320.4	77.9	48.4	60.3	66.6	67.3
<b>Panel B. Transaction Costs</b>						
<i>Price Impact Savings (PIS)</i>						
Average per day (\$)	13.09	1.70	7.04	13.16	17.64	25.94
Average per quarter (\$)	3,554	3	118	1,458	4,760	11,431
Total per year (\$ millions)	1,245	0.2	8.3	102.2	333.5	800.8
Total all years (\$ millions)	21,164	3	141	1,737	5,670	13,614

This table presents summarized estimates of transaction cost and volatility savings for retail investors. Panel A estimates savings in the bid-ask spread (*SPREAD SAVINGS*) due to repurchase activity. Panel B estimates price impact savings (*PIS*) due to repurchase activity. We sort repurchasing firms into quintiles based on the percentage of shares repurchased (*BB\_PCTOUT*) over the full sample. Firms in the lowest quintile (Q1) repurchase the smallest percentage of shares outstanding in a given quarter, while firms in the highest quintile (Q5) repurchase the largest percent of shares outstanding. The notation bps represents basis points. One basis point is equal to 0.001.

**Table 6. Future Uncertainty and Buybacks**

	<i>BB_PCTOUT</i>	<i>BB_ACTIVE</i>	<i>BB_ANNOUNCE</i>	<i>BB_UPDATE</i>	<i>BB_EXPAND</i>
<i>HIEXPVOL</i>	0.002*** (11.18)	0.119*** (17.47)	0.017*** (8.55)	0.121*** (11.73)	0.012*** (9.28)
<i>SIZE</i>	-0.000 (-1.39)	0.006** (2.02)	0.012*** (8.60)	0.005 (1.54)	-0.000 (-0.09)
<i>LEVERAGE</i>	0.001** (2.13)	-0.046** (-2.50)	-0.035*** (-6.12)	-0.098*** (-4.59)	-0.008** (-2.46)
<i>MTB</i>	-0.000*** (-8.89)	-0.007*** (-2.98)	-0.001 (-1.63)	-0.014*** (-5.94)	0.000 (0.39)
<i>ROA</i>	0.019*** (12.29)	0.869*** (12.22)	0.256*** (10.47)	1.007*** (12.19)	0.147*** (6.81)
<i>CASH</i>	0.002* (1.77)	-0.124*** (-5.88)	0.022*** (3.61)	-0.106*** (-3.87)	0.005 (1.23)
<i>DIVIDENDS</i>	-0.048*** (-4.16)	1.281* (1.89)	-0.212 (-1.09)	2.968*** (4.30)	-0.060 (-0.46)
<i>R&amp;D</i>	0.008 (1.62)	-0.029 (-0.17)	0.135*** (2.67)	-0.076 (-0.41)	0.079* (1.90)
<i>FOROPS</i>	0.001*** (3.99)	0.064*** (6.83)	-0.001 (-0.44)	0.062*** (5.79)	0.002 (1.27)
<i>ANALYSTS</i>	0.000*** (7.22)	0.041*** (10.59)	-0.000 (-0.28)	0.025*** (6.58)	0.002*** (2.93)
<i>OPTIONS</i>	0.001 (0.54)	-0.202** (-2.07)	0.015 (0.66)	-0.347** (-2.45)	-0.008 (-0.59)
<i>S&amp;P500</i>	0.003*** (9.30)	0.237*** (16.85)	0.002 (0.35)	0.135*** (8.09)	0.008*** (3.26)
Industry FE	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Firm Quarters	186,863	186,863	186,863	186,863	186,863
Adjusted R <sup>2</sup>	0.049	0.195	0.024	0.286	0.016

This table presents results from an OLS regression estimate of the ratio of buyback activity and disclosures. The variable *HIEXPVOL* equals 1 if the ratio of the implied volatility on 30-day ATM stock options divided by the adjusted implied volatility on the 91-day ATM stock options on the first day of the quarter is above the sample median for each calendar-quarter. All regressions include industry (two-digit SIC) and time (calendar-quarter) fixed effects. *t*-statistics are presented in parentheses based on robust standard errors double clustered at the firm and calendar-quarter levels. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% level, respectively. We define variables in the Appendix.

**Table 7. Political Uncertainty and Buybacks**

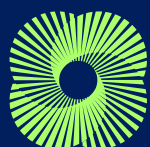
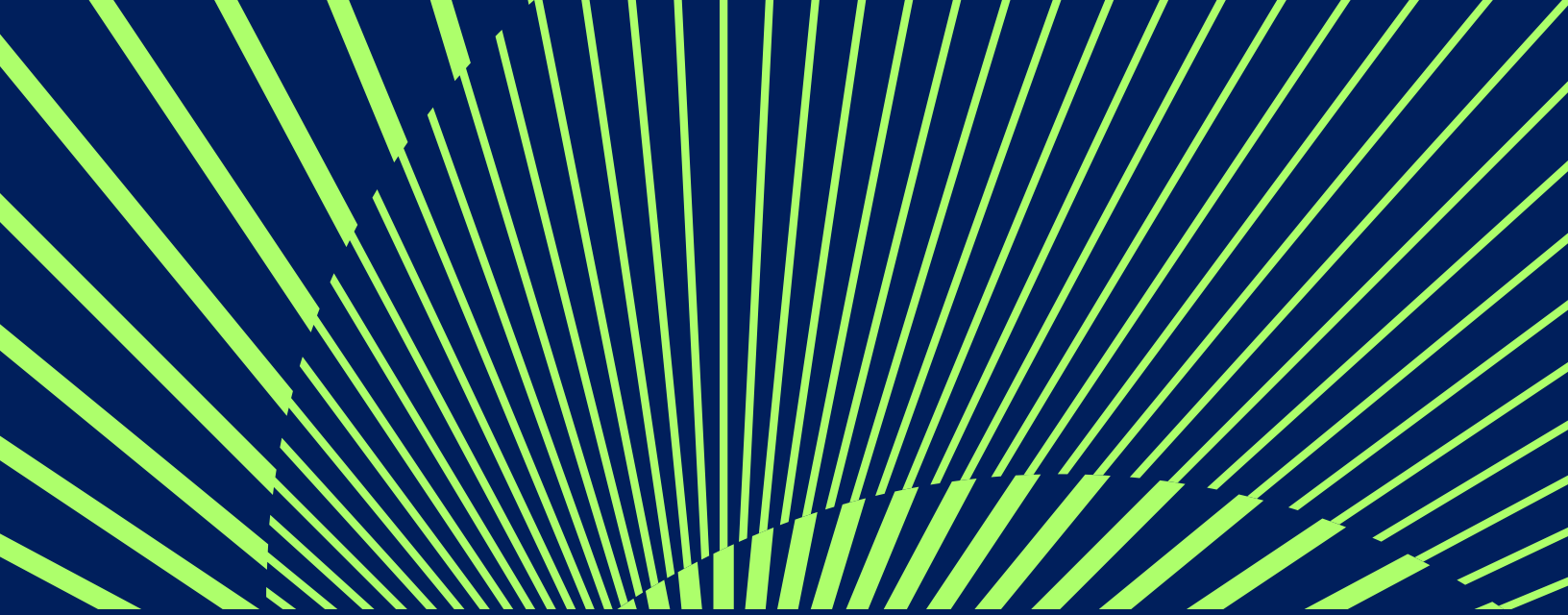
	<i>BB_PCTOUT</i>	<i>BB_ACTIVE</i>	<i>BB_ANNOUNCE</i>	<i>BB_UPDATE</i>	<i>BB_EXPAND</i>
<i>EPU</i>	-0.000 (-0.34)	0.114*** (5.72)	-0.073*** (-9.95)	1.136*** (48.38)	0.007 (1.63)
<i>SIZE</i>	0.000** (2.24)	0.059*** (17.95)	0.009*** (9.46)	0.119*** (27.68)	0.006*** (10.43)
<i>LEVERAGE</i>	-0.001** (-2.01)	-0.062*** (-5.35)	-0.046*** (-12.26)	-0.041*** (-2.67)	-0.011*** (-4.23)
<i>MTB</i>	-0.000*** (-7.04)	-0.004*** (-3.15)	-0.002*** (-5.47)	0.002* (1.71)	0.000 (0.32)
<i>ROA</i>	0.004** (2.30)	0.087*** (3.19)	0.091*** (8.89)	-0.276*** (-8.58)	0.026*** (3.96)
<i>CASH</i>	-0.000 (-0.18)	-0.001 (-0.06)	0.012*** (2.97)	0.036** (2.23)	0.005** (2.01)
<i>DIVIDENDS</i>	0.020*** (2.65)	2.827*** (9.14)	0.489*** (3.07)	6.417*** (15.29)	0.252*** (2.83)
<i>R&amp;D</i>	0.005* (1.89)	0.381*** (6.18)	0.071*** (3.45)	0.513*** (6.91)	0.069*** (4.86)
<i>FOROPS</i>	0.000 (1.23)	0.046*** (5.85)	-0.001 (-0.22)	0.103*** (10.07)	0.003* (1.79)
<i>ANALYSTS</i>	0.001*** (6.71)	0.041*** (10.87)	0.008*** (5.54)	0.074*** (15.78)	0.003*** (3.20)
<i>OPTIONS</i>	0.000 (0.32)	-0.093*** (-2.61)	0.012 (1.03)	-0.348*** (-3.52)	-0.029*** (-2.84)
<i>S&amp;P500</i>	0.001*** (3.20)	0.075*** (4.86)	0.006 (1.11)	0.070*** (3.54)	0.009*** (2.96)
Firm FE	Yes	Yes	Yes	Yes	Yes
Time FE	No	No	No	No	No
Firm Quarters	340,043	340,043	340,043	340,043	340,043
Adjusted R <sup>2</sup>	0.097	0.439	0.058	0.467	0.067

This table presents results from an OLS regression estimate of the ratio of buyback activity and disclosures. The variable *EPU* is the quarterly average value of the normalized index value of the volume of news articles discussing economic policy uncertainty from Baker et al. (2016). All regressions include firm fixed effects (which absorbs industry fixed effects), but do not include time fixed effects as these would absorb the *EPU* variable. t-statistics are presented in parentheses based on robust standard errors clustered at the firm level. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% level, respectively. We define variables in the Appendix.

**Table 8. Institutional Trading and Buybacks**

	<i>BB_PCTOUT</i>	<i>BB_ACTIVE</i>	<i>BB_ANNOUNCE</i>	<i>BB_UPDATE</i>	<i>BB_EXPAND</i>
<i>IOPCT_SELL</i>	0.067*** (3.93)	3.010*** (5.60)	0.706* (1.99)	3.701*** (9.43)	0.358 (1.29)
<i>IOPCT_BUY</i>	0.011 (0.66)	0.761* (1.67)	-0.103 (-0.69)	1.643*** (2.92)	0.018 (0.12)
<i>IOPCT_OWN</i>	0.002*** (10.96)	0.164*** (15.19)	-0.005 (-1.28)	0.124*** (7.20)	0.009*** (5.74)
<i>SIZE</i>	0.000*** (2.74)	0.019*** (9.71)	0.012*** (12.13)	0.016*** (7.11)	0.001*** (3.40)
<i>LEVERAGE</i>	0.000 (0.43)	-0.060*** (-4.63)	-0.034*** (-9.47)	-0.095*** (-6.17)	-0.009*** (-4.51)
<i>MTB</i>	-0.000*** (-5.18)	-0.001 (-0.41)	-0.000 (-0.36)	-0.004** (-2.20)	0.001 (1.55)
<i>ROA</i>	0.008*** (6.89)	0.389*** (9.80)	0.129*** (10.51)	0.476*** (9.27)	0.066*** (7.05)
<i>CASH</i>	0.001 (1.54)	-0.094*** (-7.39)	0.005 (1.46)	-0.097*** (-5.97)	0.000 (0.05)
<i>DIVIDENDS</i>	-0.005 (-0.58)	3.361*** (6.79)	0.136 (0.96)	5.062*** (8.67)	0.126 (1.50)
<i>R&amp;D</i>	0.001 (0.22)	-0.020 (-0.23)	0.048* (1.89)	-0.136 (-1.40)	0.025 (1.40)
<i>FOROPS</i>	0.000*** (4.57)	0.049*** (7.32)	0.001 (0.80)	0.051*** (6.35)	0.002* (1.71)
<i>ANALYSTS</i>	0.000*** (4.44)	0.029*** (7.82)	0.002** (2.08)	0.017*** (4.63)	0.002*** (2.93)
<i>OPTIONS</i>	0.001 (0.66)	-0.176*** (-3.74)	0.027* (1.76)	-0.246*** (-3.80)	-0.012* (-1.71)
<i>S&amp;P500</i>	0.003*** (11.17)	0.261*** (19.46)	0.007 (1.61)	0.147*** (8.79)	0.011*** (4.59)
Industry FE	Yes	Yes	Yes	Yes	Yes
Time FE	Yes	Yes	Yes	Yes	Yes
Firm Quarters	340,043	340,043	340,043	340,043	340,043
Adjusted R <sup>2</sup>	0.036	0.200	0.024	0.273	0.014

This table presents results from an OLS regression estimate of the buyback activity and institutional trading. The variables *IOPCT\_SELL*, *IOPCT\_BUY*, and *IOPCT\_OWN* represents the percentage of shares sold, bought, and owned by institutional investors during the quarter. All regressions include industry (two-digit SIC) and time (calendar-quarter) fixed effects. t-statistics are presented in parentheses based on robust standard errors double clustered at the firm and calendar-quarter levels. \*\*\*, \*\*, and \* denote statistical significance at the 1%, 5%, and 10% level, respectively. We define variables in the Appendix.



U.S. Chamber of Commerce  
Center for Capital Markets  
Competitiveness



## **Coalition Comment of April 1, 2022**

April 1, 2022

Ms. Vanessa Countryman  
Secretary  
U.S. Securities and Exchange Commission  
100 F Street NE  
Washington, DC 20549

**Re: Share Repurchase Disclosure Modernization (Release Nos. 34-93783, IC-34440; File No. S7-21-21); Rule 10b5-1 and Insider Trading (Release Nos. 33-11013, 34-93782; File No. S7-20-21)**

Dear Ms. Countryman:

The undersigned organizations appreciate the opportunity to comment on the recent and interrelated rule proposals issued by the Securities and Exchange Commission (“SEC”) regarding stock buybacks (“Share Repurchase Proposal”) and Rule 10b5-1 plans (“Rule 10b5-1 Proposal”).

Our organizations support efforts by Congress and the SEC to ensure that America’s capital markets maintain their status as the most competitive, transparent, and liquid in the world. Investors in the U.S. capital markets must have confidence that bad actors are held accountable and that corporate insiders are not able to game the system or bend the rules in their own favor.

