Commitment and Financial Flexibility in Payout Decisions: Evidence from Rule 10b5-1 Preset Repurchase Plans

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December 2015

This paper has benefited from comments and discussions with Leonce Bargeron, Chris Clifford, Igor Cunha, Dave Denis, Kristine Hankins, Murali Jagannathan, Brad Jordan, Kathy Kahle, Einer Kjenstad, Nathan Mauck, Roni Michaely, and Donna Paul. We also thank seminar participants at the Northern Finance Association, the University of Arizona, the University of Kentucky, the University of South Carolina and the Washington University Corporate Finance Conference for their helpful comments.

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ABSTRACT

This paper provides unique evidence on the tradeoff between signaling commitment and maintaining timing and abandonment options in payout decisions. We study a new and growing form of payout: SEC Rule 10b5-1 repurchase plans, which require firms to pre-commit. Relative to open market repurchases, these preset plans provide an expanded available repurchase window and increase legal cover, albeit at the cost of forfeiting repurchase flexibility and the option to time repurchases. Firms with greater internal capital reserves or easier access to external capital are more likely to pre-commit to a repurchase plan, as are firms with a history of poor repurchase timing and firms constrained by blackout windows. Using the 2008-2009 financial crisis as a positive exogenous shock to the marginal benefit of financial flexibility, we further find that the growth in preset repurchase programs significantly stagnated during the crisis. Consistent with preset plans sending a signal of commitment, market reactions to repurchase announcements increase in the implied preset portion of the plan.

Keywords: Share repurchase; share buyback; Rule 10b5-1; preset trading plan; accelerated share repurchase; payout policy; financial crisis; repurchase plan completion rates; announcement returns; financial flexibility; blackout windows

JEL classification: G35; G24; G30

1. Introduction

Beginning with the SEC safe harbor provisions of 1982, payout policy has evolved dramatically over the past three decades. Share repurchases now represent the largest form of payout (Grullon and Michaely (2002) and Skinner (2008)), with more firms repurchasing than paying dividends and with aggregate repurchase volume outpacing aggregate dividend payments (Farre-Mensa, Michaely, and Schmalz (2014)). One potential explanation for the expansion of repurchase activity is that managers view repurchases as more flexible than dividends (Brav, Graham, Harvey, and Michaely (2005)). The flexibility of repurchases allows firms to more easily respond to fluctuations in stock prices and investment opportunities. This flexibility comes with a price, however, as dividends send a stronger signal of commitment to investors (Ofer and Thakor (1987)).

As the payout options available to managers have grown, so has their ability to trade-off flexibility with signaling commitment. As with any tradeoff, the optimal payout policy will differ across firms depending on the relative costs and benefits of each method. The relative benefits of financial flexibility are a function of the firm's internal capital reserves as well as its ability to access capital externally: A firm with large cash reserves, excess debt capacity, and fairly priced, liquid stock likely places less value on financial flexibility in payout policy. Further, how valuable is the option to "time the market," i.e., to increase repurchases if the firm's stock is underpriced and to reduce them if the price is at or above fair value? In an efficient market, the value of this option clearly relates to the manager's desire and ability to successfully exploit inside information. Managers face a decision of not only whether to distribute cash to shareholders, but how to do it. The tradeoff between signaling commitment and maintaining the ability to abandon payouts or time the market is at the core of payout policy.

In this paper, we provide a fresh perspective on this tradeoff by exploiting a recent addition to the menu of payout options—preset repurchases under SEC Rule 10b5-1. Enacted in 2000, Rule 10b5-1 allows firms for the first time to repurchase stock while in possession of material, non-public information by establishing a preset trading plan with a third party. Preset repurchases under Rule 10b5-1 are unique in that they allow firms to repurchase in a continuous fashion and provide additional legal coverage, at the

cost of forfeiting the timing and abandonment options associated with open market repurchase programs. Further, when firms adopt a preset repurchase plan, they incur a real, costly commitment, which traditional open market repurchases lack. Prior to the introduction of preset repurchases, examining the signaling-flexibility tradeoff required comparing across payout methods (e.g. self-tenders, open market repurchases and dividends). Comparing preset and traditional open market repurchases provides a clean setting within which we can examine this tradeoff in payout policy.

We hand-collect 1,933 repurchase announcements between 2001 and 2014 that reference Rule 10b5-1. The use of the Rule to repurchase shares has been increasing rapidly since its enactment: We document only four such announcements in 2001, compared to at least 200 announcements per year during 2011-2014. The rapid growth in preset repurchase plans is not due to a general increase in repurchase announcements during our time period. When we scale by the total number of repurchase programs in our sample each year, we continue to find that the use of Rule 10b5-1 has increased significantly. In recent years Rule 10b5-1 plans are more than twice as popular as accelerated share repurchases, and approximately one quarter of all repurchase announcements include a Rule 10b5-1 component.

We first establish that preset repurchase plans indeed represent a greater commitment than open market repurchases, the most prevalent form of share repurchase. Relative to matched open market repurchase programs, Rule 10b5-1 plans are associated with greater completion rates (the amount repurchased relative to the announced amount) and are more likely to be completed. "Pure" Rule 10b5-1 plans, those executed fully under the Rule, have completion rates 7 percentage points greater on average and are 9 percent more likely to be completed. In addition, conditional on completion, repurchase programs executed fully under Rule 10b5-1 are completed more than twice as quickly as non-Rule plans. In sum, Rule 10b5-1 programs are a stronger commitment to repurchase shares, and a commitment to repurchase them more quickly, than are open market repurchases.

We next study the determinants of the decision to adopt a Rule 10b5-1 preset repurchase program relative to an open market repurchase. Because firms delegate repurchase responsibilities to a third party, a preset plan reduces a firm's ability to modify future repurchases. We find that the likelihood of adopting

a preset plan is greater for firms with larger cash reserves, more stable cash flows, no dividends, better recent stock price performance, or more liquid stocks. These results are consistent with managers trading-off other sources of financial flexibility against financial flexibility in their repurchase program, similar in spirit to the theory of Bolton, Chen, and Wang (2011). We also draw from a new and growing literature that characterizes the 2008-2009 financial crisis as an exogenous shock to credit supply (e.g., Ivashina and Scharfstein (2010), Cornett, McNutt, Strahan, and Tehranian (2010), Bliss, Cheng, and Denis (2015)), which in turn increased the marginal benefits to financial flexibility during this period. We find that the growth of 10b5-1 repurchase plans significantly stagnated during the financial crisis relative to estimated expected growth patterns, consistent with the probability of adopting a preset repurchase plan decreasing as the marginal benefit of financial flexibility increases.

One potential advantage of traditional open market repurchases is information-based timing. In contrast, in a preset plan firms enter into a trading plan during an "open window" when they are not in possession of material, nonpublic information, limiting a firm's ability to make information-based trades. We find that firms with a record of worse repurchase timing are more likely to adopt a 10b5-1 plan, and smaller, less financially sophisticated firms are among the first to adopt Rule 10b5-1 plans. These results are consistent with firms that are unable to or uninterested in making information-based trades being more likely to adopt a preset plan.

Once the preset plan is in place, the repurchases proceed, even during future periods when the managers may have material, non-public information. By allowing a firm to continue repurchasing while in possession of material, non-public information, 10b5-1 plans expand a firm's available repurchase window and provide legal cover for these trades. We find that firms that should be more constrained by blackout windows, either due to longer reporting lags or more frequent releases of material information through 8-K reports, are more likely to adopt a 10b5-1 plan than an open market repurchase. However, we find no evidence of firms at high risk of litigation being more likely to adopt a preset repurchase plan.

A relatively short sample window and the fact that many firms that adopt a 10b5-1 plan continue to use a preset plan for future repurchases combine to leave us with little within-firm variation. Hence, we

focus on first-time adoption to strengthen identification. A Cox proportional hazard model examining the rate of 10b5-1 plan adoption generally corroborates our prior results. Further, we find that firms whose CEO's bonus is tied to earnings per share and firms with more employee stock options adopt 10b5-1 quickly.

We also compare Rule 10b5-1 plans to accelerated share repurchases (ASRs), another type of preset plan, but one demanding full commitment on the part of the firm. In an ASR, an investment bank immediately delivers borrowed shares to the firm, resulting in an instantaneous reduction in shares outstanding. The investment bank then conducts the repurchase over time at prevailing market prices. Price differences are settled at the end of the contract. (See Bargeron, Kulchania, and Thomas (2011) for an in-depth description of the mechanics of ASRs.) We document that, while ASRs have become more common, Rule 10b5-1 plans are the preferred preset repurchase method. We observe 2.4 times as many 10b5-1 plans as ASRs during our sample period (2001-2014). Relative to firms adopting ASRs, Rule 10b5-1 firms have greater, less volatile cash flows, but more volatile, less liquid stocks.

We next turn our attention to stock returns around Rule 10b5-1 repurchase announcements. On the one hand, 10b5-1 plans, by construction, should not be information-driven, potentially reducing their announcement effect. On the other hand, establishing a preset trading plan lessens the firm's repurchasing flexibility and, on average, represents a stronger commitment to follow through on the announced repurchase plan. Empirically, we find that 10b5-1 announcements are met with positive and significant abnormal returns, which are generally increasing in the expected portion of the plan to be effected under the Rule. In fact, after matching on firm characteristics associated with10b5-1 adoption, returns associated with pure Rule 10b5-1 announcements are more than double returns to matched open market repurchase announcements.

Finally, we examine payout initiations and find that firms increasingly use Rule 10b5-1 plans to initiate payout: In recent years, about one in ten firms include a Rule 10b5-1 component in their payout initiation, and approximately 30 percent of firms that repurchase for the first time adopt 10b5-1 plans.

Our findings contribute to the payout policy literature along multiple dimensions. Our analysis is most similar in spirit to the literature examining repurchase methods, as in Comment and Jarrell (1991), who compare the signaling strength of Dutch auctions, tender offers, and open market repurchases, and Bargeron, Kulchania, and Thomas (2011), who examine the choice to conduct repurchases through accelerated share repurchases relative to open market repurchases. We add to the literature by documenting and examining the costs and benefits associated with a new and growing form of payout—Rule 10b5-1 preset repurchase plans.

Further, we contribute to the literature examining short-run and long-run market reactions to payout announcements, particularly their relation to completion rates (e.g., Stephens and Weisbach (1998) and Bonaime (2012)). We also contribute to the growing literature focusing on how firms choose to payout. This literature has primarily examined the choice between dividends and share repurchases (e.g., Jagannathan, Stephens, and Weisbach (2000), Guay and Harford (2000), and Grullon and Michaely (2002)). Here we extend it by examining how firms respond to the addition of a new payout vehicle, and how the market reacts to the information in this choice.

Finally, we add to a nascent literature examining SEC Rule 10b5-1. Several recent studies have examined SEC Rule 10b5-1 plans with respect to trading by insiders. Jagolinzer (2009) finds that executives are trading strategically under the Rule. Using voluntary 8-K filings and SEC Form 4 footnotes, he shows that insiders consistently sell before bad news and after good news, earning higher returns than non-Rule users. Henderson, Jagolinzer, and Muller (2012) find the decision to disclose insider use of Rule 10b5-1 is positively correlated with firm level litigation risk. We find only weak evidence that litigation risk is associated with the firm's use of the Rule to repurchase stock, indicating that the motives to adopt a preset plan to repurchase appear distinct from those associated with insider trading at the individual level. While SEC Rule 10b5-1 plans have received much attention in the academic literature and popular press with respect to trading by insiders, we are the first paper, to our knowledge, documenting the prevalence, determinants, value, and payout policy impacts of the use of Rule 10b5-1 at the firm level to repurchase stock.

2. Hypothesis Development

Financial flexibility drives corporate finance decisions. Firms need to maintain sufficient financial slack to invest in positive net present value projects as they arise. One way to maintain financial flexibility is to build it into corporate payout structure. Managers state that flexibility is one of the most important reasons they choose share repurchases over dividends (Brav, Graham, Harvey, and Michaely (2005)). Empirical evidence corroborates managers' views and shows that financial flexibility is related to both the level and form of corporate payout (e.g., Guay and Harford (2000), Jagannathan , Stephens, and Weisbach (2000), Lie (2005), and Bonaime, Hankins, and Harford (2014)). Clearly, maintaining sufficient flexibility is important to managers when choosing an optimal payout structure. However, payout vehicles that provide firms with more discretion come at the cost of sending weaker signals of commitment. For example, abnormal returns to repurchase announcements are increasing in the implied level of commitment, with returns to fixed-price tender offers being greatest, followed by Dutch auctions, then open market repurchases (Comment and Jarrell (1991)).

We reexamine the flexibility-signaling tradeoff within the context of an important recent change in the payout choice set. On October 23, 2000, the Securities and Exchange Commission (SEC) enacted Rule 10b5-1, which for the first time allows firms to repurchase shares while in possession of material, nonpublic information, by establishing a preset trading plan with a third party. Under the Rule firms enter into a trading plan during an "open window" when they are not in possession of material, nonpublic information, which provides an affirmative defense to any subsequent trading under the plan. Rule 10b5-1 states that a firm must either: (i) specify a written trading plan with either the amounts, dates, and prices to repurchase or a trading formula in a binding contract with a broker or dealer, or (ii) delegate the repurchase decisions to a broker or dealer (the company can have no further influence). The firm may modify the plan, but only during an open window. In addition, though early termination of a preset plan is legal, it jeopardizes the affirmative defense associated with 10b5-1 repurchases. Lastly, to maintain an affirmative defense at the motion to dismiss phase of litigation, the firm must publicly announce the plan and enter into it under good

faith (Henderson, Jagolinzer, and Muller (2012)). In sum, relative to open market repurchases, preset Rule 10b5-1 repurchases restrict a firm's ability to *ex post* modify repurchase activity or to exploit inside information, but expand a firm's available repurchase window and provide additional legal coverage. These costs and benefits of preset repurchases relative to open market repurchases motivate our four hypotheses below.

Preset repurchase plans provide less flexibility since they reduce a firm's ability to modify repurchases. Essentially, firms adopting a preset plan forfeit the abandonment option associated with open market repurchases. We hypothesize that firms valuing the abandonment option the least are those with ample internal and (access to) external capital to meet future investment needs, which leads to our first hypothesis:

Abandonment Option Hypothesis: Firms with sufficient internal capital or access to external capital markets will value the abandonment option inherent in open market repurchases less and thus be more likely to adopt alternative payout strategies without abandonment options, specifically, preset Rule 10b5-1 repurchase plans.

The empirical predictions of the *Abandonment Option Hypothesis* are that firms with greater levels of internally generated capital (i.e., greater cash and cash flow) and firms with predictable cash flows should be more willing to adopt 10b5-1 plans to execute share repurchases. We also predict that firms that can easily access the debt market, i.e., those with excess debt capacity, or the equity market, i.e., firms with liquid stocks that are not trading below fair value, should be more likely to adopt preset trading plans. While it may seem counterintuitive for a firm to access external capital markets to fund distributions to shareholders, recent empirical evidence by Farre-Mensa, Michaely, and Schmalz (2015) suggests that firms rely on external capital to finance as much as one third of payouts, contradicting the pecking order theory of Myers and Majluf (1984).