At the same time, regulations must be properly calibrated in a way that guards against such abuses without disincentivizing market participants from engaging in legitimate activities that benefit investors. Complex, prescriptive regulations can often impose costs on shareholders that vastly outweigh their purported benefits.

It is with these principles in mind that we offer our perspectives on the Share Repurchase Proposal and the Rule 10b5-1 Proposal. As explained throughout this letter, we are concerned that as drafted these proposals could negatively impact long-term shareholders and undermine past actions the SEC has taken to increase transparency surrounding stock buybacks and 10b5-1 plans.

### **Share Repurchase Proposal**

Over 50% of the American public is invested in the stock market, either through direct ownership of shares or through mutual funds or retirement vehicles such as a 401(k) plan. These investors depend on companies to deliver long-term financial returns in order to have a dignified retirement, send a child off to college, or to save for any other life goal.

Public companies and their boards have a responsibility to allocate capital in a manner that furthers the best interests of these investors. Sometimes that means investing in new and existing projects, in hiring and retaining employees, or in research and development (“R&D”). Other times – for example when a company has excess cash – that can mean returning profits to shareholders in the form of dividends or share buybacks. Each of these major capital allocation decisions are undertaken pursuant to management’s and the board’s fiduciary duty to shareholders and are subject to rigorous discussion and analysis by companies and review and approval by a company’s board of directors.

Share buybacks are a well-established and well-understood strategy that helps shareholders earn a return on their investment. Repurchases give shareholders an opportunity to reinvest back into the underlying company or use these gains to create new businesses or invest elsewhere. In other words, share buybacks contribute positively to the economic cycle in the United States.

Issuers are currently subject to a host of reporting requirements regarding share buybacks. Item 703 of Regulation S-K mandates that issuers disclose on their Form 10-K information about the total number of shares purchased and the average price per share in a buyback. Exchange listing standards also generally require that issuers disclose information surrounding board authorization of a buyback.

Regrettably, the debate surrounding share buybacks over the last several years has been defined more by conjecture and hyperbole than it has been by evidence and facts. The most common argument in opposition to stock buybacks is that buybacks divert capital away from other purposes, such as R&D or workforce investments. This argument has been soundly refuted by recent research.<sup>1</sup> Further, R&D spending has reached historic highs,<sup>2</sup> and companies are planning wage increases for 2022 that outpace increases from 2020 and 2021.<sup>3</sup>

Another critique of stock buybacks is that they are used by companies to inflate share prices which, in turn, increases executive compensation. However, the Share Repurchase Proposal offers little research or evidence to support this claim. In fact, the SEC’s own staff stated in a 2020 study their conclusion that, based on the research available, there is likely no correlation between repurchase activity and efforts to “artificially” inflate stock prices.<sup>4</sup>

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<sup>1</sup> See e.g. Edmans, A. “The Case for Stock Buybacks” Harvard Business Review (September 15, 2017) (“A comprehensive survey of financial executives concluded that “repurchases are made out of the residual cash flow after investment spending.”). Other studies find that CEOs repurchase more stock when growth opportunities are poor, and when they have excess capital. Asness, C., Hazelkorn, T., & Richardson, S. Buyback derangement syndrome. Journal of Portfolio Management, available at [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3082460](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3082460)

<sup>2</sup> [The Economics of Stock Buybacks | Tax Foundation](#)

<sup>3</sup> Willis Towers Watson employer survey (July 2021), available at: <https://www.wtwco.com/en-US/News/2021/07/us-employers-planning-larger-pay-raises-for-2022-willis-towers-watson-survey-finds>

<sup>4</sup> SEC staff report “Response to Congress: Negative Net Equity Issuance” at 45 (“Three facts suggest that the theories inconsistent with firm value maximization cannot account for the majority of

The Share Repurchase Proposal unfortunately relies on misconceptions about buybacks and does not properly consider the benefits that share buybacks provide for shareholders. It also neglects to consider the impact and efficacy of existing disclosure requirements and whether they are truly failing to provide investors with material information.

The Share Repurchase Proposal contains prescriptive next-day reporting requirements that will fundamentally alter issuers' compliance obligations and significantly increase costs. Next-day reporting after an issuer "executes" a buyback could also have disruptive market implications and costs that are not fully explored in the proposal. For example, an issuer that conducts a buyback over the period of several consecutive days may see the cost of those repurchases rise as the market becomes aware the company is buying back its stock. Ultimately, the main beneficiaries of the next-day reporting requirement could be sophisticated traders that can use the new disclosures to their advantage—not the long-term shareholders the proposed rule purports to protect. This proposed reporting requirement would thus be contrary to the "information symmetry" that Chair Gary Gensler has supported in public statements, as sophisticated investors are permitted longer time frames to report their equity holdings under the current disclosure regime.

We are also concerned by the proposed amendments to Item 703 of Regulation S-K, which would require issuers to explain their "objective or rationale" for share repurchases. This new disclosure will provide little-to-no useful information to investors beyond what is already required.

Accordingly, we urge the SEC to reconsider the assumptions underpinning its Share Repurchase Proposal and to delay further consideration of the proposed rule until it has conducted further economic analysis of its potential impact, including its relation to the Rule 10b5-1 Proposal, as described in more detail below.

### **Rule 10b5-1 Proposal**

We appreciate the SEC's efforts to ensure regulations governing executive trading plans under Rule 10b5-1 do not contain loopholes and that investors are provided with adequate disclosure regarding these plans. Corporate executives are often in possession of material nonpublic

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repurchase activity. First, repurchase announcements are accompanied by stock price increases. This announcement effect does not dissipate over time, as one would expect if repurchases were based on efforts to manipulate share prices. Second, most of the money spent on repurchases over the past two years was at companies that either do not link managerial compensation to EPS-based performance targets or whose boards considered the impact of repurchases when determining whether EPS-based performance targets were met or in setting the targets, suggesting that other rationales motivated the repurchases. Third, option-based managerial compensation cannot account for the increased substitution from dividends to repurchases, since option pay has declined over the past 20 years. Collectively, these findings potentially suggest that most repurchase activity does not represent an effort to artificially inflate stock prices or influence the value of option-based or EPS-linked compensation.")

information (“MNPI”) regarding their company. It is critical for investors to have confidence in SEC rules that are designed to prohibit insider trading based off MNPI.

Rule 10b5-1 provides an affirmative defense for an individual that, prior to becoming aware of MNPI, enters into a binding contract to purchase or sell the company’s shares at a predetermined amount, price, and date. Since the SEC’s adoption of Rule 10b5-1 in 2000, these plans have been an effective tool to guard against perceptions that insiders are regularly using their knowledge of MNPI to trade.

In seeking to update Rule 10b5-1, the SEC should be careful that any new requirements do not make operating a plan so cost-prohibitive that insiders refrain from establishing a plan in the first place. We also urge the SEC to consider the wide universe of individuals at many companies that enter into 10b5-1 plans. It is not just named executive officers (“NEOs”) of large public companies that rely on Rule 10b5-1. In many cases mid-level executives at smaller issuers – whose net worth may be completely tied up in the company’s stock – rely on 10b5-1 plans to sell company stock over a set period of time. We also encourage the SEC to remain mindful of corporate uses of Rule 10b5-1 plans – namely, to effectuate share repurchases. The affirmative defense endemic to Rule 10b5-1 enables company employees to realize their compensation and companies to effectively manage capital reserves, and we are concerned that the SEC’s proposed rule could disincentivize the usage of 10b5-1 plans.

While we understand in principle the desire for a “cooling off” period to begin trading once a 10b5-1 plan is adopted, we question whether 120 days is appropriate or whether the period should be shorter. Since 120 days would always extend beyond the quarterly reporting period when a plan is first established, the underlying issuer will have released the most recent quarterly financial results before that cooling off period is over. We believe the SEC should explore whether a shorter time frame would achieve the same goal without mandating a long delay for the commencement of trading under a 10b5-1 plan.

We also echo Commissioner Peirce’s concern that the “good faith” requirement will create an “unintended incentive for directors or officers to consider their Rule 10b5-1 plans in connection with corporate actions long after establishing their plans” and that the safe harbor under 10b5-1 could be contingent upon a retroactive subjective judgement as to whether certain aspects of the plan were operated in “good faith.”<sup>5</sup> As noted above and when considered along with other aspects of the Rule 10b5-1 Proposal, we are concerned these provisions as currently written could be a major disincentive for individuals to adopt a 10b5-1 plan.

Finally, we believe that the SEC should consider the interrelated nature of the Share Repurchase Proposal and the Rule 10b5-1 Proposal and conduct a further analysis as to the impact of having both of those rules in effect. Unfortunately, the economic analysis contained in each rule does

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<sup>5</sup> Commissioner Hester Peirce - Statement on Rule 10b5-1 and Insider Trading Proposing Release (Dec. 15, 2021)

not appropriately consider the potential effect of the other and how, for example, daily disclosure of share buybacks implemented pursuant to a 10b5-1 plan could impact the repurchase cost for the issuer or how new limitations on 10b5-1 plans could impact companies' repurchase programs. We implore the SEC to consider these rules together rather than in isolation.

**Conclusion**

We appreciate the opportunity to comment on these proposals. We look forward to being a resource for the SEC and to working with commissioners and staff on these critical issues.

Sincerely,

American Property Casualty Insurance Association

American Securities Association

Center On Executive Compensation

U.S. Chamber of Commerce

Nareit

National Association of Manufacturers

NIRI: The Association for Investor Relations

**Supplemental Letter of September 20, 2022**





September 20, 2022

Ms. Vanessa Countryman  
Secretary  
U.S. Securities and Exchange Commission  
100 F Street NE  
Washington, DC 20549

**Re: Proposed Rule, Securities and Exchange Commission; Share Repurchase Disclosure Modernization Supplemental Letter; 87 Fed. Reg. 8443 (April 1, 2022)**

Dear Ms. Countryman:

The U.S. Chamber of Commerce’s (the Chamber) Center for Capital Markets Competitiveness appreciates the Commission taking the time to meet with us on September 1, 2022, to obtain additional information and comments about its proposed Share Repurchase Disclosure Modernization Rule (Proposed Rule). As discussed at our meeting, we are submitting this supplemental letter to memorialize and expand on two comments we provided verbally.

*First*, the Commission must redo its cost-benefit analysis of the Proposed Rule in light of the Inflation Reduction Act’s new excise tax on buybacks.

“The APA’s arbitrary-and-capricious standard requires that agency action be reasonable and reasonably explained.” *FCC v. Prometheus Radio Project*, 141 S. Ct. 1150, 1158 (2021). As part of that reasoned-decisionmaking requirement, an agency must take stock of a meaningful intervening event that occurs *after* a rule is proposed but *before* it is finalized—after all, if circumstances have changed, the assumptions and analyses that justified the rule in the first place may no longer hold. *See, e.g., Portland Cement Ass’n v. EPA*, 665 F.3d 177, 187 (D.C. Cir. 2011); *see also API v. Johnson*, 541 F. Supp. 2d 165, 185 (D.D.C. 2008) (finding arbitrary and capricious agency failure to consider intervening change in law). That commonsense requirement applies with particular force where, as here, an agency is charged by statute with “appris[ing] itself” of the “economic consequences of a proposed regulation before it decides whether to adopt the measure.” *U.S. Chamber of Com. v. SEC*, 412 F.3d 133, 144 (D.C. Cir. 2005).

Here, there are good reasons to think the Inflation Reduction Act's excise tax will have a material effect on the costs and benefits of the Proposed Rule. To name just a few:

- Much of the Proposed Rule was driven by a perceived “growth” in share buybacks, 87 Fed. Reg. at 8445, and the idea that this increased prevalence would justify the notable “fixed” compliance costs that would come with this new disclosure regime, *id.* at 8459. However, following the excise tax, the volume of buybacks will likely decline. Given that lower volume, it is doubtful this already strained tradeoff will continue to hold together. Rather, the fixed costs of the Proposed Rule will likely dwarf any investor benefits.
- The Proposed Rule acknowledges that it may harm investors because it may deter companies from using buybacks even when it “would otherwise be optimal for shareholder value.” *Id.* at 8459. It is likely that these harms will be compounded by the new excise tax, because the cost of that tax *plus* the costs of complying with the Proposed Rule may ultimately price out an even greater number of buybacks that otherwise would have been “optimal” for shareholders.
- One of the principal justifications for adopting the Proposed Rule is the notion companies use buybacks opportunistically—to manage earnings, inflate share prices, and the like. As the Chamber wrote before, that is seriously misguided. In all events, the new tax will change the economic calculus behind *any* buyback program. If the Commission determines that the tax itself will sufficiently deter what it sees as “opportunistic” buybacks (as opposed to “optimal” ones), the Proposed Rule may become even more of a regulation in search of a problem.

Given these possible effects of the new buyback excise tax, the Commission must assess the Proposed Rule's costs and benefits afresh. Anything less would be arbitrary and capricious. The Commission cannot reasonably maintain it has “apprised itself” of the Proposed Rule's real world “economic consequences,” as required by law, when its economic analysis was performed against a backdrop that no longer exists. In other words, because there is a strong possibility the Inflation Reduction Act's excise tax may have altered the costs and benefits of the Proposed Rule, the Commission is obliged to analyze the Proposed Rule against the *current* landscape before finalizing any regulation.

Thus, *even if* the Commission thinks its original cost-benefit analysis was sound—although, as the Chamber explained in its April 1, 2022 letter, the Proposed Rule harbors serious flaws—the Commission *still* must redo its analysis given that the facts on the ground have materially changed since the Rule was proposed. Although the Commission may decide to stay the course, under the APA, it cannot simply ignore intervening events and stick to its pre-Inflation Reduction Act analysis without, at minimum, first assessing whether that analysis has become outdated. Reasoned

decision-making requires up-to-date information. The Commission may not blind itself to changed circumstances so as to regulate on yesterday's data.

What's more, if the Commission performs a new cost-benefit analysis, it also must provide an appropriate opportunity for the public to comment on that analysis before the rule is finalized.

*Second*, the Proposed Rule contravenes the First Amendment.

The Supreme Court has made clear that the First Amendment broadly guards against compelled speech, even in the commercial context. *See, e.g., NIFLA v. Becerra*, 138 S. Ct. 2361, 2372 (2018). As then-Judge Kavanaugh summarized the law: "To justify a compelled commercial disclosure, assuming the Government articulates a substantial governmental interest, the Government must show that the disclosure is purely factual, uncontroversial, not unduly burdensome, and reasonably related to the Government's interest," at the very least. *Am. Meat Inst. v. USDA*, 760 F.3d 18, 34 (D.C. Cir. 2014) (*AMI*) (Kavanaugh, J., concurring in the judgment); *see also NIFLA*, 138 S. Ct. at 2372.