Next, preset plans differ from open market repurchases in that the firm must delegate repurchase responsibility to a third party (without further influence) and thus the firm forfeits full control over the program, which prevents it from making information-based trades. A firm may be willing to forfeit the option of exploiting inside information because it prefers to allocate resources to its core business. Other firms may recognize that poor repurchase timing could lead to bad press. In 2014 many companies, including Viacom, Pfizer, C.R. Bard, Lowes, Exxon Mobil, Boeing, and EBay, were accused of poor repurchase timing in the popular press.[1] Just as managers often cite preset 10b5-1 trading plans when asked about questionable personal transactions,[2] companies may use Rule 10b5-1 as a buffer against accusations of poor timing. Companies less concerned about timing or with a reputation of poor timing may be more fearful of receiving bad press. We hypothesize that firms that value the timing option associated with open market repurchases the most will be less likely to adopt preset repurchase plans, which leads to our second hypothesis:

Timing Option Hypothesis: Firms with the ability or desire to exercise the timing option associated with open market repurchase plans will be less likely to adopt preset Rule 10b5-1 repurchase plans.

The empirical implications of the *Timing Option Hypothesis* are that firms with a history of poor repurchase timing will be more willing and likely to outsource their repurchase program through a 10b5-1 plan either due to a lack of skill or an indifference to timing repurchases to correspond with low stock prices. We also expect that small, less financially sophisticated firms will be more likely to adopt preset plans.

[1] See "Hey, Big Spender!" (*Barron's* on January 27, 2014) and "Apple Buybacks Pay Most Ever as CEOs Spend $211 Billion" (*Bloomberg* on August 5, 2014).

[2] For example, in March of 2011 when Douglas Bergeron, CEO of VeriFone Systems Inc., was questioned about selling $14 million of VeriFone stock immediately prior to a stock price decline, Bergeron defended the sale of his stock by pointing to his preset Rule 10b5-1 trading plan. ("Executives' Good Luck in Trading Own Stock," *The Wall Street Journal*, November 28, 2012.)

Rule 10b5-1 plans expand a firm's available repurchase window, and repurchasing firms often cite avoiding blackout windows as the motivation for repurchasing under Rule 10b5-1. While the Securities and Exchange Commission (SEC) generally does not mandate blackout periods, most companies impose explicit blackout windows to minimize the costs associated with illegal insider trading (Bettis, Coles, and Lemmon (2000)). Blackout windows generally last from quarter end until the release of earnings, as well as during other major corporate events that may result in insiders possessing material, nonpublic information. Firms must release earnings within 35 days of fiscal quarter end or 60 days of fiscal year end for companies with greater than $75 million in public float and within 45 or 90 days for smaller companies. Though firms may choose to some extent when to report earnings, factors other than the desire to repurchase sooner most likely drive reporting lags. For example, Sengupta (2004) finds that investor base, litigation risk, and accounting complexity are associated with reporting lags. Hence, blackout windows may substantially constrain firms by preventing them from repurchasing for months at a time throughout the year. In fact, some firms report blackout windows prohibiting repurchasing during two-thirds of all trading days.[3] Further, a firm with a large repurchase program may not be able to execute the entire program in the desired time frame due to blackout windows and volume conditions, which limit repurchases to a maximum of 25% of the average daily trading volume. To summarize, we hypothesize that blackout windows are a real constraint, but preset repurchases will circumvent this constraint.

Blackout Window Hypothesis: Firms that are more constrained by blackout windows are more likely to adopt a Rule 10b5-1 trading plan to circumvent blackout window restrictions

[3] In their August 3rd, 2006 Q2 Earnings Conference Call Captaris stated that Rule 10b5-1 plans would allow them to repurchase during "blackout periods, which comprise about two-thirds of the trading days in each quarter." Further, a July 1st, 2011 article "Corporate Buybacks on the Rise" in *Traders Magazine* stated: "Corporations have about eight months out of the year when insider trading rules create blackout periods. However, under the SEC's 10b5-1 rule, companies can set up a system to perform automatic stock buybacks during those times."

The *Blackout Window Hypothesis* predicts that firms constrained by blackout windows, either due to long reporting lags or frequent releases of material information, are more likely to adopt Rule 10b5-1 plans.

Finally, Rule 10b5-1 repurchases differ from open market repurchases in terms of legal cover. In 1982 the SEC enacted Rule 10b-18 to provide safe harbor to firms that repurchase under the manner, timing, price, and volume conditions. However, even if the firm meets all Rule 10b-18 conditions, it cannot legally engage in repurchases while in possession of material, nonpublic information. Though the new Rule 10b5-1 does not provide safe harbor, it does provide the firm with an affirmative defense. An affirmative defense differs from safe harbor in that a firm admits to breaking the law but may introduce as evidence the existence of a preset Rule 10b5-1 trading plan, which, if found to be credible, will negate any criminal liability for insider trading.[4] Therefore, 10b5-1 plans provide companies with an additional shield from potential lawsuits related to repurchase activity. For example, during its July 25, 2014, conference call, Centene Corp. stated that "…the only way to do it [repurchase] and be clean and above board is on a 10b5-1." We hypothesize that firms subject to greater litigation risk will be more likely to adopt preset plans.

Litigation Risk Hypothesis: Firms that are more subject to litigation risk will be more likely to adopt a Rule 10b5-1 plan.

The empirical predictions of the *Litigation Risk Hypothesis* are that firms in industries with a high incidence of security class action lawsuits or firms with a high estimated probability of litigation are more likely to adopt a preset repurchase plan.

[4] "Rule 10b-18 confers no immunity from possible Rule 10b-5 liability where the issuer engages in repurchases while in possession of favorable, material, nonpublic material, and nonpublic information concerning its securities." 1982 Adopting Release, *supra* note 4, at 47 FR 53333.

3. Sample formation and descriptive statistics

3.1 Sample construction

To construct our sample of preset repurchases, we search Factiva for Rule 10b5-1 repurchase announcements and accelerated share repurchase (ASR) announcements over the period 2001 to 2014. We verify all Factiva results to ensure that the use of Rule 10b5-1 corresponds to a repurchase and not an insider transaction. Further, as most firms announce preset plans in conjunction with open market repurchase announcements, we merge our hand-collected Rule 10b5-1 and ASR data with repurchase announcements from Thomson Financial's Securities Data Company (SDC) Mergers & Acquisitions and Repurchases databases. We use non-preset open market repurchases (OMRs), i.e., OMRs without a Rule 10b5-1 or ASR component, as our control group. We further exclude block transactions and any repurchase program with missing data on the size of the announced program. We reconcile slight discrepancies in dates between the two SDC databases by searching Factiva for the repurchase announcement and recording the first available announcement date.

We merge our repurchase announcement sample with several databases to construct other variables of interest and control variables. Specifically, accounting data and data on actual repurchases are from Compustat quarterly or annual filings, stock price data from CRSP, merger and acquisition data from SDC, institutional ownership data from Thomson Financial 13F filings, options data from Execucomp, and 8-K filings from Edgar.