The Proposed Rule runs afoul of this established standard. Foremost, its "rationale or objective" disclosure requirement forces companies to provide something *other* than "purely factual, uncontroversial information about the terms under which services will be available." *NIFLA*, 138 S. Ct. at 2732. A company's *reason* for engaging in buybacks is different in kind from the mundane stuff of such rote disclosures. Rather, "[s]hare buybacks are one of the most controversial corporate decisions today." Alex Edmans, Harv. L. S. Forum on Corp. Governance (Oct. 22, 2020), <https://bit.ly/3KHOp1f>. The First Amendment forbids compelling companies to spell out the "rationale or objective" behind these freighted business decisions. *See Nat'l Ass'n of Mfrs. v. SEC*, 800 F.3d 518, 530 (D.C. Cir. 2015) (invalidating "conflict mineral" rule).

The rest of the Proposed Rule is similarly infirm. Even when it comes to "purely factual, uncontroversial information about the terms under which services will be available," the Government may not force businesses to speak when doing so would be unduly burdensome or when the disclosures are not adequately tailored to the governmental interests at stake. Even assuming this standard applies to the remainder of the Proposed Rule, it is a "stringent" test, not to be confused with rational basis review or some other deferential lens. *See AMI*, 760 F.3d at 34 (Kavanaugh, J., concurring in the judgment). As the Chamber explained in its April 1, 2022, letter, the burdens of the Proposed Rule far outweigh its purported benefits. Namely, the Proposed Rule fails to explain why monthly disclosures would not be adequate, and it does not acknowledge the compelled-speech burdens that come with a next-day reporting regime. The First Amendment demands more. At minimum, disclosure rules must be adequately tailored and reduce instances of compelled speech where

possible—the present unjustified insistence on next-day reporting falls far short of that command.

In short, the Proposed Rule suffers from two further defects—one procedural, and the other constitutional. The Chamber appreciates the invitation to add these comments to those that we already raised in our April 1, 2022, letter. As we reiterated in our meeting last week, we remain available to assist the Commission on this important issue.

Sincerely,

A handwritten signature in black ink, appearing to read 'TK' followed by a long, sweeping horizontal line.

Tom Quadman  
Executive Vice President  
Center for Capital Markets Competitiveness  
U.S. Chamber of Commerce

# Exhibit A



OFFICE OF  
INSPECTOR GENERAL

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549

**M E M O R A N D U M**

October 13, 2022

**TO:** Gary Gensler, Chair

**FROM:** Nicholas Padilla, Jr., Acting Inspector General

**SUBJECT:** *The Inspector General's Statement on the SEC's Management and Performance Challenges, October 2022*

The Reports Consolidation Act of 2000 requires the U.S. Securities and Exchange Commission's (SEC or agency) Office of Inspector General to identify and report annually on the most serious management and performance challenges facing the SEC.<sup>1</sup> In deciding whether to identify an area as a challenge, we consider its significance in relation to the SEC's mission; its susceptibility to fraud, waste, and abuse; and the SEC's progress in addressing the challenge. We compiled the attached statement on the basis of our past and ongoing audit, evaluation, investigation, and review work; our knowledge of the SEC's programs and operations; and information from the U.S. Government Accountability Office and SEC management and staff. We reviewed the agency's response to prior years' statements, and assessed its efforts to address recommendations for corrective action related to persistent challenges. We previously provided a draft of this statement to SEC officials and considered all comments received when finalizing the statement. As we begin fiscal year 2023, we again identified the following as areas where the SEC faces management and performance challenges to varying degrees:

- Meeting Regulatory Oversight Responsibilities
- Protecting Systems and Data
- Improving Contract Management
- Ensuring Effective Human Capital Management

Information on the challenge areas and the corresponding audit, evaluation, investigation, or review work are discussed in the attachment. If you have any questions, please contact me or Rebecca L. Sharek, Deputy Inspector General for Audits, Evaluations, and Special Projects.

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<sup>1</sup> Pub. L. No. 106-531, § 3a, 114 Stat. 2537-38 (November 22, 2000).

Attachment

cc: Prashant Yerramalli, Chief of Staff, Office of Chair Gensler  
Heather Slavkin Corzo, Policy Director, Office of Chair Gensler  
Kevin Burris, Counselor to the Chair and Director of Legislative and Intergovernmental Affairs  
Scott Schneider, Counselor to the Chair and Director of Public Affairs  
Ajay Sutaria, GC Counsel, Office of Chair Gensler  
Phillip Havenstein, Operations Counsel, Office of Chair Gensler  
Hester M. Peirce, Commissioner  
Benjamin Vetter, Counsel, Office of Commissioner Peirce  
Caroline A. Crenshaw, Commissioner  
Malgorzata Spangenberg, Counsel, Office of Commissioner Crenshaw  
Mark T. Uyeda, Commissioner  
Holly Hunter-Ceci, Counsel, Office of Commissioner Uyeda  
Jaime Lizárraga, Commissioner  
Laura D'Allaird, Counsel, Office of Commissioner Lizárraga  
Parisa Haghshenas, Counsel, Office of Commissioner Lizárraga  
Dan Berkovitz, General Counsel  
Elizabeth McFadden, Deputy General Counsel, General Litigation/Acting Managing Executive  
Lisa Helvin, Principal Deputy General Counsel for Adjudication and Oversight  
Kenneth Johnson, Chief Operating Officer  
Shelly Luisi, Chief Risk Officer  
Jim Lloyd, Audit Coordinator/Assistant Chief Risk Officer, Office of Chief Risk Officer



October 13, 2022

OFFICE OF  
INSPECTOR  
GENERAL

The Inspector General's  
Statement on the SEC's  
Management and  
Performance Challenges

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## ABBREVIATIONS

<b>CAT</b>	Consolidated Audit Trail
<b>CISA</b>	Cybersecurity and Infrastructure Security Agency
<b>COVID-19</b>	Coronavirus Disease 2019
<b>Enforcement</b>	Division of Enforcement
<b>EXAMS</b>	Division of Examinations
<b>FISMA</b>	Federal Information Security Modernization Act of 2014
<b>FY</b>	fiscal year
<b>GAO</b>	U.S. Government Accountability Office
<b>IT</b>	information technology
<b>Kearney</b>	Kearney & Company, P.C.
<b>LH</b>	labor-hour
<b>NAICS</b>	North American Industry Classification System
<b>OA</b>	Office of Acquisitions
<b>OASB</b>	Office of the Advocate for Small Business Capital Formation
<b>OHR</b>	Office of Human Resources
<b>OIAD</b>	Office of the Investor Advocate
<b>OIG</b>	Office of Inspector General
<b>OIT</b>	Office of Information Technology
<b>OMB</b>	Office of Management and Budget
<b>OMWI</b>	Office of Minority and Women Inclusion
<b>RIA</b>	registered investment adviser
<b>SAM</b>	System for Award Management
<b>SEC, agency, or Commission</b>	U.S. Securities and Exchange Commission
<b>SLC</b>	Service Level Commitment
<b>T&amp;M</b>	time-and-materials
<b>TCR</b>	tips, complaints, and referrals
<b>TRENDS</b>	Tracking and Reporting Examination National Documentation System
<b>WTTS</b>	Workforce Transformation and Tracking System

## CHALLENGE: Meeting Regulatory Oversight Responsibilities

The U.S. Securities and Exchange Commission (SEC, agency, or Commission) is charged with overseeing about \$118 trillion in annual securities trading on the United States equity markets and the activities of more than 29,000 registered entities, including investment advisers, mutual funds, exchange-traded funds, broker-dealers, municipal advisors, and transfer agents. The agency also oversees 24 national securities exchanges, 95 alternative trading systems, 10 credit rating agencies, and 7 active registered clearing agencies, as well as the Public Company Accounting Oversight Board, the Financial Industry Regulatory Authority, the Municipal Securities Rulemaking Board, the Securities Investor Protection Corporation, and the Financial Accounting Standards Board. In addition, the SEC is responsible for selectively reviewing the disclosures and financial statements of more than 7,900 reporting companies.

As in previous years, agency management and the Office of Inspector General (OIG) recognize that the SEC's ability to meet its mission of protecting investors, maintaining fair, orderly, and efficient markets, and facilitating capital formation becomes more challenging as the markets, products, and participants within the SEC's purview increase in size, number, and complexity. The SEC's strategic plan establishes goals and initiatives to ensure that the agency focuses on the needs of investors, as well as its ability to adapt to rapidly changing markets, new technology, innovation, and evolving global risks.<sup>1</sup>

We describe below the challenges of (1) managing resources while meeting the SEC's regulatory agenda; (2) keeping pace with changing markets and innovations; and (3) leveraging technology and analytics to meet mission requirements and respond to significant developments and trends.

### Managing Resources While Meeting the Regulatory Agenda

Rulemaking is the process by which federal agencies implement legislation passed by Congress and signed into law by the President and, as part of its regulatory oversight responsibilities, the SEC creates or updates rules (also referred to as "regulations"). Legislation, such as the Securities Act of 1933,<sup>2</sup> the Securities Exchange Act of 1934,<sup>3</sup> the Investment Company Act of 1940,<sup>4</sup> the Sarbanes-Oxley Act of 2002,<sup>5</sup> and the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (Dodd-Frank)<sup>6</sup> provide the framework for the SEC's oversight of the securities markets. The rulemaking process involves several steps that are designed to give the public an opportunity to provide their opinions on whether the agency should adopt or adopt with modifications a proposed rule. According to the Administrative Procedure Act,<sup>7</sup> agencies must follow an open process when issuing regulations, including publishing a

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<sup>1</sup> On October 11, 2018, the SEC issued a strategic plan for fiscal years 2018 to 2022. On August 24, 2022, the SEC released for public comment a draft strategic plan for fiscal years 2022 to 2026. As of the date of this document, the new strategic plan had not been finalized.

<sup>2</sup> Pub. L. 73-22, 48 Stat. 74 (May 27, 1933).

<sup>3</sup> Pub. L. 73-291, 48 Stat. 881 (June 6, 1934).

<sup>4</sup> Pub. L. 76-768, 54 Stat. 789 (August 22, 1940).

<sup>5</sup> Pub. L. 107-204, 116 Stat. 745 (July 30, 2002).

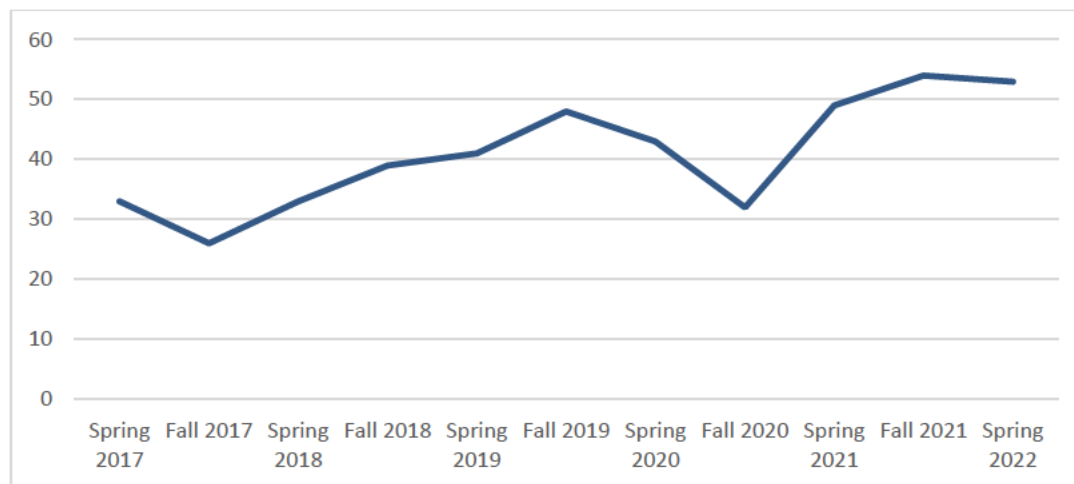
<sup>6</sup> Pub. L. 111-203, 124 Stat. 1376 (July 21, 2010).

<sup>7</sup> Pub. L. 79-404, 60 Stat. 237, 239 (June 11, 1946).



statement of rulemaking authority in the Federal Register for all proposed and final rules. Moreover, each fall and spring, regulatory agencies are required to publish a regulatory agenda,<sup>8</sup> which is how agencies announce future rulemaking activities and update the public on pending and completed regulatory actions. As Figure 1 shows, the number of rulemaking activities on the SEC's regulatory agenda between spring 2017 and spring 2022 increased overall.

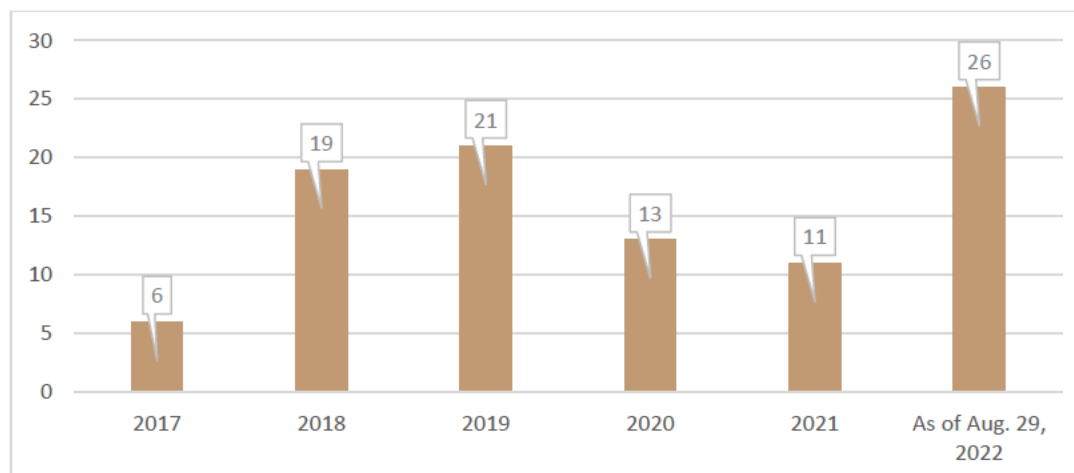
**FIGURE 1. Number of Rulemaking Activities on the SEC's Regulatory Agenda (Spring 2017 – Spring 2022)**



Source: *OIG-generated based on data from the Office of Management and Budget's (OMB) Office of Information and Regulatory Affairs (<https://www.reginfo.gov/public/> last accessed on September 8, 2022).*

Additionally, in only the first 8 months of 2022, the SEC proposed 26 new rules, which was more than twice as many new rules as proposed the preceding year and more than it had proposed in each of the previous 5 years. (See Figure 2.)