3.2 Rule 10b5-1 repurchase plan frequency

As shown in Figure 1 and Panel A of Table 1, Rule 10b5-1 plans are the preferred preset repurchase method, especially in recent years. Our search identifies 1,933 announcements with a Rule 10b5-1 plan by 950 distinct firms, compared to 832 announcements with an ASR by 430 firms. For both types of preset plans, the number of announcements has steadily increased, but the use of Rule 10b5-1 plans has grown more rapidly. In 2001, the first year during which firms could adopt a Rule 10b5-1 plan, only four announcements contained such adoptions. Yet during the last four years in our sample period (2011-2014),

at least 200 announcements contained a Rule 10b5-1 adoption each year. The growth in Rule 10b5-1 plans cannot be explained by the growth in repurchase announcements during our time period. When we scale by the total number of repurchase programs in our sample each year, we reach the same conclusion: The use of Rule 10b5-1 has increased significantly since the Rule's inception. In fact, in recent years over one-quarter of repurchase announcements in our sample included a preset component, with 29% of repurchase announcements including a 10b5-1 plan in 2014. In comparison, only 13% of repurchase announcements included an ASR in 2014.

Some firms mention the use of a preset repurchase plan in other corporate announcements, e.g., earnings reports and conference calls. While there is some overlap with our sample of preset repurchase announcements, we calculate that 377 of these mentions correspond to distinct firm-year observations, implying that our original estimates of the use of preset plans are likely conservative.

3.3 Varying types of Rule 10b5-1 announcements

Preset repurchase announcements vary significantly by the expected portion of the repurchase to be effected under a preset plan. Panel B of Table 1 presents Rule 10b5-1 announcements by type; we provide examples in Appendix A. We label cases where the firm is conducting the entire repurchase program through a preset plan "pure" plans. About 14% of plans cover the full repurchase program. "Partial" plans include a preset component—with certainty. Partial plans use definitive language or provide specific institutional details about the preset component of the plan. Approximately one quarter of Rule 10b5-1 announcements are partial. "Expected" plans indicate that the company "expects to" or "intends to" adopt a preset component. The firm often follows these announcements with a general description of preset plans. Expected plans make up the smallest group of announcements: 12% of 10b5-1 announcements. Finally, we refer to announcements as "boilerplate" if the firm "may" adopt a preset plan or conduct the repurchase through other means such as open market purchases, privately negotiated transactions, or block transactions. Boilerplate is the largest group within Rule 10b5-1 announcements with 49% of announcements.

3.4 Rule 10b5-1 repurchase plan details

We collect preset repurchase plan details regarding size, duration, motive and broker, if mentioned, and report summary statistics on Rule 10b5-1 plans in Panel C. We should note that these summary statistics apply to a small portion of the sample, and are skewed towards pure plans fully executed under the Rule. Therefore, these figures provide a glimpse inside these repurchase contracts, but do not necessarily represent the full sample. For the subset of firms that report the size of the preset repurchase, the average (median) Rule 10b5-1 program represents 5.2% (3.5%) of shares outstanding. While the size of Rule 10b5-1 programs appears smaller than that of other repurchase programs, in untabulated results we examine the difference in the *total* repurchase size for repurchase programs including and not including preset components. We find that the total announced repurchase size is slightly larger for repurchases containing a preset component than for those that do not (8.08% versus 7.73%; $p = 0.0625$).

The dollar value of preset plans varies substantially from \$2 million at the 10th percentile to \$200 million at the 90th percentile for Rule 10b5-1 plans. The mean (median) dollar value is \$82 million (\$16 million). For firms that voluntarily disclose the size of their preset repurchase program, the mean (median) percentage of the total repurchase program under a Rule 10b5-1 plan is 94% (100%), and 87% will be conducted fully through a Rule 10b5-1 plan. We should note again, however, that these figures are biased upward because most firms that combine preset plans with other plans do not separately report the value of the preset component and are therefore not included in calculations for this table.

The mean time to commencement of a Rule 10b5-1 plan is 13 days and 74 plans, or approximately one-third, begin within one day of the announcement. Rule 10b5-1 plans last 195 days on average, and the most frequently observed duration of one year is reported by approximately one in six (47 out of 299) firms. Other common time windows include one month (14 plans or 5%), two months (38 plans or 13%), three months (20 plans or 7%), and six months (22 plans or 7%). In sum, the majority of preset plans are rather long, representing a real and costly commitment.

We collect three additional pieces of information not shown in Table 1. First, of the 634 announcements associated with a clear motive, we find that 592 or 93% relate to circumventing blackout

windows or maintaining repurchase "regularity." Second, we learn that 154 Rule 10b5-1 announcements mention 42 unique brokers that will conduct the repurchase program. Finally, we record only 28 Rule 10b5-1 termination announcements, which occur 132 days on average after the plan begins; most terminations are due to a contractual trigger (e.g., merger) that automatically suspends the plan.

4. Rule 10b5-1 commitment

Given that accelerated share repurchases are executed immediately and in full, they represent a firm commitment to repurchasing the entire announced amount of stock. Rule 10b5-1 plans, on the other hand, allow firms some flexibility in terms of their execution. Anecdotally, we observe firms establishing a "price matrix," which implies repurchasing more (fewer) shares as the price decreases (increases). However, firms can only put into place or modify a Rule 10b5-1 plan during an open window, thus creating a greater commitment for the firm than a fully flexible open market repurchase. If Rule 10b5-1 plans represent a greater commitment to follow through with the announced repurchase, we expect greater completion rates and more plans completed relative to open market repurchases.

To test whether completion rates differ across Rule 10b5-1 and open market repurchases, we limit the sample to the period from 2004 to 2014 since fewer than 5% of repurchases contained a Rule 10b5-1 component prior to 2004. Further, after 2003 firms are required to report detailed quarterly information on actual shares repurchased. We calculate completion rate beginning the quarter the firm announces the repurchase program through the following eight quarters. Completion rate is the dollar value of shares repurchased, i.e., the number of shares repurchased times the average repurchase price per share as reported in Compustat, divided by the dollar value of the announced repurchase from SDC. Following Stephens and Weisbach (1998), we truncate completion rate at 100%. We report average cumulative completion rates for Rule 10b5-1 plans along varying levels of commitment as well as for open market repurchase announcements without a preset component.

Panel A of Table 2 shows that Rule 10b5-1 plans are associated with higher completion rates earlier in the program and that completion rates are generally increasing in the level of commitment to a Rule

10b5-1 plan. For example, by quarter one, pure plans are on average 54% complete, which is significantly greater than the 40% completion rate for non-Rule programs. Similar patterns hold throughout the first year of the repurchase program and are especially strong when excluding boilerplate plans: When we exclude boilerplate plans, we find that completion rates are significantly greater by 3 to 9 percentage points on average for Rule 10b5-1 repurchases than non-Rule repurchases during the first six quarters after the announcements. By quarter seven completion rates stabilize across groups, indicating that executing a repurchase program through a Rule 10b5-1 plan may not increase the ultimate completion rate of the program but rather significantly increases the *speed* of completion. By quarter eight we identify average completion rates ranging from 71% to 78% across all groups, similar to open market repurchase completion rates documented in previous studies (e.g., Stephens and Weisbach (1998), Bonaime (2012), and Babenko, Tserlukevich, and Vedrashko (2012)). It is interesting to note that even the adoption of a pure plan does not imply that the firm will repurchase 100% of authorized shares with certainty. These results perhaps point to a non-trivial portion of firms establishing a conservative price matrix or allowing brokers some discretion over trades.

In Panel B, we examine the percent of repurchase plans completed each quarter by level of commitment to a preset plan. During the first year preset repurchase plans have a significantly greater percentage of plans completed, and the percentage of plans completed increases monotonically with commitment level. By quarter four over half of partial and pure plans are complete, while only 38% of non-Rule 10b5-1 repurchases are complete. These results suggest a trend of completion rates increasing with the level of commitment to the Rule, specifically during the first year to year and a half of the repurchase program.