**FIGURE 2. Number of New SEC Rules Proposed (2017 – August 2022)**



Source: *OIG-generated based on data from the SEC (<https://www.sec.gov/rules/proposed.shtml>, as of August 29, 2022).*

<sup>8</sup> Pub. L. 96-354, 94 Stat. 1166 (September 19, 1980).

We met with managers from the SEC's divisions of Trading and Markets, Investment Management, Corporation Finance, and Economic and Risk Analysis, some of whom raised concerns about increased risks and difficulties managing resources and other mission-related work because of the increase in the SEC's rulemaking activities. For example, some reported an overall increase in attrition (discussed further on page 21 of this document) and difficulties hiring individuals with rulemaking experience. In the interim, managers reported relying on detailees, in some cases with little or no experience in rulemaking. Others told us that they may have not received as much feedback during the rulemaking process, either as a result of shortened timelines during the drafting process or because of shortened public comment periods. Although no one we met with identified errors that had been made, some believed that the more aggressive agenda—particularly as it relates to high-profile rules that significantly impact external stakeholders—potentially (1) limits the time available for staff research and analysis, and (2) increases litigation risk. Finally, some managers noted that fewer resources have been available to complete other mission-related work, as rulemaking teams have borrowed staff from other organizational areas to assist with rulemaking activities.

Furthermore, the SEC's rulemaking function relies on coordination and collaboration amongst several agency divisions and offices and, as we reported in our October 2021 statement on the SEC's management and performance challenges, agency leaders should take measures to strengthen communication and coordination across SEC components. Indeed, the SEC's fiscal year (FY) 2021 Agency Financial Report states that the SEC values teamwork and recognizes "that success depends on a skilled, diverse, coordinated team committed to the highest standards of trust, hard work, cooperation, and communication."<sup>9</sup> Additionally, the SEC's strategic plan identifies teamwork of the SEC's staff and its leaders, along with other elements, as the "foundation" of the agency.<sup>10</sup> To support the strategic plan's Goal 3 – "Elevate the SEC's performance by enhancing our analytical capabilities and human capital development" – the SEC committed to the following initiative:

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*3.5 Promote collaboration within and across SEC offices to ensure we are communicating effectively across the agency, including through evaluation of key internal processes that require significant collaboration.<sup>11</sup>*

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In response to our October 2021 statement on the SEC's management and performance challenges, agency management re-affirmed its commitment to promoting effective and collaborative information-sharing across the agency.<sup>12</sup> Management's continued attention to strengthening communication and coordination across divisions and offices is instrumental to (1) preventing unintentional negative impacts to divisions and offices when modifying agency-wide processes, (2) maintaining positive trends in employee views on collaboration,<sup>13</sup> and (3) achieving the goals established in the SEC's strategic plan.

<sup>9</sup> U.S. Securities and Exchange Commission, *Fiscal Year 2021 Agency Financial Report*; November 15, 2021.

<sup>10</sup> U.S. Securities and Exchange Commission, *Strategic Plan Fiscal Years 2018-2022*, Goal 3; October 11, 2018.

<sup>11</sup> The agency's draft strategic plan for FY 2022 to FY 2026 (Goal 3) similarly emphasizes the importance of continually strengthening and promoting collaboration within and across SEC offices.

<sup>12</sup> U.S. Securities and Exchange Commission, *Fiscal Year 2021 Agency Financial Report*; November 15, 2021.

<sup>13</sup> With regards to the 2021 Federal Employee Viewpoint survey, 71 percent of agency respondents agreed that SEC managers promote communication among different work units (a 4 percentage point decrease from the previous year). In addition, 75 percent of agency respondents agreed that SEC managers support collaboration across work units to accomplish work objectives (a 3 percentage point decrease from the previous year).

Despite management's commitment to cross-functional collaboration and communication, personnel we met with (including those from the Division of Economic and Risk Analysis, the Division of Enforcement [Enforcement], and the Office of the General Counsel, among others) identified coordination and communication as a persistent challenge in the rulemaking process, particularly given potential overlaps in jurisdiction and differences in opinions. We reported on such challenges in a management letter issued in September 2022.<sup>14</sup> Specifically, we reported that, around December 2021, the Office of the Chair modified the process for coordinating internal reviews of draft agency rules, resulting in the Office of the Advocate for Small Business Capital Formation (OASB)<sup>15</sup> and the Office of the Investor Advocate (OIAD)<sup>16</sup> receiving only fatal flaw drafts of proposed rules<sup>17</sup> for a brief period of time.<sup>18</sup> This change was not formally documented or communicated, and the then-directors of OASB and OIAD were not aware of the change until after it took effect. All parties involved acknowledged that the Office of the Chair has the authority to direct the agency's rulemaking process. Moreover, OASB and OIAD personnel stated that they were generally able to carry out their responsibilities. However, changes to internal processes likely to impact OASB's and OIAD's review and comment related to draft proposed agency rules may unintentionally limit their ability to fulfill their advocacy roles and carry out office functions, and may hinder effective collaboration and information sharing across the agency.<sup>19</sup> Although we did not make any formal recommendations, we encouraged the Office of the Chair to consider, as a management practice, notifying OASB and OIAD before future changes to the rulemaking process, potentially impacting these offices, are implemented.

## Keeping Pace With Changing Markets and Innovations

As securities markets continue to grow in size and complexity and technological advancements contribute to changes in how markets operate, the SEC's ability to remain an effective regulator requires that it continuously monitor the market environment, and as appropriate, adjust and modernize its expertise, rules, regulations, and oversight tools and activities.

Securities markets have experienced significant growth in recent years, with a record number of families holding direct and indirect stocks, and (as Table 1 shows) a record number of registered investment



*Technological advancements and commercial developments continue to change how our securities markets operate and spur the development of new products.*

Source: U.S. Securities and Exchange Commission, Fiscal Year 2021 Agency Financial Report, November 15, 2021.

<sup>14</sup> U.S. Securities and Exchange Commission, Office of Inspector General, *Final Management Letter: Changes to the Internal Review Process for Proposed Rules May Impact the Office of the Advocate for Small Business Capital Formation and the Office of the Investor Advocate* (September 29, 2022).

<sup>15</sup> The SEC Small Business Advocate Act of 2016 (Pub. L. No. 114-284, 130 Stat. 1447 [December 16, 2016]) requires OASB to advocate for small businesses and their investors by, among other things, analyzing the potential impact on small businesses and small business investors of Commission-proposed regulations that are likely to have a significant economic impact on small businesses and small business capital formation.

<sup>16</sup> Pursuant to Section 915 of Dodd-Frank and codified at Section 4(g) of the Exchange Act of 1934, OIAD is required to analyze the potential impact on investors from proposed rules and regulations of the Commission.

<sup>17</sup> A fatal flaw draft is the last draft circulated before the Commission votes on a proposed rule, often only a few days before the vote. It is typically the final version of the rule, to be reviewed only for critical issues, and will not incorporate policy revisions.

<sup>18</sup> According to agency officials, the change in the rulemaking process was reversed in early 2022.

<sup>19</sup> Other OIG work completed in FY 2022 also highlighted areas where collaboration and communication within the SEC could be improved. See U.S. Securities and Exchange Commission, Office of Inspector General, *The SEC Can Improve in Several Areas Related to Hiring* (Report No. 572; February 28, 2022).



**TABLE 1. Number of RIAs (FY 2018 – July 2022)**

Date	Number of RIAs
Beginning of FY 2018	12,616
Beginning of FY 2019	13,222
Beginning of FY 2020	13,458
Beginning of FY 2021	13,810
Beginning of FY 2022	14,719
As of July 1, 2022	15,167

Source: *OIG-generated based on data provided by EXAMS.*

Order outlines a national policy for digital assets to include protecting consumers, investors, and businesses.<sup>21</sup>

In recognition of the need to protect investors and respond to the changing environment, the SEC is taking steps to address the increasing risks related to the crypto market such as (1) getting platforms registered and regulated much like exchanges; (2) coordinating with the Commodity Futures Trading Commission on determining how best to regulate platforms where trading of securities and non-securities is intertwined; and (3) identifying how to work with platforms and best ensure the protection of customers' assets. Additionally, the SEC recently announced the allocation of 20 additional positions for Enforcement's Crypto Assets and Cyber Unit, nearly doubling its size, as the volatile and speculative crypto marketplace has attracted tens of millions of American investors and traders.<sup>22</sup> As the SEC continues to increase its workforce and take other steps to protect investors, there is uncertainty about which agency—the SEC or the Commodity Futures Trading Commission—will have regulatory oversight responsibilities over the crypto market and what legal tools and authorities will be available. Such uncertainty can unsettle market factors and elevate risk for Main Street investors.

EXAMS also recognizes and strives to adapt to changing market factors. In its 2022 Examinations Priorities,<sup>23</sup> EXAMS noted significant focus areas that pose unique or emerging risks to investors or the markets, such as environmental, social, and governance investing; standards of conduct issues for broker-dealers and RIAs; and emerging technologies and crypto-assets, among others. EXAMS will continue to conduct examinations of broker-dealers and RIAs, many of which use developing financial technologies, and market participants engaged with crypto-assets, with a continued need to optimize its limited resources as it works to improve and promote compliance with regulatory requirements.

In a report we issued in January 2022, we noted steps EXAMS took to optimize its limited resources and increase efficiency and effectiveness, to include the following:

<sup>20</sup> The White House (March 9, 2022). *FACT SHEET: President Biden to Sign Executive Order on Ensuring Responsible Development of Digital Assets.*

<sup>21</sup> *Executive Order on Ensuring Responsible Development of Digital Assets*; March 9, 2022.

<sup>22</sup> Gurbir S. Grewal Director, Division of Enforcement, Testimony on "Oversight of the SEC's Division of Enforcement" Before the United States House of Representatives Committee on Financial Services Subcommittee on Investor Protection, Entrepreneurship, and Capital Markets; July 21, 2022.

<sup>23</sup> U.S. Securities and Exchange Commission, *Division of Examinations 2022 Examination Priorities*; March 30, 2022.

- Moved its Tracking and Reporting Examination National Documentation System (TRENDS) to a new, cloud-based platform, which is expected to improve the system's adaptability, workflow capability, and data standardization;
- Launched a new examination support service, which among other things, assists examiners with data staging, cleansing, transformation, enrichment, and analysis; and
- Advanced its centralized asset verification program, which, according to EXAMS management, has enabled growth in the number of exams involving asset verification, as well as the amount of assets verified during these exams.<sup>24</sup>

Although EXAMS took these and other steps to increase efficiencies, we also reported that controls over the RIA examination planning processes needed improvement. Specifically, we found some staff commenced substantive RIA examination procedures before management approved the examination pre-fieldwork phase, and staff did not always consistently maintain key documents in TRENDS. In addition, we were unable to find documentation indicating that an examination supervisor notified registrants of non-EXAMS staff participation, as required.

We recommended that management (1) develop controls that help ensure timely supervisory approval of an examination's pre-fieldwork phase; (2) reiterate to examination staff and management the importance of and requirements for timely supervisory approval of each examination's pre-fieldwork phase; and (3) review examination documentation requirements regarding communications with registrants to ensure they are clear and examiners maintain such documentation in a consistent manner, and update examination policies as needed. Management concurred with our recommendations, which, as of the date of this document, are open and will be closed upon completion and verification of corrective action taken.

As we begin FY 2023, we will continue to monitor agency plans and actions to improve controls around supervisory approval of examinations' pre-fieldwork phase and documentation requirements regarding communications with registrants.

## **Use of Technology and Analytics to Meet Mission Requirements and Respond to Significant Developments and Trends**

As we reported in previous years, agency management and the OIG continue to recognize the importance of technology and analytics in the SEC's ability to efficiently and effectively meet mission requirements and respond to significant developments and trends in the evolving capital markets. The SEC's strategic plan (Goals 2 and 3, and related strategic initiatives) reflects the importance of these efforts.<sup>25</sup> Additionally, according to the SEC's FY 2023 Congressional Budget Justification, the economy's reliance on the rapidly changing field of data analytics is growing, and the Commission needs to adjust by

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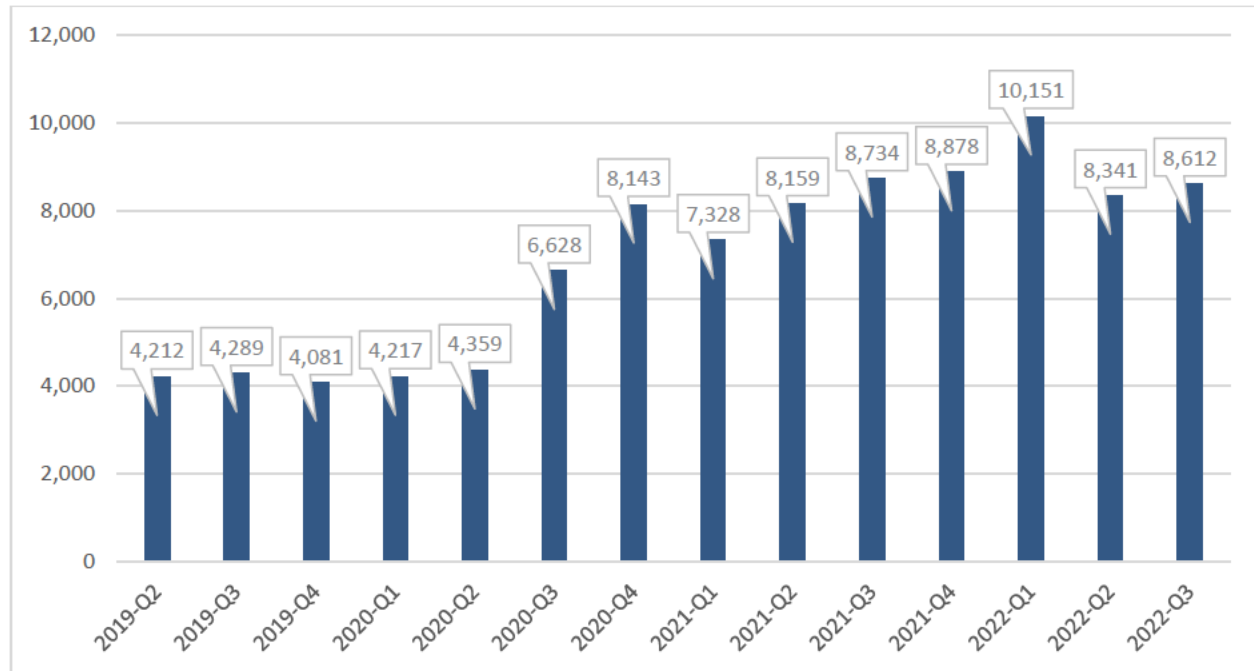
<sup>24</sup> U.S. Securities and Exchange Commission, Office of Inspector General, *Registered Investment Adviser Examinations: EXAMS Has Made Progress To Assess Risk and Optimize Limited Resources, But Could Further Improve Controls Over Some Processes* (Report No. 571, January 25, 2022).