It is possible that firm characteristics correlated with adopting a preset repurchase program are driving completion rates. To circumvent this issue, we identify control firms that strongly resemble Rule 10b5-1 announcers but do not repurchase under the Rule. We then examine differences in completion rates and percentage of plans completed between matched control firms and sample firms. To construct a control

group of firms, we propensity score match to the five nearest neighbors using the logit model specifications presented in Panel A of Table C.2 in Appendix C.

Panel C of Table 2 reports the average treatment effect on the treated, i.e., the difference in completion rates or percentage of plans completed between Rule 10b5-1 repurchase programs and similar non-Rule 10b5-1 programs. To account for the fact that we estimate propensity scores, we use the correction proposed by Abadie and Imbens (2012), who find that ignoring the estimation error can lead to confidence intervals of the average treatment effect that can bias results in either direction. Completion rates are significantly greater for Rule 10b5-1 plans than for non-Rule 10b5-1 plans during the first four quarters, and results are generally stronger as the level of commitment to repurchasing under the Rule increases. For example, by quarter eight, pure plans have a completion rate 7.0 percentage points greater than that of non-Rule 10b5-1 plans. We find similar, if not stronger, results for the difference in percent of plans completed: By the second quarter after the announcement 21% more pure plans are completed than matched non-Rule plans. Furthermore, if we exclude boilerplate plans, the percent of plans completed is greater for Rule 10b5-1 plans than non-Rule plans in every quarter; by quarter eight significantly more (9% more) Rule 10b5-1 plans are complete than matched non-Rule plans.

Our results suggest preset plans are associated with greater completion rates, especially earlier in the life of the repurchase program. These results point to firms completing preset plans more quickly, which we test directly in Panel D using the subsample of completed repurchase programs. We examine time to completion, defined as the number of quarters to completion (conditional on completion). Consistent with expectations, we find that time to completion is monotonically decreasing with the level of commitment to a Rule 10b5-1 plan. In other words, firms complete preset plans faster, and the greater the commitment to repurchasing under the Rule, the faster the completion. Conditional on completion, firms complete non-Rule 10b5-1 plans in 3.2 quarters on average, whereas firms complete partial and pure Rule 10b5-1 plans within 2.7 and 1.5 quarters, respectively. These differences are significant at the 1% level, and using propensity score matching to control for firm characteristics corroborates these results.

Overall, these results are consistent with preset plans being associated with stronger commitments to repurchase previously announced shares. Firms buy back larger portions of the announced repurchase under Rule 10b5-1 earlier in the program. Further, we find that preset plans are strongly associated with an increase in the speed of completion, and this speed of completion is increasing in the level of commitment to Rule 10b5-1.

5. The determinants of Rule 10b5-1 adoption

Understanding which firms choose preset plans and what motivates them to do so provides unique insights into the signaling-flexibility tradeoff. In this section we study the determinants of the decision to adopt a Rule 10b5-1 plan, relative to a non-preset open market repurchase, the most common repurchase vehicle, which leaves the firm with full flexibility. We conclude this section by comparing Rule 10b5-1 plans to another type of preset repurchase plan: accelerated share repurchases.

5.1 Univariate statistics on Rule 10b5-1 repurchase plans

Table 3 shows characteristics of repurchasing firms based on whether or not the repurchase includes a preset component. We present results at the firm-year level and label firms that announce a Rule 10b5-1 plan during the fiscal year "Rule 10b5-1 firms" that year; firms that announce open market repurchases without a preset component are "OMR firms." If a firm announced more than one repurchase in a fiscal year, we categorize the firm as a Rule 10b5-1 firm if at least one of the repurchase announcements includes a Rule 10b5-1 plan. When we condition on the availability of control variables and collapse our sample to the firm-year level, our sample consists of 1,014 Rule 10b5-1 firm-year observations and 3,611 non-preset OMR observations, unless otherwise noted. We match each repurchase announcement to prior fiscal year end accounting data from Compustat and stock price data from CRSP. Variable definitions are in Appendix B.

We briefly summarize the univariate results before moving on to the regression analysis. Overall, our univariate results are generally consistent with three of our four hypotheses. Supportive of the

Abandonment Option Hypothesis, relative to non-preset OMRs, Rule 10b5-1 firms have more cash, less leverage, greater book-to-market, better prior stock performance, and more liquid stocks. Rule 10b5-1 firms are also less likely to be dividend payers. These results are consistent with firms that have greater access to internally generated capital or external capital markets being more likely to adopt a Rule 10b5-1 plan to repurchase stock. The positive coefficient on book-to-market is consistent with firms with fewer growth opportunities being more likely to commit to increased payout. Firms with existing payout commitments should be less likely to see a net benefit in committing to additional payouts through preset plans, and indeed Rule 10b5-1 firms are less likely to pay a dividend. Consistent with the *Timing Option Hypothesis* Rule 10b5-1 firms have a record of worse prior repurchase timing. However, the likelihood of adopting a preset plan is not significantly related to firm size or financial sophistication. Rule 10b5-1 firms have longer blackout windows and more frequently release material information, consistent with the *Blackout Window Hypothesis* that firms more constrained by trading restrictions use preset trading plans to circumvent blackout windows. We find evidence that Rule 10b5-1 adoption is more prevalent for firms in industries with high litigation risk (as identified by Francis, Philbrick and Schipper (1994)), but is unrelated to a continuous measure of litigation risk, as proposed by Kim and Skinner (2012). Other control variables reveal that firms adopting 10b5-1 plans tend to have more volatile prior repurchases and greater institutional ownership and are more likely to have CEO bonus tied to earnings per share. Finally, in this univariate setting, Rule 10b5-1 firms do not significantly differ from firms conducting open market repurchases along the dimensions of cash flow, cash flow volatility, return volatility, repurchase frequency, option exercise, share dilution, or industry takeover activity.

5.2 Logistic regressions of the decision to adopt a Rule 10b5-1 plan

Table 4 reports the results of logit regressions modeling the decision to repurchase shares through a preset plan. Again, we collapse our data to the firm-year level and categorize firms with at least one Rule 10b5-1 repurchase program during the fiscal year as a Rule 10b5-1 firm-year, for which the dependent variable equals one. We report the coefficients on the independent variables along with their *z*-statistics

calculated using robust standard errors clustered by firm. We include year dummies in all specifications and Fama and French (1997) 12 industry dummies in specifications without our measure of high litigation industry, which is based on industry classification.

Table 4 presents logit regressions modeling the decision to adopt a Rule 10b5-1 plan relative to adopting a non-preset OMR. The likelihood of adopting a preset repurchase plan is increasing in cash holdings and stability of cash flows. This supports the *Abandonment Option Hypothesis'* predictions that firms with large internal capital reserves and predictable cash flows will be more likely to commit to a preset Rule 10b5-1 plan. The coefficient on cash in Model (1) indicates a one standard deviation increase in cash increases the likelihood of adopting a preset repurchase relative to an open market repurchase by 18%. We find further support of the *Abandonment Option Hypothesis* as firms with better prior stock performance and more liquid stocks are generally more likely to adopt a Rule 10b5-1 plan. These results are consistent with firms that have better access to external capital being more likely to adopt a preset repurchase program. Finally, we find that firms that have already committed to dividend payouts are less likely to commit to a preset repurchase plan—specifically, dividend payers are 17% less likely to adopt a Rule 10b5-1 plan than non-payers.

The *Timing Option Hypothesis* predicts that firms with a history of poor repurchase timing will be more likely to adopt a preset plan. Consistent with this prediction, we observe a significant and positive coefficient on our measure of repurchase timing. A one standard deviation increase in repurchase timing (implying worse timing) is associated with an 11% increase in the likelihood of adopting a preset plan. The coefficients on financial sophistication and firm size are both negative, as predicted by the *Timing Hypothesis*, but they fail to achieve statistical significance in most models.

Adopting a Rule 10b5-1 repurchase program allows firms to circumvent blackout windows. We find that the duration of prior blackout windows is positively and significantly related to the likelihood of adopting a preset plan across all specifications. The standardized odds ratio in Model (1) is 1.22, indicating a one standard deviation increase in blackout windows over the prior 12 quarters will increase the likelihood of adopting a 10b5-1 plan by 22% relative to a non-Rule 10b5-1 plan. We also find that 8-K filing frequency

is positively correlated with adopting a preset plan. Thus, as predicted by the *Blackout Window Hypothesis*, we find that firms facing greater constraints to repurchasing due to long blackout windows or more frequent releases of material information are significantly more likely to use a preset Rule 10b5-1 repurchase plan.

Though Rule 10b5-1 provides additional legal protection that is unavailable in an open market repurchase, we find no evidence that firms facing greater litigation risk are more likely to adopt a preset plan relative to an open market repurchase. The coefficients on the high litigation industry dummy identified by Francis et al. (1994) and the continuous litigation risk measure of Kim and Skinner (2012) both fail to achieve statistical significance in a multivariate setting. Overall, our initial multivariate results are consistent with the *Abandonment Option, Timing Option,* and *Blackout Window Hypotheses*, but we fail to find support for the *Litigation Risk Hypothesis*.

5.3 Multinomial logits: Rule 10b5-1 plan adoption by type

We next examine the decision to adopt a preset repurchase plan by type of plan. Table 5 reports the results of multinomial logit regressions modeling the decision to repurchase shares by type of Rule 10b5-1 announcement as defined in Appendix A. The base case is open market repurchases (OMRs) not containing a preset component. Hence, we can interpret coefficients relative to non-preset OMR announcements; the value of the coefficient represents a change in the log-odds ratio of the likelihood of choosing the specific type of Rule 10b5-1 plan relative to non-preset OMR associated with a one-unit increase in the independent variable, holding all other variables constant. We report the coefficients along with their *z*-statistics. We include year and industry controls, unless otherwise noted.

We gain several new insights into the decision to adopt a preset plan when we segment on level of commitment to repurchasing under the Rule. In general, we find that flexibility is an important determinant across all types of 10b5-1. Further supporting the *Abandonment Hypothesis,* a firm's likelihood of adopting a preset plan—regardless of the type—is generally increasing in the firm's ability to access both internal and external capital. Poor repurchase timing is strongly related to adopting a pure Rule 10b5-1 preset repurchase plan. Interestingly, firms more likely to outsource the entire repurchase program have

significantly worse prior repurchase timing. These firms most likely lack the sophistication or desire to exercise the timing option associated with open market repurchases and thus are more likely to adopt a pure Rule 10b5-1 plan, supporting our *Timing Option Hypothesis*. We continue to find some support for the *Blackout Window Hypothesis* but no support of the *Litigation Risk Hypothesis*. Taken together, we see that our main findings are not driven by one specific type of preset repurchase plan, but rather generally hold across groups.

5.4 What determines the speed to first preset repurchase plan adoption?

Due to our relatively short sample period, which provides little within-firm variation, we focus on the decision to adopt a preset plan for the first time to strengthen identification. Additionally, many firms that adopt a preset repurchase plan continue to use a preset plan for future repurchases. In fact, we observe only 199 cases of firms that previously announced a preset repurchase plan subsequently announcing an open market repurchase without a Rule 10b5-1 component. Of these cases, 75% have no further repurchase announcements in the sample period, and the remaining 25% re-adopt a preset plan in their next repurchase announcement.

In Table 6, we employ a Cox proportional hazard model to examine Rule 10b5-1 adoption speed. We measure the duration to adoption as the number of calendar days from the end of 2003 to the first time a firm adopts a preset plan. The hazard models generally corroborate the results from our logit models and are consistent with the *Abandonment Option, Timing Option,* and *Blackout Window Hypotheses*: Firms that have yet to adopt a preset plan are more likely to adopt a preset plan at time *t* if they have more cash on hand, have more stable cash flows, do not pay a dividend, have more liquid stocks, are smaller, are less financially sophisticated, have a record of poor repurchase timing, and disclose material information more frequently. In addition, we find that firms that repurchased inconsistently in the past, firms whose CEO's bonus is tied to earnings per share, and firms with more employee options adopt Rule 10b5-1 plans more quickly.

5.5 Exogenous shock to cost of adopting a preset repurchase plan

Preset plans are associated with a greater commitment to follow through on previously announced repurchases, but this increased commitment comes at a cost to the firm. Namely, firms that adopt preset plans instead of open market repurchases forfeit financial flexibility since they cannot modify a preset repurchase program as easily, if at all. In this section we examine whether an exogenous shock to the marginal benefit of financial flexibility affects the likelihood of adopting a preset plan. Specifically, prior literature identifies the financial crisis of 2008 and 2009 as an exogenous shock to the supply of credit available to firms (Ivashina and Scharfstein (2010), Cornett, McNutt, Strahan, and Tehranian (2010), and Bliss, Cheng, and Denis (2015)), and a credit supply shock should increase the marginal benefit of financial flexibility. Therefore, adopting a preset repurchase plan became more costly around the financial crisis, and we expect to see fewer firms adopting these types of plans during the crisis.

Table 7 presents results on the effect of the exogenous shock to the benefits of financial flexibility on the likelihood of adopting a Rule 10b5-1 plan. Mirroring our logit analysis in Table 4, we condense our sample to the firm-year level and estimate the probability of adopting a preset plan, conditional on announcing a repurchase. We include the same list of control variables (though we only show our variables of interest to conserve space), but we replace our year dummies with two variables: (1) a trend variable capturing the increasing tendency for firms to adopt preset plans over time and (2) an indicator variable to demarcate the financial crisis. Figure 2 provides a hypothetical example to illustrate the effect of the financial crisis on the probability of adopting a preset plan. The marginal effect of our trend variable captures the growth in Rule 10b5-1 usage across time and would be the slope of the line in Figure 2. The financial crisis indicator variable captures any shift in the probability of announcing a preset plan during the crisis.

As expected, we observe a significant upward trend in the likelihood of adopting a Rule 10b5-1 plan relative to adopting an open market repurchase. Holding other variables constant at the mean, the coefficient on our trend variable implies that the likelihood of adopting a Rule 10b5-1 plan, conditional on announcing a repurchase, increases by approximately 2.6% each year. However, the growth in preset

repurchase plans significantly stagnates during the financial crisis. Repurchasing firms are 5.7% less likely to adopt a Rule 10b5-1 plan during the crisis. In robustness tests, we run an "out-of-sample" logit model following Model (1) of Table 7 using the non-crisis period (2004-2007 and 2010-2013) and excluding the financial crisis indicator variable. We then predict the likelihood of announcing a preset plan during the financial crisis. The average predicted value during the financial crisis is 22.1%, significantly different at the 1% level from the actual value of 16.4%. This 5.7% difference is in line with our prior results. Overall, we find strong evidence consistent with an exogenous positive shock to the marginal benefits of financial flexibility being associated with declines in the likelihood of adopting preset plans.