<sup>25</sup> The agency's draft strategic plan for FY 2022 to FY 2026 (Goals 1, 2, and 3) similarly emphasizes that the SEC must effectively use technology and data.

re-evaluating how it assesses data and incorporates machine learning and deep learning into its examination and enforcement functions.<sup>26</sup>

Notably, Enforcement analyzes a massive volume of data each year including thousands of tips, complaints, and referrals (TCR) related to allegations of possible violations of the federal securities laws or conduct that poses a risk of harm to investors. Enforcement receives TCRs from the public, self-regulatory organizations, other federal and local agencies, and other entities. As Figure 3 shows, the SEC received a record number of TCRs in the first quarter of 2022.

**FIGURE 3. Number of TCRs Received (2019, Quarter 2 – 2022, Quarter 3)**



Source: OIG-generated based on data provided by Enforcement’s Office of Market Intelligence. FY 2021 totals exclude 12,935 TCRs related to the market volatility event, and totals exclude TCRs submitted as test TCRs to validate the system.

In an evaluation report we issued in February 2021, we reported on the SEC’s process to plan and develop a future TCR system and we recommended actions to further strengthen the SEC’s TCR program and TCR system management and development.<sup>27</sup> We also encouraged management to monitor the upward trend in TCRs, and determine whether additional actions, resources, or staff allocations were needed. Management has since taken actions to address our recommendations and is working to implement a new TCR management system. According to Enforcement’s Office of Market Intelligence, the organization implemented a risk-based process to assess and triage TCRs through the use of analytics and automation, which will be incorporated into the new TCR system. In planning for the new system, the agency continues to assess the application and data, conduct market research on potential technologies, and prepare a strategic plan.

<sup>26</sup> U.S. Securities and Exchange Commission, *Fiscal Year 2023 Congressional Budget Justification and Annual Performance Plan; Fiscal Year 2021 Annual Performance Report*; March 28, 2022.

<sup>27</sup> U.S. Securities and Exchange Commission, Office of Inspector General, *The SEC Can Further Strengthen the Tips, Complaints, and Referrals Program* (Report No. 566; February 24, 2021).

Although we acknowledge the Office of Market Intelligence's use of analytics and implementation of a new TCR system, the TCR program—along with many other critical programs and systems within the SEC—must rely on personnel to correctly input data into systems. For example, with the handling of TCRs, agency staff from divisions and offices must be sure to correctly transfer TCRs to the Office of Market Intelligence. As noted in a management letter our office issued in May 2021, we identified 2 matters of 3,303 we reviewed that were not transferred from the Office of Investor Education and Advocacy to the TCR system.<sup>28</sup> Moreover, in FY 2022, we investigated the former SEC Ombudsman and found that the former Ombudsman failed to enter TCRs on investor matters received by the Office of the Ombudsman that warranted entry, as required by the SEC's *Commission-Wide Policies and Procedures for Handling TCRs*. Specifically, the agency's policy and corresponding administrative regulation<sup>29</sup> state that all SEC staff are responsible for entering TCRs into the TCR system or forwarding them to a TCR point of contact within specified timeframes, and "when in doubt, staff should err on the side of entering a TCR." Instead, the former Ombudsman directed staff within the Office of the Ombudsman to refer investors to enter their own TCRs on matters related to alleged securities law violations or fraud. As

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*Improper handling of TCRs may impede  
SEC investor protection efforts*

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previously noted, through the TCR program, the SEC receives and responds to credible allegations of possible violations of the federal securities laws. Improper handling of TCRs may impede the SEC's ability to timely and effectively protect investors.

**Ongoing and Anticipated OIG Work.** In FY 2023, we will continue to assess how well the SEC effectively and efficiently meets its regulatory oversight responsibilities. We will follow-up on open recommendations intended to improve controls around the examination program, and we will complete an ongoing audit of the SEC's whistleblower program and an evaluation of Enforcement's efforts and goals to expedite investigations, where possible and appropriate. Finally, we will initiate a review of the SEC's oversight of entity compliance with Regulation Best Interest and Form CRS.<sup>30</sup>

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<sup>28</sup> U.S. Securities and Exchange Commission, Office of Inspector General, *Final Management Letter: Actions May Be Needed To Improve Processes for Receiving and Coordinating Investor Submissions* (May 24, 2021).

<sup>29</sup> U.S. Securities and Exchange Commission, SEC Administrative Regulation 3-2, *Tips, Complaints, and Referrals (TCR) Intake Policy*, November 29, 2016.

<sup>30</sup> Regulation Best Interest, the new Form CRS Relationship Summary, and two separate interpretations under the Investment Advisers Act of 1940 are part of a package of rulemakings and interpretations adopted by the Commission on June 5, 2019, to enhance and clarify the standards of conduct applicable to broker-dealers and investment advisers, help retail investors better understand and compare the services offered and make an informed choice of the relationship best suited to their needs and circumstances, and foster greater consistency in the level of protections provided by each regime, particularly at the point in time that a recommendation is made.



## CHALLENGE: Protecting Systems and Data

Because the work of the SEC touches nearly every part of the nation's capital markets and advances international regulatory, supervisory, and enforcement cooperation, it is critically important to protect agency systems and data. In 2022, the Administration along with the Cybersecurity and Infrastructure Security Agency (CISA) warned that malicious cyber activity against the United States homeland could have an impact on our nation's organizations, and threats are more pronounced because of international events.<sup>31</sup> The U.S. Government Accountability Office (GAO) also reported that cyber risks are growing, and cyberattacks targeting critical infrastructure—including financial services—could affect entire systems and result in catastrophic financial loss.<sup>32</sup> Individuals or groups with malicious intentions attempt to intrude into agency systems to obtain sensitive information, commit fraud and identity theft, disrupt agency operations, or launch attacks against other systems and networks. Even in the absence of those intentions, inadequate safeguards can lead to the unauthorized disclosure, modification, use, or disruption of information that can compromise the integrity of agency operations. Therefore, the SEC must continue to take steps to safeguard the security, integrity, and availability of its information systems and sensitive data.

SEC management has recognized that “efficient, effective, and responsible use of data and information technology (IT) is a crucial focus of the agency.”<sup>33</sup> In its FY 2023 Congressional Budget Justification, the agency requested additional funds for IT initiatives to expand progress in key areas such as cybersecurity, secure cloud infrastructure, and data management. CISA is also continuing to publish guidance to make the federal civilian workforce more resilient to cyber threats.

The SEC's FY 2023 budget request addresses plans to hire additional personnel within the Office of Information Technology (OIT) who would provide expertise in cloud computing; strengthen security controls, policies, and procedures; and help the agency comply with requirements mandated in a recent Executive Order to move the agency toward a “zero trust” approach to cybersecurity.<sup>34</sup> Additionally, as we describe further below, opportunities exist to better protect SEC systems and data, including by evaluating and addressing the underlying cause(s) and impact of a material weakness related to insufficient user access controls, strengthening the agency's cybersecurity posture, and continuing to mature its information security program.



*A critical element of the SEC's strategy is to protect the agency's two most important assets, its people and its data, both of which are vital to executing the SEC's mission.*

Source: U.S. Securities and Exchange Commission, *Fiscal Year 2021 Agency Financial Report*; November 15, 2021.

<sup>31</sup> The White House (March 21, 2022). *FACT SHEET: Act Now to Protect Against Potential Cyberattacks*; and CISA, *Shields Up* website (<https://www.cisa.gov/shields-up>, last accessed on September 9, 2022).

<sup>32</sup> U.S. Government Accountability Office, *CYBER INSURANCE Action Needed to Assess Potential Federal Response to Catastrophic Attacks* (GAO-22-104256, June 2022).

<sup>33</sup> U.S. Securities and Exchange Commission, *Fiscal Year 2023 Congressional Budget Justification and Annual Performance Plan; Fiscal Year 2021 Annual Performance Report*; March 28, 2022.

<sup>34</sup> Executive Order 10460, *Improving the Nation's Cybersecurity*; May 12, 2021.

## Evaluating and Addressing the Cause(s) and Impact of a Material Weakness Related to Insufficient User Access Controls

In its FY 2021 Agency Financial Report, the SEC disclosed a newly discovered material weakness associated with lack of controls related to user access to a Commission system. Specifically, the SEC reported that the information tracking and document storage system for documents related to recommendations for certain Commission actions did not include controls sufficient to prevent access by staff who should not view such documents.<sup>35</sup> This is important because, while the Commission has both investigatory and adjudicatory responsibilities, the Administrative Procedure Act contemplates the separation of those functions among the agency staff who assist the Commission in each.<sup>36</sup> Therefore, agency employees who are investigating or prosecuting an adjudicatory matter before the Commission generally may not participate in the Commission's decision-making in that or a factually related matter. However, the identified user access control deficiency did not ensure the necessary separation of the Commission's enforcement and adjudicatory functions for administrative adjudications. The SEC's FY 2021 Agency Financial Report further noted that, while a review of the affected system was underway, action had been taken to remediate the control deficiency.

Then, in April 2022, the Commission released a statement that provided additional information about the control deficiency, along with the results of the SEC's review of the impact of the control deficiency on two ongoing federal court litigations: *SEC v. Cochran*, No. 21-1239 (S. Ct.), and *Jarkesy v. SEC*, No. 20-61007 (5th Cir.). The statement reads, in part:

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*The Commission has determined that, for a period of time, certain databases maintained by the Commission's Office of the Secretary were not configured to restrict access by Enforcement personnel to memoranda drafted by Adjudication staff. As a result, in a number of adjudicatory matters, administrative support personnel from Enforcement, who were responsible for maintaining Enforcement's case files, accessed Adjudication memoranda via the Office of the Secretary's databases. Those individuals then emailed Adjudication memoranda to other administrative staff who in many cases uploaded the files into Enforcement databases.<sup>37</sup>*

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With respect to these two matters, according to the Commission's statement, agency enforcement staff had access to certain adjudicatory memoranda, but this access "did not impact the actions taken by the staff investigating and prosecuting the cases or the Commission's decision-making in the matters."

The SEC is continuing to review and has not yet disclosed the full impact the internal control deficiency caused by the insufficient user access controls had on the remaining affected adjudicatory matters. The Commission's statement indicated that the agency's review team will continue to assess the remaining

<sup>35</sup> U.S. Securities and Exchange Commission, *Agency Financial Report Fiscal Year 2021*; November 15, 2021.

<sup>36</sup> Pub. L. 79-404 60 Stat. 240 (June 11, 1946).

<sup>37</sup> U.S. Securities and Exchange Commission, *Commission Statement Relating to Certain Administrative Adjudications*; April 5, 2022.

affected adjudicatory matters, and additional findings will be published “in the near future.” Furthermore, the Commission stated that, going forward, it will work to better protect the separation of adjudicatory work-product within the system for administrative adjudications, including by enhancing systems for controlling access to Adjudication memoranda.

In conjunction with the ongoing FY 2022 evaluation of the SEC’s implementation of the Federal Information Security Modernization Act of 2014 (FISMA), we assessed the SEC’s incident response related to this control deficiency, and found that the agency generally complied with applicable requirements. Nonetheless, the OIG will continue to independently review the control deficiency to understand and, as appropriate, report the full impact of this material weakness. We also will continue to monitor the agency’s progress towards redesigning or replacing the systems in question.

### Strengthening the SEC’s Cybersecurity Posture

The SEC is aware that protecting information systems and data is a priority, as cyber actors may exploit poor security configurations (either misconfigured or left unsecured), weak controls, and other poor cyber hygiene practices to gain initial access or as part of other tactics to compromise a system. In FY 2022, the SEC’s OIT made progress by taking corrective action sufficient to close one cybersecurity-related recommendation from a previous OIG report.<sup>38</sup> However, as Table 2 summarizes, work remains to close other cybersecurity-related recommendations we issued before FY 2021.

**TABLE 2. Certain Open Cybersecurity Recommendations as of October 2022\***

Report Title	Date Issued	Recommendation(s)
<i>Opportunities Exist To Improve the SEC’s Management of Mobile Devices and Services</i> (Report No. 562)	9/30/20	Recommendations 5 and 6 Current estimated corrective action completion date: February 2023

Source: OIG-generated based on recommendation tracking and follow-up records.

\* This does not include recommendations issued in connection with mandated annual information security evaluations, which we discuss on pages 13 and 14 of this document.

Recognizing there is more work to be done, in FY 2023, the SEC plans to increase efforts to:

- Support the implementation of security services within agency-selected cloud capabilities.
- Enhance identity, access, and privilege management protocols and operations across platforms.
- Modernize security operations capabilities focusing on automation, integration of shared services and experts through managed services, and proactive capabilities to identify threats.
- Continue the implementation of a secure application development structure across all agency development teams and projects.<sup>39</sup>

<sup>38</sup> U.S. Securities and Exchange Commission, Office of Inspector General, *The SEC Can More Strategically and Securely Plan, Manage, and Implement Cloud Computing Services* (Report No. 556; Nov. 7, 2019), Recommendation 3.

<sup>39</sup> U.S. Securities and Exchange Commission, *Fiscal Year 2023 Congressional Budget Justification and Annual Performance Plan; Fiscal Year 2021 Annual Performance Report*; March 28, 2022.



The SEC also has an open recommendation from a recent GAO report on assessing security controls related to telework. The CARES Act of 2020 contains a provision for GAO to monitor the federal response to the pandemic. Specifically, GAO was asked to examine federal agencies' preparedness to support expanded telework. In September 2021, GAO issued its report, which contained two recommendations for the SEC regarding the assessment and documentation of relevant IT security controls and enhancements.<sup>40</sup> Although the agency's comments to the report state that the SEC expected to complete actions to remediate the recommendations by the second quarter of FY 2022, as of September 15, 2022, remediation work was still underway for the recommendation related to ensuring that the agency documents relevant IT security controls and enhancements in the security plan for the system that provides remote access for telework. GAO concluded that if agencies do not sufficiently document relevant security controls, assess the controls, and fully document remedial actions for weaknesses identified in security controls, then agencies are at increased risk that vulnerabilities in their systems that provide remote access could be exploited.