5.6 The decision to adopt a Rule 10b5-1 plan versus an ASR

In this section we study the determinants of the decision to adopt a Rule 10b5-1 plan relative to another type of preset plan: accelerated share repurchases or ASRs.[5] Both Rule 10b5-1 and ASRs require a high level of commitment and a relinquishment of control over repurchase timing. Both also provide trading opportunities during blackout windows since they are carried out at the discretion of a third party. However, while Rule 10b5-1 plans are executed over time, at prevailing market prices, ASRs result in the immediate purchase and delivery of shares as well as an instantaneous reduction of shares outstanding even though the ultimately price paid is a weighted average over the contract period. Rule 10b5-1 plans also provide additional legal cover.

In Table 8 we examine the decision to adopt a Rule 10b5-1 plan, conditional on choosing a preset plan. We present logits modeling this decision; the dependent variable equals one if the firm chooses a Rule 10b5-1 plan, zero if the firm chooses an ASR. We document consistent evidence that a firm's access to internal capital affects its decision to adopt a Rule 10b5-1 plan instead of an ASR: Coefficients on cash flow are positive, coefficients on cash flow volatility negative, and both groups generally achieve statistical significance. Given that a Rule 10b5-1 plan is executed over time, it makes sense that firms with higher and

[5] Table D.1 in Appendix D presents ASR plan details.

more predictable cash flows would be more willing to adopt them. Another pattern emerges: Rule 10b5-1 firms tend to have more volatile stock prices. Because the ultimate cost of the ASR is based on the volume-weighted stock price during the contract period, firms with less predictable stock returns should be less willing to accept the terms of an ASR contract. Finally, firms with less liquid stocks are more likely to choose a Rule 10b5-1 plan over an accelerated share repurchase. It is likely the case that the nature of the immediate execution is problematic for less liquid firms, leading investment banks to refuse to engage in an ASR or increase the cost of the ASR for such firms. Further, return volatility can proxy for the information sensitivity of stock prices, and more sensitive firms have a greater need of the affirmative defense association with Rule 10b5-1 plans.

Appendix D presents additional analysis on ASRs. Table D.2 presents logits modeling the decision to adopt an ASR relative to an OMR, Table D.3 presents a hazard model for ASR adoption, and Table D.4 presents the effect of the exogenous shock to the cost of financial flexibility on the likelihood of ASR adoption.

6. Repurchase announcement returns

We next examine abnormal returns surrounding announcements of Rule 10b5-1 repurchases, ASRs, and OMRs. Preset repurchases are unique in that, relative to an open market repurchase, private information should play a smaller role, if any. This would cause announcement returns to be lower for preset trading plans. On the other hand, preset plans represent a greater commitment to repurchase shares causing announcement returns to be greater in response to this signal. The net effect is an empirical question.

6.1 Announcement returns

Panel A of Table 9 reports five-day cumulative abnormal returns (CARs) from trading days -2 to +2 around the announcement by type of repurchase (Rule 10b5-1, ASR and non-preset OMR) and by level of commitment to repurchasing under the preset plan. We remove observations with earnings

announcements during this five-day window. We estimate the parameters of the market model using Eventus over 255 trading days, ending 46 days prior to the announcement. We use the Center for Research in Security and Prices (CRSP) value weighted index as the market portfolio and require a minimum of 100 trading days over the estimation window. Panel B presents difference in means tests, calculated using standard *t*-tests as well as propensity score matching, which controls for observable firm characteristics likely to affect announcement returns. Control firms are the five nearest neighbors identified through our propensity score matching process based on logit regressions in Panel B of Table C.2 of Appendix C.

We find positive and significant five-day cumulative abnormal returns (CARs) to preset repurchase announcements. In the aggregate, Rule 10b5-1 plans and ASRs are met with CARs of 1.5% or 1.8%, compared to 1.1% for non-preset OMRs. Overall, we observe that announcements with little commitment to a preset plan are associated with lower returns while announcements with a greater commitment are associated with higher returns. Within Rule 10b5-1 plans, boilerplate plans are associated with the lowest CARs of 1.1% while pure plans are associated with CARs of 2.4%; the returns to partial and expected plans fall in between. Within ASRs, boilerplate plans are again associated with the lowest CARs of 1.3% and partial plans with the greatest CARs of 2.7%.

Rule 10b5-1 plans are associated with CARs that are approximately 0.4% greater than non-Rule plans, which represents an increase of over 36% from the average non-preset CAR of 1.1%. The difference in returns is especially strong when we condition on pure plans, which we know with certainty are executed fully under the Rule. Pure plans are associated with CARs that are 1.3% greater than non-preset OMRs. Further, when we control for firms characteristics likely to affect repurchase announcement returns, we find that announcement returns to pure Rule 10b5-1 announcements are 1.4% greater—or more than double—abnormal returns to non-preset OMR announcements. Results are similar when we examine ASRs: CARs to ASR announcements are significantly greater than non-preset OMR announcements, especially if the firm is committed to the ASR, and the difference in returns is more pronounced after we control for firm characteristics. These results are consistent with the benefit of the increased commitment implied by preset plans outweighing the cost of being unable to exploit private information fully.

In a further effort to estimate the added value of preset repurchases, we regress announcement returns on a preset repurchase plan indicator, the size of the repurchase program and our standard controls included in our base logit model (from Table 4, Panel A, Model (1)). We present these results in Table 10 Panel A for Rule 10b5-1 plans and Panel B for ASRs. The magnitude and significance of the difference in preset and control firm returns in these regressions corroborate our prior propensity score matching results. Mainly, we confirm that, once we exclude boilerplate plans, Rule 10b5-1 plans are associated with significantly greater returns and the added value of the plan is increasing in the level of commitment to repurchasing under the Rule. In all cases, ASRs are associated with greater returns than non-preset OMRs. Interestingly, the point estimate of the difference in returns is not monotonically increasing with the commitment to the ASR, but the precision of our estimates does not allow us to say that the reaction to pure ASRs is significantly below that of partial ASRs.

6.2 Long-run returns

We further examine long-run abnormal returns over the 12-month window following Rule 10b5-1 repurchase announcements. Table 11 presents Fama-French four-factor calendar time portfolio regressions: $R_t - R_{f,t} = \alpha_1 + \beta_1(R_{mkt,t} - R_{f,t}) + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 MOM_t$, where R_t is the return on an equally weighted portfolio of stocks, $R_{f,t}$ is the risk-free rate, $R_{mkt,t}$ is the return on the market, and SMB_t, HML_t, and MOM_t are the monthly returns on the Fama-French size, book-to-market, and momentum factors in month *t*.[6] We require at least five firms in the portfolio each month. The intercept term (α) of the regression represents the average monthly abnormal return. The last row represents the difference in abnormal returns in Rule 10b5-1 firms and non-Rule 10b5-1 firms.

When we combine all repurchase announcements, we document positive and significant abnormal returns of approximately 29 basis points per month over the following 12 months. When we split the sample based on the inclusion of a 10b5-1 component in the announcement, we document abnormal returns of 55

[6] http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html

basis points for 10b5-1 announcements, greater though not statistically different than the 29 basis point monthly abnormal returns associated with open market repurchase announcements. Given that firms are not permitted to be in possession of material, non-public information when they establish a preset plan, it is curious that preset plans are associated with long-run abnormal returns. However, we know that many firms announce preset plans concurrently with open market repurchases. When we segment on announcement type, we discover that long-run abnormal returns are generally decreasing in level of commitment and are not statistically different from zero with the exception of boilerplate 10b5-1 plans, which are concurrent with open market repurchases and associated with the lowest commitment level. Panel B presents long-run returns results for ASRs. Interestingly, portfolios of ASR fail to achieve positive and significant alpha, no matter the level of commitment.