The SEC also faces cybersecurity challenges with respect to its access, use, and security of data available through the Consolidated Audit Trail (CAT). Pursuant to an SEC rule (Rule 613), self-regulatory organizations have submitted a national market system plan to create, implement, and maintain a consolidated order tracking system, or CAT, that when fully implemented will capture customer and order event information for orders in national market system securities, across all markets, from the time of order inception through routing, cancellation, modification, or execution. In its FY 2023 budget request, the SEC noted that the CAT continues to roll out functionality as the phased launch of broker-dealer reporting and regulator functionality progresses. Because CAT data is highly sensitive, the SEC must continue working to establish an environment and applications to appropriately secure the data accessed and used by the SEC as it becomes available.

## Maturing the SEC's Information Security Program

Effective information security controls are essential to protecting the SEC's information systems and the data contained therein. To help the SEC establish and maintain effective information security controls and to comply with FISMA, the OIG annually evaluates the SEC's implementation of FISMA information security requirements and the effectiveness of the agency's information security program on a maturity model scale.<sup>41</sup> The OIG contracted with Kearney & Company, P.C. (Kearney) to conduct the FY 2021 independent evaluation and, on December 21, 2021, issued the report titled, *Fiscal Year 2021 Independent Evaluation of SEC's Implementation of the Federal Information Security Modernization Act of 2014* (Report No. 570).<sup>42</sup>

As stated in Report No. 570, since FY 2020, OIT improved aspects of the SEC's information security program. Among other actions taken, the SEC refined its management of security training roles and responsibilities, enhanced its security training strategy, implemented the agency's policy for specialized security training, optimized a vulnerability disclosure policy, refined its configuration management

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<sup>40</sup> U.S. Government Accountability Office, *COVID-19: Selected Agencies Overcame Technology Challenges to Support Telework but Need to Fully Assess Security Controls* (GAO-21-583, September 2021).

<sup>41</sup> Pub. L. No. 113-283, § 3555, 128 Stat. 3073 (2014).

<sup>42</sup> As previously stated, the FY 2022 FISMA evaluation is ongoing and will be completed in the first quarter of FY 2023.

processes related to reconciliation of software code in production, improved its incident response information-sharing capabilities, and improved its contingency planning capabilities. Notably, these improvements occurred despite the unique challenges presented by Coronavirus Disease 2019 (COVID-19).

Although the SEC strengthened its program, Kearney determined for FY 2021 that the agency's information security program did not meet annual Inspector General FISMA reporting metrics' definition of "effective," which requires the simple majority of domains to be rated as Level 4 ("Managed and Measurable").<sup>43</sup> As stated in Report No. 570, the SEC's maturity level for the five Cybersecurity Framework security functions ("identify," "protect," "detect," "respond," and "recover") and related domains was primarily Level 3 ("Consistently Implemented") or Level 4 ("Managed and Measurable"). Although the SEC's program, as a whole, did not reach the level of an effective information security program, the agency showed significant improvement at the domain level. Specifically, the agency's assessed maturity level for the Security Training domain increased from Level 2 ("Defined") to Level 5 ("Optimized"). Table 3 shows the SEC's FISMA ratings in FY 2020 and FY 2021.

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*In FY 2021, the SEC's maturity level was primarily "Consistently Implemented" or "Managed and Measurable"*

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**TABLE 3. Summary of SEC FISMA Ratings (FY 2020 and FY 2021)**

Domain	Assessed Rating By FY	
	2021	2020
Risk Management	Level 3: <i>Consistently Implemented</i>	Level 3: <i>Consistently Implemented</i>
Supply Chain Risk Management	Level 1: <i>Ad Hoc</i>	<i>Not Applicable</i>
Configuration Management	Level 2: <i>Defined</i>	Level 2: <i>Defined</i>
Identity and Access Management	Level 2: <i>Defined</i>	Level 2: <i>Defined</i>
Data Protection and Privacy	Level 3: <i>Consistently Implemented</i>	Level 3: <i>Consistently Implemented</i>
Security Training	Level 5: <i>Optimized</i>	Level 2: <i>Defined</i>
Information Security Continuous Monitoring	Level 3: <i>Consistently Implemented</i>	Level 3: <i>Consistently Implemented</i>
Incident Response	Level 4: <i>Managed and Measurable</i>	Level 4: <i>Managed and Measurable</i>
Contingency Planning	Level 4: <i>Managed and Measurable</i>	Level 4: <i>Managed and Measurable</i>

Source: OIG-generated based on Exhibit 1 from Report No. 570.

Report No. 570 included eight new recommendations to strengthen the SEC's information security program, and highlighted opportunities to improve in all nine FY 2021 Inspector General FISMA reporting metric areas. To date, the SEC has taken corrective action sufficient to close three of these eight recommendations. However, five recommendations from prior year FISMA reports remain open (two from

<sup>43</sup> FY 2021 Inspector General Federal Information Security Modernization Act of 2014 (FISMA) Reporting Metrics, Version 1.1; May 12, 2021.

FY 2017,<sup>44</sup> one from FY 2018,<sup>45</sup> and two from FY 2020<sup>46</sup>). We commend agency management for the actions taken to date, and encourage management to promptly act on all opportunities for improvement identified in previous FISMA reports to help minimize the risk of unauthorized disclosure, modification, use, and disruption of the SEC's sensitive, non-public information, and to assist the agency's information security program reach the next maturity level.

Finally, we continue to track the agency's progress related to an audit of the SEC's enterprise architecture (*Additional Steps Are Needed For the SEC To Implement a Well-Defined Enterprise Architecture*; Report No. 568, issued September 29, 2021). In our report, we highlighted six recommendations to improve the SEC's implementation of a well-defined enterprise architecture (four of which remain open), and one recommendation to improve the SEC's oversight of enterprise architecture support services contracts (which is closed). We understand that the agency has efforts underway to develop an enterprise roadmap for future years, and the remaining four recommendations will be closed upon completion and verification of corrective action taken.

Fully implementing recommended corrective actions from these audits and evaluations may assist the SEC as it seeks to mature aspects of its information security program, generally, and its IT program and program management, specifically.

***Ongoing and Anticipated OIG Work.*** In FY 2023, we will continue to assess the SEC's efforts to secure its systems and data and mature its information security program. Specifically, we will continue to assess the reported user access control deficiency matter, follow-up on open recommendations, complete the ongoing FY 2022 FISMA evaluation, and initiate the FY 2023 FISMA evaluation. We will also review the SEC's efforts to establish a secure environment and applications to use CAT data, determine whether the SEC implemented adequate security controls to safeguard information and IT resources during maximum telework, and assess steps the SEC has planned or taken to address "zero trust" requirements.

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<sup>44</sup> U.S. Securities and Exchange Commission, Office of Inspector General, *Audit of the SEC's Compliance With the Federal Information Security Modernization Act for Fiscal Year 2017* (Report No. 546; March 30, 2018).

<sup>45</sup> U.S. Securities and Exchange Commission, Office of Inspector General, *Fiscal Year 2018 Independent Evaluation of SEC's Implementation of the Federal Information Security Modernization Act of 2014* (Report No. 552; December 17, 2018).

<sup>46</sup> U.S. Securities and Exchange Commission, Office of Inspector General, *Fiscal Year 2020 Independent Evaluation of SEC's Implementation of the Federal Information Security Modernization Act of 2014* (Report No. 563; December 21, 2020).

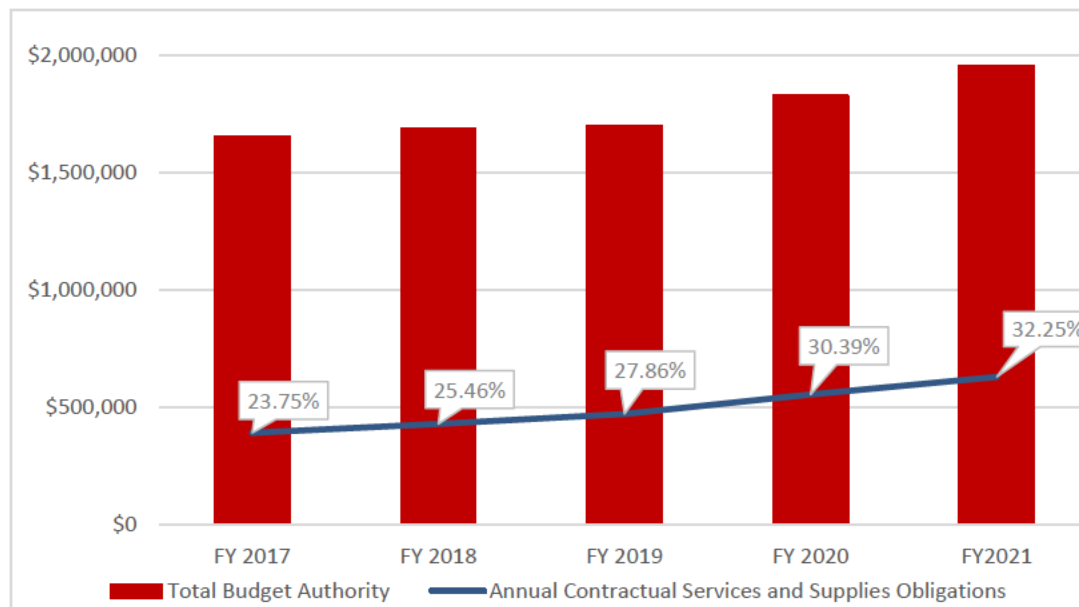
## CHALLENGE: Improving Contract Management

### Synopsis and Trends in SEC Contracting

The SEC substantially relies on contractor support to accomplish its mission. Contractor support is obtained through a variety of methods, including enterprise-wide contracts, U.S. General Services Administration multiple award schedule contracts, government-wide acquisition contracts, and multi-agency contracts. As markets are ever evolving and increasing in complexity, the SEC relies on contractors for technical and subject matter expertise including, but not limited to, professional legal and investigation-related services; support in areas of accounting, analytics, and examinations; and human resources support services.

To fund its contract requirements, the SEC's FY 2023 budget request included nearly \$610 million for contractual services and supplies,<sup>47</sup> which represents about 28 percent of the total \$2.149 billion requested for agency operations. As we reported in last year's statement on the SEC's management and performance challenges, annual obligations for contractual services and supplies, when expressed as a percentage of the SEC's total annual budget authority, has been increasing. This trend continued in FY 2021, with annual obligations for contractual services and supplies equaling about 32 percent of the SEC's total annual budget authority. (See Figure 4.)

**FIGURE 4. SEC Annual Contractual Services and Supplies Obligations, in Thousands, as a Percentage of Total Annual Budgetary Authority (FY 2017 – FY 2021)**

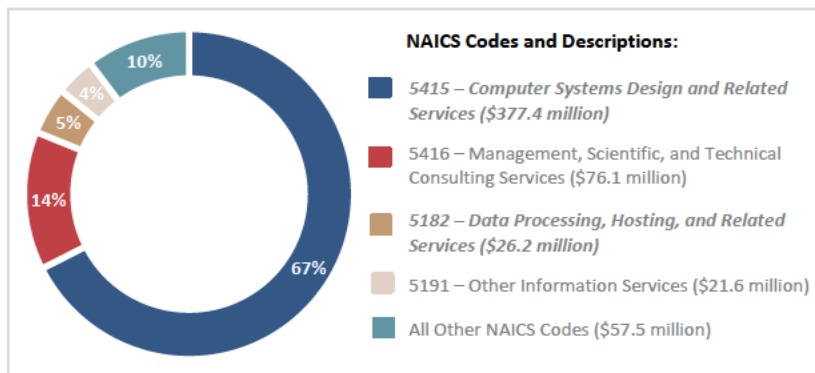


Source: OIG-generated based on annual actual obligations by object class as reported in the SEC's Congressional Budget Justifications for FY 2019 through FY 2023.

<sup>47</sup> According to OMB Circular No. A-11, *Preparation, Submission, and Execution of the Budget* (August 2022), the contractual services and supplies object class covers purchases in object classes 21.0 through 26.0 (Travel and transportation of persons; Transportation of things; Rent, Communications, and Utilities; Printing and reproduction; Other contractual services; and Supplies and materials).

As contract obligations are approaching nearly a third of the agency's annual budget authority, it is essential that the SEC's acquisition workforce effectively manage these resources. Government contracts continue to be an attractive target for fraudsters. In 2021, GAO issued two reports related to contract fraud schemes within the government, focusing on programs within the Department of Defense and the Department of Energy.<sup>48</sup> The SEC is not invulnerable to such schemes and must remain vigilant, closely monitoring areas of risk. For example, GAO identified fraudulent billing schemes as a risk to the procurement process, and the SEC OIG has participated in cross-agency investigative efforts to fight fraudsters who impersonate government officials and submit false purchase orders associated with real government contracts, the terms of which are publicly available.

**FIGURE 5. Top NAICS Codes Associated With the SEC's FY 2022 Contract Obligations**



Source: OIG-generated from data retrieved from [SAM.gov](https://sam.gov) on October 6, 2022.

Although the SEC procures a wide range of services and supplies, the majority of the agency's contract support by dollars obligated is for IT services. These services include, among others, application management, business solutions delivery, IT infrastructure and support services, information security, IT governance and program strategy, data management, and software

services. We reviewed the top North American Industry Classification System (NAICS) codes<sup>49</sup> associated with SEC contracts in FY 2022, as reported through the System for Award Management ([SAM.gov](https://sam.gov)),<sup>50</sup> and noted that, of the nearly \$560 million obligated to contract actions that year and included in the system, the SEC obligated about 72 percent (or about \$404 million) to vendors doing business under just two IT service-related NAICS codes: one for computer systems design and related services, and another for data processing, hosting, and related services. (See Figure 5.) This represents a slight increase over FY 2021 and a more significant increase over FY 2020 (when obligations under the same two NAICS codes totaled about \$401 million and \$351 million, respectively).<sup>51</sup>

<sup>48</sup> U.S. Government Accountability Office, *DOD FRAUD RISK MANAGEMENT Actions Needed to Enhance Department-Wide Approach, Focusing on Procurement Fraud Risks* (GAO-21-309, August 2021); and *DEPARTMENT OF ENERGY CONTRACTING Improvements Needed to Ensure DOE Assesses Its Full Range of Contracting Fraud Risks* (GAO-21-44, January 2021).

<sup>49</sup> NAICS is a comprehensive industry classification system that covers all economic activities and groups establishments into industries based on the similarity of their production processes. Among other things, U.S. statistical agencies use NAICS to provide uniformity and comparability in the presentation of statistical data describing the U.S. economy. Federal Acquisition Regulation 19.102(b) requires contracting officers to assign one NAICS code to all government solicitations, contracts, and task and delivery orders based on the product or service being acquired and its principal purpose. In this document, "top NAICS codes" refers to those codes that represent the largest amounts in terms of total annual amounts obligated.

<sup>50</sup> SAM is a U.S. General Services Administration Federal Government computer system that, among other things, allows users to create and run reports of detailed information on contract actions that are required to be reported by federal agencies. These are actions with an estimated value of \$10,000 or more.

<sup>51</sup> Based on data retrieved from [SAM.gov](https://sam.gov) on October 6, 2022.



A growing majority of contract support concentrated in IT services—and, therefore, in those segments of the agency's acquisition workforce that procure, administer, and oversee contracts for such services—potentially increases the risk to the SEC. Indeed, since 2015, GAO has reported that management of IT acquisitions and operations is a high risk area needing attention by the executive branch and Congress, stating, “federal IT investments too frequently fail or incur cost overruns and schedule slippages while contributing little to mission-related outcomes. These investments often suffer from a lack of disciplined and effective management, such as project planning, requirements definition, and program oversight and governance.”<sup>52</sup> We have previously reported on needed improvements in the SEC's management of IT

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*Management of IT acquisitions and operations is a high risk area across the executive branch*

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investments.<sup>53</sup> And while last July the SEC completed efforts sufficient to close our remaining recommendations for corrective action stemming from that report, the agency has also increased its investments (and, therefore, its potential risk) related to IT service contracts.

Notably, the SEC procures many of its IT services through its OneIT enterprise contract vehicle, which has a 10-year ordering period and a contract ceiling of \$2.5 billion. In September 2018, the SEC began awarding time-and-material (T&M), labor-hour (LH), and firm-fixed price task orders under the OneIT contract vehicle, which included separate pools for small businesses only (restricted) and all awardees, including large businesses (unrestricted). As of June 2022, the agency had awarded task orders to 27 companies, including 5 large businesses and 22 small businesses, obligating a total of almost \$450 million for task orders under this vehicle. The SEC's Office of Minority and Women Inclusion (OMWI) collaborated with key stakeholders to advertise to vendors opportunities and specifics of the OneIT program. This advertising included a publically available brochure targeted to minority-owned and women-owned businesses. OMWI received positive feedback and is looking to expand the concept to other large SEC contracts being awarded. As such, the SEC's Office of Acquisitions (OA) and OMWI are continuing to work collaboratively to increase outreach to minority-owned and women-owned businesses and continue efforts to increase the SEC's vendor diversity.

## Focus on Diversity, Equity, and Inclusion

OA and OMWI are collaborating to voluntarily implement the requirements of Executive Order 13895, which states that the federal government should pursue a comprehensive approach to advancing equity for all, including people of color and others who have been historically underserved, marginalized, and adversely affected by persistent poverty and inequality.<sup>54</sup> This advancing of equality includes promoting equitable delivery of government benefits and equitable opportunities, such as government contracting and procurement opportunities, which should be available on an equal basis to all eligible providers of goods and services.

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<sup>52</sup> U.S. Government Accountability Office, *HIGH-RISK SERIES Dedicated Leadership Needed to Address Limited Progress in Most High-Risk Areas* (GAO-21-119SP, March 2021).

<sup>53</sup> U.S. Securities and Exchange Commission, Office of Inspector General, *The SEC Has Processes To Manage Information Technology Investments But Improvements Are Needed* (Report No. 555; September 19, 2019).

<sup>54</sup> Executive Order 13895, *Advancing Racial Equity and Support for Underserved Communities through the Federal Government*, January 20, 2021. Independent agencies are strongly encouraged to comply with the provisions of this Executive Order.

Additionally, recent OMB guidance implements commitments to increase the share of contracts awarded to small disadvantaged businesses to 15 percent by 2025.<sup>55</sup> To do this, OMB directs federal agencies to take specific management actions, including increasing the number of new entrants to the federal marketplace and reversing the general decline in the small business supplier base.

Diversity, equity, and inclusion is a focus of OA and, in its FY 2023 budget request, OA requested two additional positions to support a number of priorities, including support for workload increases to review and expand diversity, equity, and inclusion efforts in contracting opportunities. Furthermore, OMWI continues to collaborate with OA to promote access to contracting and sub-contracting opportunities for minority-owned and women-owned businesses, through outreach activities. In March 2022, we initiated an audit to (1) assess the SEC's processes for encouraging small business participation in agency contracting, in accordance with federal laws and regulations; and (2) determine whether, in FYs 2020 and 2021, the SEC accurately reported small business awards. The audit is ongoing and will be completed in FY 2023.

## T&M Contracts

Since our 2019 statement on the SEC's management and performance challenges, we have reported that T&M contracts (including LH contracts) lack incentives for contractors to control costs or use labor efficiently and, therefore, are considered higher-risk.<sup>56</sup> Last year, we noted again that the SEC's use of T&M contracts has continued to increase. We encouraged management to assess the SEC's use of these contracts and to formulate actions to reduce their use whenever possible. In response, agency management committed to continuing to closely monitor its use of T&M contracts and "exercise rigorous oversight of these types of contracts."<sup>57</sup> Management further noted that OA has made a number of improvements to better manage T&M contracts, including a new independent government cost estimate guide, contract compliance reviews, information sharing on T&M invoicing, and an automated determination and findings workflow for "more robust and consistent support for the use of T&M" contracts. To date, we have not fully assessed the effectiveness of management's reported additional controls;<sup>58</sup> however, the annual amount obligated to T&M contracts continues to raise concerns about risk to the SEC. As Figure 6 shows, according to data from [usaspending.gov](https://usaspending.gov), the total amount obligated to T&M contracts increased since FY 2018 from about 40 percent to about 53 percent of all SEC contract obligations (which are declining).<sup>59</sup> In addition, as of October 7, 2022, 476 of the SEC's 1,055 total active contracts (or about 45 percent) were T&M contracts.

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<sup>55</sup> Office of Management and Budget, Memorandum M-22-03, *Advancing Equity in Federal Procurement*, December 2, 2021.

<sup>56</sup> As stated in Federal Acquisition Regulation 16.602, *Labor-hour contracts*, LH contracts are a variation of T&M contracts and differ only in that materials are not supplied by the contractor.

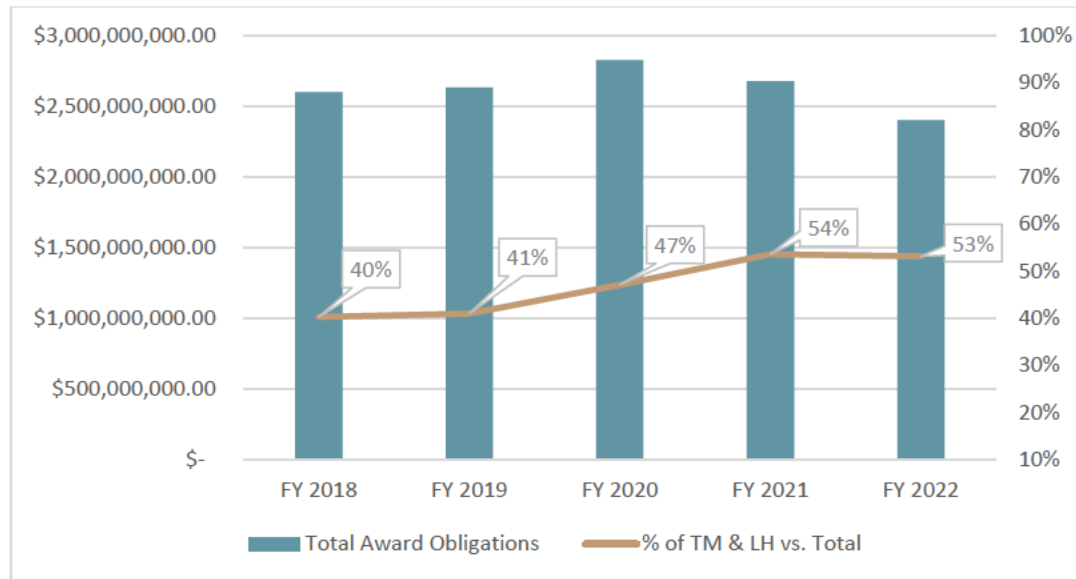
<sup>57</sup> U.S. Securities and Exchange Commission, *Fiscal Year 2021 Agency Financial Report*, November 15, 2021.

<sup>58</sup> We plan to initiate an audit of this issue in FY 2023.

<sup>59</sup> According to [usaspending.gov](https://usaspending.gov), total (that is, cumulative) award obligations for all active SEC contracts as of October 7, 2022, was about \$2.40 billion, of which total award obligations for T&M contracts was about \$1.28 billion.



**FIGURE 6. Percentage of SEC T&M Award Obligations Compared to Total SEC Award Obligations (FY 2018 – FY 2022)**



Source: OIG-generated based on data retrieved from [usaspending.gov](https://usaspending.gov) on October 7, 2022.

As we have reported in prior years' statements on the SEC's management and performance challenges, Federal Acquisition Regulation Subpart 16.6, *Time-and-Materials, Labor-Hour, and Letter Contracts*, states, a T&M contract:

- “. . . provides no positive profit incentive to the contractor for cost control or labor efficiency.”
- “. . . may be used only when it is not possible at the time of placing the contract to estimate accurately the extent or duration of the work or to anticipate costs with any reasonable degree of confidence.”

Furthermore, in June 2022, GAO reported that T&M and LH contracts are considered riskier than fixed price contracts because contractors bill the government by the hour and could conceivably work less efficiently so that they could charge more hours. As a result, GAO recommended that selected agencies assess steps they can take to use lower-risk contract types, and highlighted potential opportunities for agencies to assess ongoing use of T&M contracts in their acquisition portfolios.<sup>60</sup> Moreover, the Federal Acquisition Regulation encourages contracting officers to assess contract types periodically, after experience obtained during the performance of a T&M contract provides a basis for firmer pricing. A January 2021 OMB memorandum also discourages agency reliance on high-risk contracts, such as T&M contracts, stating that, “By managing contract types effectively, agencies have better leverage to ensure timely, efficient, and cost-effective completion of contractor work supporting critical and high priority goals.”<sup>61</sup>

<sup>60</sup> U.S. Government Accountability Office, *Opportunities Exist to Reduce Use of Time-and-Materials Contracts* (GAO-22-104806, June 2022). GAO included in its review four Department of Defense agencies and field activities (the Air Force, Army, Defense Finance and Accounting Service, and Washington Headquarters Services), and three civilian agencies (the Social Security Administration, the Department of Homeland Security, and the Department of State).

<sup>61</sup> Office of Management and Budget, Memorandum M-21-11, *Increasing Attention to Federal Contract Type Decisions* (January 5, 2021).

***Ongoing and Anticipated OIG Work.*** In FY 2023, we will continue to assess the SEC's contract management and acquisition processes through audits and evaluations and the work of our Acquisitions Working Group. We will complete an ongoing audit of the SEC's small business contracting program. In addition, we will assess the SEC's use of T&M contracts to help ensure such contracts are used only when appropriate and effective controls are in place to minimize the risk to the government. Lastly, we will report on any acquisition-related matters identified as a result of other ongoing and planned reviews of SEC programs and operations, and continue to support the SEC's efforts to train contracting officers and contracting officer's representatives about the potential for procurement-related fraud.

## CHALLENGE: Ensuring Effective Human Capital Management

Although each component within the SEC is critical to achieving effective human capital management, the Office of Human Resources (OHR) is ultimately responsible for the strategic management of the SEC's human capital. OHR consults with management, establishes and administers human capital programs and policies, and ensures compliance with federal laws and regulations and negotiated agreements. It is critical that OHR develops and maintains the knowledge, skillsets, and expertise to guide the SEC through the challenges that inevitability arise in the management of a large professional workforce.

Indeed, retention, attrition, recruitment, and hiring of skilled personnel have all emerged as challenges within the SEC, along with the challenges associated with managing the agency's workforce throughout the COVID-19 pandemic.

### Retention, Attrition, Recruitment, and Hiring

The SEC recognizes the importance of an effective, highly-skilled, and diverse workforce. As such, in its strategic plan, the SEC states that it "will focus on recruiting, retaining, and training staff with the right mix of skills and expertise."<sup>62</sup> Moreover, Goal 1 of OHR's Human Capital Strategic Plan is to "Attract Diverse and Highly Talented People to the Agency."<sup>63</sup>

OMWI also plays an important part in the agency's recruitment and retention efforts by providing leadership and guidance in ensuring diversity and inclusion with respect to the SEC workforce. In its Diversity and Inclusion Strategic Plan, the SEC highlights the importance of diversity, equity, and inclusion in the workplace, stating, "we recognize that our people are our most important asset. We also recognize that diversity, inclusion, and opportunity are essential to the agency's ability to effectively carry out its mission. These fundamental and value-enhancing tenets of our mission-oriented culture dictate that we continuously work to attract, hire, develop, and retain high-quality, diverse talent."<sup>64</sup>

### Retention and Attrition

Despite OHR's and OMWI's efforts and the SEC being recognized as one of the best places to work in the federal government,<sup>65</sup> the SEC seems to be facing challenges to its retention efforts. As the figures below demonstrate, the SEC has seen a significant increase in attrition over the last few years, from 3.8 percent in FY 2020 to an estimated 6.4 percent in FY 2022 (as of September 20, 2022)—the highest attrition rate in 10 years. Most concerning is the increased attrition in Senior Officer and attorney positions, expected to be about 20.8 percent and about 8.4 percent for FY 2022, respectively.



*Effective management of an entity's workforce, its human capital, is essential to achieving results and an important part of internal control.*

Source: U.S. Government Accountability Office, *Standards for Internal Control in the Federal Government* (GAO-14-704G, September 2014), Principle 10 - Design Control Activities, section 10.03.

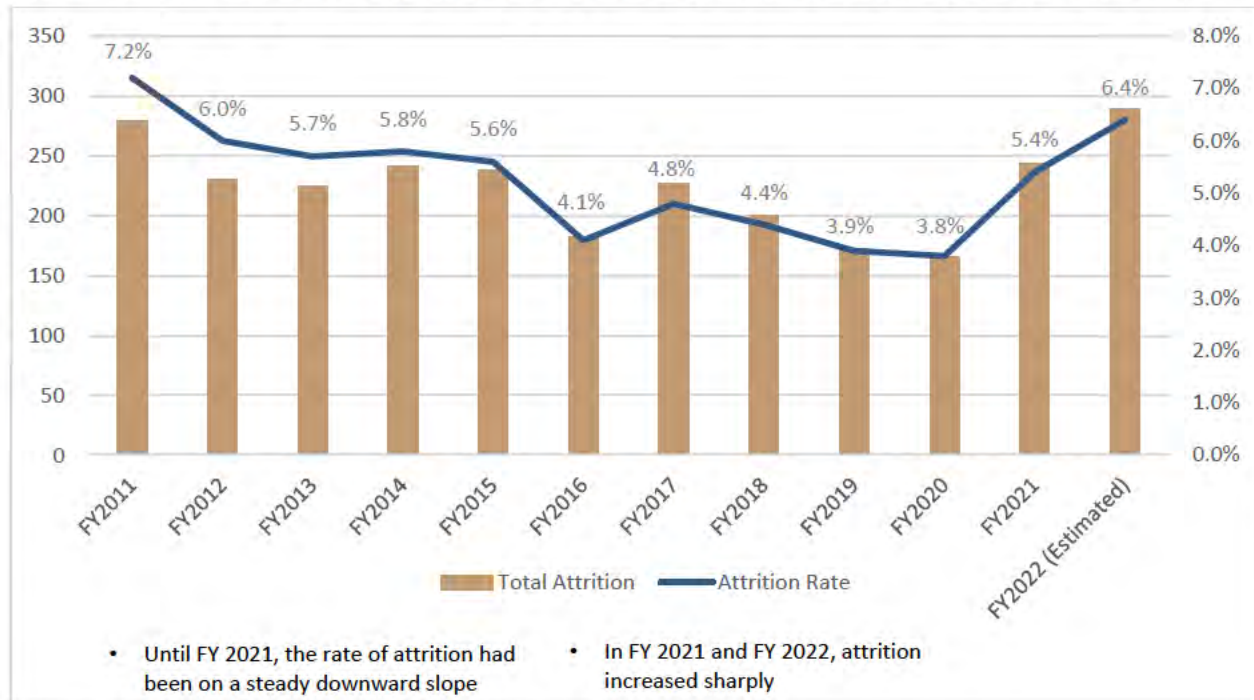
<sup>62</sup> U.S. Securities and Exchange Commission, *Strategic Plan Fiscal Years 2018-2022*, Strategic Initiative 3.1; October 11, 2018. The agency's draft strategic plan for FY 2022 to FY 2026 (Goal 3) similarly emphasizes the importance of attracting, hiring, developing, and retaining high-quality, diverse talent.

<sup>63</sup> U.S. Securities and Exchange Commission, Office of Human Resources, *FY 2020-2022 Human Capital Strategic Plan*; March 2020.

<sup>64</sup> U.S. Securities and Exchange Commission, *Diversity and Inclusion Strategic Plan*, Fiscal Years 2020-2022, Introduction.

<sup>65</sup> Partnership for Public Service, *2021 Best Places to Work in the Federal Government Rankings*.

**FIGURE 7. Total SEC Attrition (in Number of Positions) and Attrition Rate (FY 2011 – FY 2022)**



Source: OIG-generated based on data provided by OHR.

**FIGURE 8. SEC FY 2022 Expected Attrition by Paygrade and Position**



Source: OIG-generated based on data provided by OHR.

The SEC is not alone in facing a crisis to retain mission-critical talent during what has been dubbed “The Great Resignation.” Critical elements of the federal workforce are in a state of stress. For example, according to the Partnership for Public Service, FY 2021 government-wide attrition rates averaged 6.1 percent, with certain groups experiencing even higher rates, such as women (6.4 percent) and executives (9.2 percent).<sup>66</sup>

The SEC may be able to address some of the concerns surrounding attrition by ensuring that it provides for succession planning through robust employee development and performance management. For example, in August 2022, the SEC launched a new program called LEAD (Leadership, Evaluation, Accession, and Development) to help SEC employees develop the leadership skills necessary to apply for future Senior Officer opportunities. However, performance management remains an area of opportunity for growth. For example, the SEC has discontinued the Performance Incentive Bonus program it implemented just 1 year ago. In addition, one recommendation from our 2018 report entitled, *The SEC Made Progress But Work Remains To Address Human Capital Management Challenges and Align With the Human Capital Framework*, remains open.<sup>67</sup> This recommendation—for the SEC to finalize standard operating procedures for the agency’s performance management program—is an important component of the SEC’s effort to ensure effective performance management. Agency management has reported that remediation work is underway, yet limited resources and competing priorities have created delays. In FY 2023, GAO is set to issue its triennial report on personnel management within the SEC,<sup>68</sup> which should provide further guidance to the SEC in this area.

### **Recruitment and Hiring**

Recruitment is a major area of interest to both OHR and OMWI. Recruitment efforts are critical to ensuring a skilled and diverse candidate pool from which to fill SEC vacancies. In its FY 2023 Congressional Budget Justification, the SEC requested a total of 5,261 positions, an increase of 454 positions from FY 2022, in which the SEC was authorized 4,807 positions. With FY 2022 attrition rates estimated to be at 6.4 percent—or about 289 positions—efforts to recruit and hire an additional 454 new positions in FY 2023 could present challenges for OHR, OMWI, and SEC management. Moreover, the federal government is facing stiff competition from the private sector as increased wages and workforce engagement make private sector positions attractive to both new and seasoned professionals. The federal government hiring process also has been cited as a detriment when attracting talent to the federal government. For example, the federal government takes on average 98 days—more than twice as long as the private sector—to hire a new employee.<sup>69</sup> During our recent audit of the SEC’s hiring process, discussed in more detail below, we found that of the 438 external hiring actions that we included in our analysis, nearly 50 percent took 100 business days or more to complete.<sup>70</sup>

<sup>66</sup> Partnership for Public Service. “[Who Is Quitting and Retiring: Important Fiscal 2021 Trends in the Federal Government.](#)”

<sup>67</sup> U.S. Securities and Exchange Commission, Office of Inspector General, *The SEC Made Progress But Work Remains To Address Human Capital Management Challenges and Align With the Human Capital Framework* (Report No. 549; September 11, 2018).

<sup>68</sup> Section 962 of Dodd-Frank includes a provision for GAO to report triennially on the SEC’s personnel management, including the competence of professional staff; the effectiveness of supervisors; and issues related to employee performance assessments, promotion, and intra-agency communication. See Pub. L. No. 111-203, 124 Stat. 1376, 1908-1909 (2010) (codified at 15 U.S.C. § 78d-7).

<sup>69</sup> Partnership for Public Service. “[Roadmap for Renewing Our Federal Government.](#)”

<sup>70</sup> U.S. Securities and Exchange Commission, Office of Inspector General, *The SEC Can Improve in Several Areas Related to Hiring* (Report No. 572; February 28, 2022).



To address some of these recruitment concerns, OHR recently issued its FY 2022-2024 Recruitment and Outreach Strategic Plan, which identifies strategies to attract diverse talent and to aid in filling mission critical occupations that have been deemed hard-to-fill. Such strategies include creating branding and marketing that speaks to prospective applicants; developing and implementing a multi-media recruitment and agency branding campaign that highlights the successes of current SEC employees; developing a comprehensive internal communications strategy; and creating an overarching recruitment, outreach, and engagement tool to enhance the recruitment process.

Given the importance of an effective process when recruiting and hiring new employees, and the likelihood that the SEC will be heading into an intensive hiring effort, the OIG recently reviewed the SEC's hiring process and identified areas for improvement. The OIG's audit report, *The SEC Can Improve in Several Areas Related to Hiring*, addressed a number of critical areas related to the SEC's hiring process.<sup>71</sup> First, we determined that management can improve its controls to ensure Workforce Transformation and Tracking System (WTTS) data fields are accurate, consistent, and complete. We found that:

- 83 of the 91 hiring actions sampled (or about 91 percent) had at least one data entry issue in the WTTS data fields we reviewed, and almost 9 percent of the WTTS data entries we reviewed were either inaccurate, inconsistent, or incomplete;
- the SEC's WTTS data continued to include unannotated anomalies; and
- certain hiring actions were not consistently identified in WTTS.

These conditions occurred because (1) OHR's WTTS job aid did not include sufficient instructions regarding the dates and information expected in key WTTS data fields, and (2) some data fields were not included on the WTTS reports used by OHR staff to ensure the SEC's hiring action data was accurate, complete, and consistently recorded. As a result, OHR can further improve the reliability of the SEC's WTTS data to assist in workforce management and internal and external reporting of agency hiring information.

In addition, our assessment of OHR's quarterly Service Level Commitment (SLC) reviews found that (1) OHR did not perform SLC reviews in a consistent manner, (2) the review process was inefficient and prone to inaccuracies, and (3) SLC reviews did not align with the SLC presented to and agreed upon by the other SEC divisions and offices. This occurred because OHR did not establish clear guidance, including in the SLC itself, for the variety of hiring types and scenarios that can occur, or how to measure each one. The organization also did not ensure it could measure the SLC steps, as presented, in WTTS and did not effectively use the WTTS reporting capabilities in its SLC reviews. As a result, OHR limited its ability to rely on the SLC and SLC reviews as key controls for efficiently and effectively identifying areas of needed improvement in the SEC's hiring process, and for collaborating with the divisions and offices OHR serves.

Furthermore, we found that the SEC's pay-setting guidance needed improvement and OHR could clarify the new hire pay-setting information shared both internally and externally. Specifically, (1) the pay-setting

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<sup>71</sup> Id.

information available to SEC employees and hiring officials was not comprehensive, (2) the internally published pay matrices were outdated, and (3) publicly advertised SEC salary information was misleading for new hires. We also identified inaccuracies in some of the underlying pay band information included in the 2021 pay matrices, and other pay-setting concerns. Incomplete, outdated, and misleading new hire pay-setting guidance and information have caused confusion and may have limited hiring officials' ability to review and respond to pay-setting requests. Although it does not appear that inaccurate information in the 2021 pay matrices impacted any newly hired SEC employee's pay, it could have had certain hiring scenarios occurred. We also concluded that OHR generally complied with the key hiring authority requirements tested; however, staffing case files for 18 of 32 attorney hiring actions we reviewed (about 56 percent) lacked supporting documentation, including proof of law degrees and/or bar membership. This occurred because OHR did not clarify review processes and documentation requirements for attorney qualifications. In addition, OHR's internal reviews of staffing case files needed improvement. As a result, the SEC risked hiring attorneys who did not meet all qualifications required for their position.

Lastly, we identified a matter that did not warrant recommendations related to (1) the SEC's SLC as compared to the Office of Personnel Management's end-to-end hiring process model timelines, and (2) feedback from the SEC divisions and offices OHR serves. We discussed this matter with agency management for their consideration.

We made 11 recommendations to further strengthen the SEC's controls over hiring actions, including recommendations to improve (1) the reliability of WTTS data, (2) assessments of the agency's hiring timelines, (3) the agency's compensation program, and (4) staffing case file documentation requirements. Management concurred with all 11 of our recommendations and, as of the date of this document, had taken action sufficient to close 5 of them. The remaining recommendations are open and will be closed by the OIG upon completion and verification of corrective action.

## **Responding to COVID-19: Workforce Perspectives**

Responding to the COVID-19 pandemic has been a central concern of the SEC, and the federal government as a whole, throughout FY 2022. Since the outset of the national public health crisis and economic threats caused by COVID-19, the SEC's operational efforts have centered, first and foremost, on the health and safety of its employees, the employees and customers of its registrants, and individuals generally. From March 2020 through August 8, 2021, the SEC was in a mandatory telework posture, which aligned with other federal government agencies. Indeed, the federal government workforce quickly increased from 3 percent of employees teleworking every day to nearly 60 percent, as the 2020 Office of Personnel Management Federal Employee Viewpoint Survey shows.<sup>72</sup> However, as vaccines became more widely available, the SEC shifted its focus to how to best and most safely allow employees to return to the workplace.

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<sup>72</sup> Office of Personnel Management, *Government-wide Management Report: Results from the 2020 OPM Federal Employee Viewpoint Survey*, April 26, 2021.



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*Safety remains a top priority when planning for employee return to the workplace*

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On August 9, 2021, the agency began to allow vaccinated employees to voluntarily return to the workplace. In calendar year 2022, peak occupancy across all SEC building locations has averaged around 7 percent. The SEC has not yet mandated that its employees return to the office in pre-COVID-

19 levels. On July 25, 2022, the agency announced that, because of the recent uptick in COVID-19 community levels, the planned return-to-office date was shifted from September 6, 2022, to January 9, 2023. Occurring alongside the agency's monitoring of community levels, the SEC is also negotiating a new collective bargaining agreement with the National Treasury Employees Union, which will include updated provisions related to telework and remote work. The parties are also engaged in bargaining related to the mandatory return-to-office plan. While these negotiations are ongoing, both the National Treasury Employees Union and SEC leadership make regular announcements to staff and management, respectively, about their progress. At this point, further negotiations require assistance from the Federal Mediation and Conciliation Service as the parties endeavor to avoid invoking the Federal Services Impasse Panel for a final decision on the terms of the new collective bargaining agreement and return-to-office plan. The uncertainty surrounding the plans for return-to-office and the potential for expanded telework and/or workplace flexibilities makes it more difficult to plan for future human capital management solutions.

***Ongoing and Anticipated OIG Work.*** In FY 2023, we plan to evaluate the agency's workplace safety protocols developed in response to the COVID-19 pandemic, including the COVID-19 workplace safety plan and related measures, such as those established pursuant to OMB Memorandum M-21-15, Executive Order 13991, and other applicable guidance. We also will complete a review of the agency's upward mobility program. Furthermore, we will monitor the SEC's progress in addressing prior open audit recommendations related to human capital management. To assess the SEC's efforts to promote diversity, equity, inclusion, accessibility, and opportunity, we will complete an ongoing audit of the agency's small business contracting. We will also assess the operations and controls over the agency's equal employment opportunity program.

## OIG General Office Contact Information

### EMPLOYEE SUGGESTION PROGRAM

The OIG SEC Employee Suggestion Program, established under the Dodd-Frank Wall Street Reform and Consumer Protection Act, welcomes suggestions by all SEC employees for improvements in the SEC's work efficiency, effectiveness, productivity, and use of resources. The OIG evaluates all suggestions received and forwards them to agency management for implementation, as appropriate. SEC employees may submit suggestions by calling (202) 551-6062 or sending an e-mail to [OIGESProgram@sec.gov](mailto:OIGESProgram@sec.gov).

### COMMENTS AND IDEAS

The SEC OIG also seeks ideas for possible future audits, evaluations, or reviews. We will focus on high-risk programs, operations, and areas where substantial economies and efficiencies can be achieved. Please send your input to [AUDPlanning@sec.gov](mailto:AUDPlanning@sec.gov).

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## TO REPORT

# fraud, waste, and abuse

Involving SEC programs, operations, employees, or contractors

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