Overall, our results are consistent with short-run abnormal announcement returns increasing in the level of commitment to preset repurchase plans, but with long-run returns decreasing in commitment level. Investors appear to recognize and immediately respond to the commitment to repurchase inherent in preset repurchase plans while the long-run returns results are consistent with preset plans conveying less private information about future stock price movements than open market repurchases.

7. Are preset repurchase plans used to initiate payouts?

In a final series of tests, we examine the trend in Rule 10b5-1 repurchases in payout initiations. We condition on the subset of firms that initiated payout for the first time after 2001, during which a firm could adopt a Rule 10b5-1 plan. Payout initiators are an interesting subset because these firms should be less influenced by the status quo. We define a "payout initiation" ("repurchase initiation") as the first payout (repurchase) since 1990. We present initiations by year in Table 12 and in Figure 3. We observe an upward trend in preset repurchases as a tool to initiate payout. In recent years (2011-2014) between 8 and 15% of payout initiations include a Rule 10b5-1 component and between 1 and 6% include an ASR. When we condition on firms that repurchase for the first time, we observe that in recent years between one quarter and one third of repurchase initiations include a Rule 10b5-1 component and between 1 and 10% include

an ASR. Preset repurchase plans are a widely used tool, with Rule 10b5-1 plans dominating ASRs, even for firms with no track record of payout or repurchasing.

8. Concluding remarks

This paper exploits a new addition to the menu of payouts, SEC Rule 10b5-1 preset repurchase plans, to reexamine a choice at the core of corporate payout decisions: whether to send a stronger signal of commitment or maintain options to abandon and time payouts. Rule 10b5-1 repurchases differ from open market repurchases by allowing a firm to repurchase while in possession of material, nonpublic information but to maintain an affirmative defense against insider trading allegations. However, firms forfeit the timing and abandonment options associated with open market repurchase in the process. We are the first to our knowledge to document and study the widespread use and rapid growth of Rule 10b5-1, which firms are now using in approximately one quarter of all repurchase announcements.

Consistent with Rule 10b5-1 plans signaling a greater commitment, the larger the portion of the repurchase plan to be executed under the Rule, the greater the completion rate and the faster the plan is completed. Investors recognize and reward this commitment: Abnormal returns around Rule 10b5-1 announcements are positive and significant across all levels of commitment, and returns are generally increasing in the implied level of commitment to repurchasing under the Rule.

The likelihood of repurchasing under the Rule is greater for firms that should value timing and abandon options the least: firms that have greater cash reserves, greater access to external capital, and have a record of poor repurchase timing. Further, using the 2008-2009 financial crisis as a positive exogenous shock to the marginal benefit of financial flexibility, we continue to find strong evidence consistent with the marginal benefits of financial flexibility being associated with declines in the likelihood of adopting Rule 10b5-1 plans. Lastly, we show firms restricted by lengthy blackout windows are more likely to use preset plans, allowing the firm to circumvent blackouts and increase the firms available repurchasing window.

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Figure 1. Preset repurchase announcements in the 21st century

This figure shows the number of repurchase announcements containing a preset repurchase plan (left axis) and the percentage of repurchase announcements that include a preset repurchase component (right axis) from 2001 to 2014.

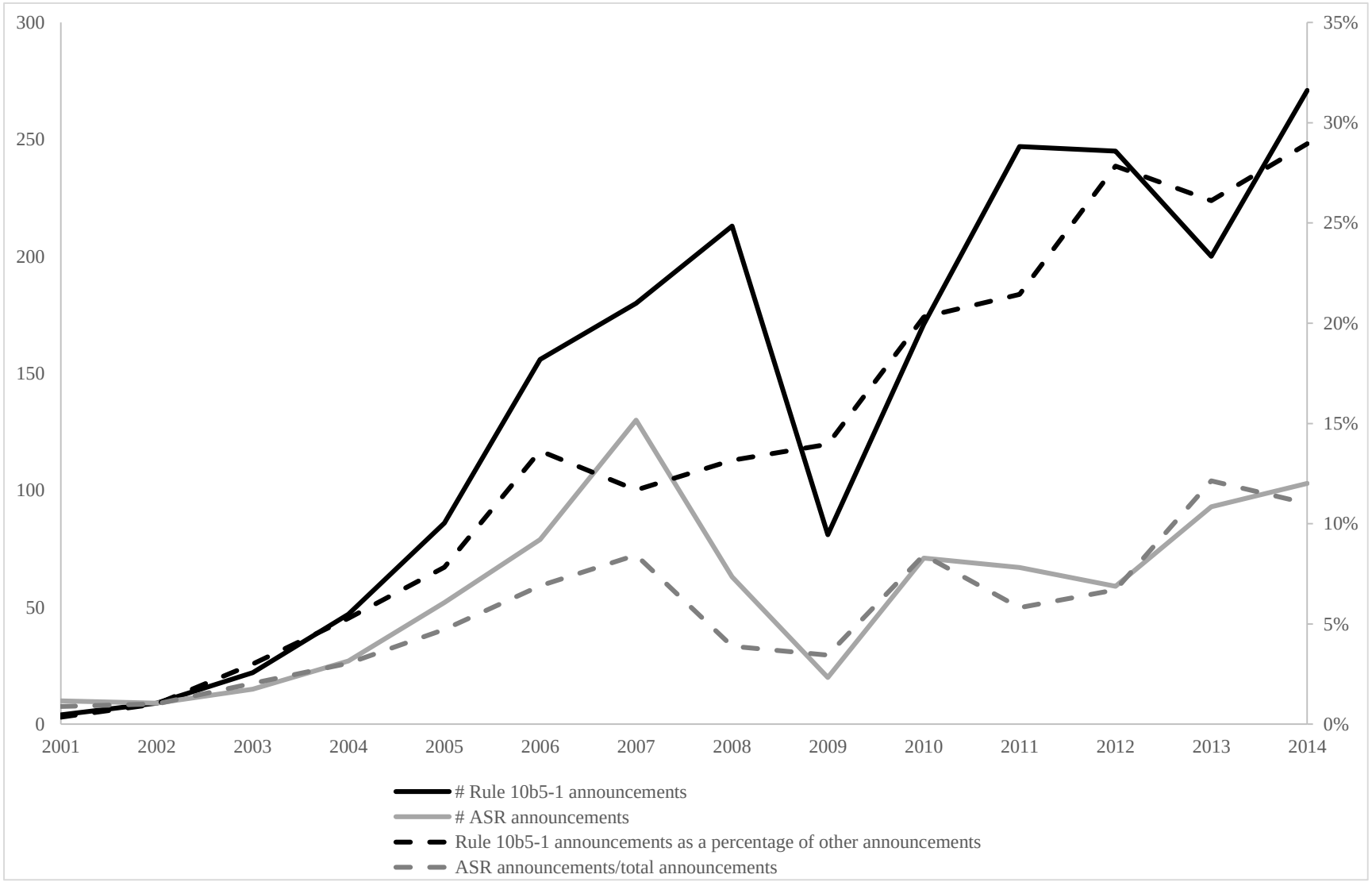

Figure 2. The effect of the financial crisis on the probability of Rule 10b5-1 adoption

This figure shows the hypothetical effect of the financial crisis on the growth in Rule 10b5-1 adoption. The x-axis is time in years, the y-axis the likelihood of adopting a Rule 10b5-1 plan, conditional on announcing a repurchase. The slope of the line corresponds to 0.0256, the marginal effect of the trend variable in Table 4, Model (1). The effect of the financial crisis corresponds to -0.0571, the effect of a discrete change in the financial crisis indicator variable in Table 4, Model (1).

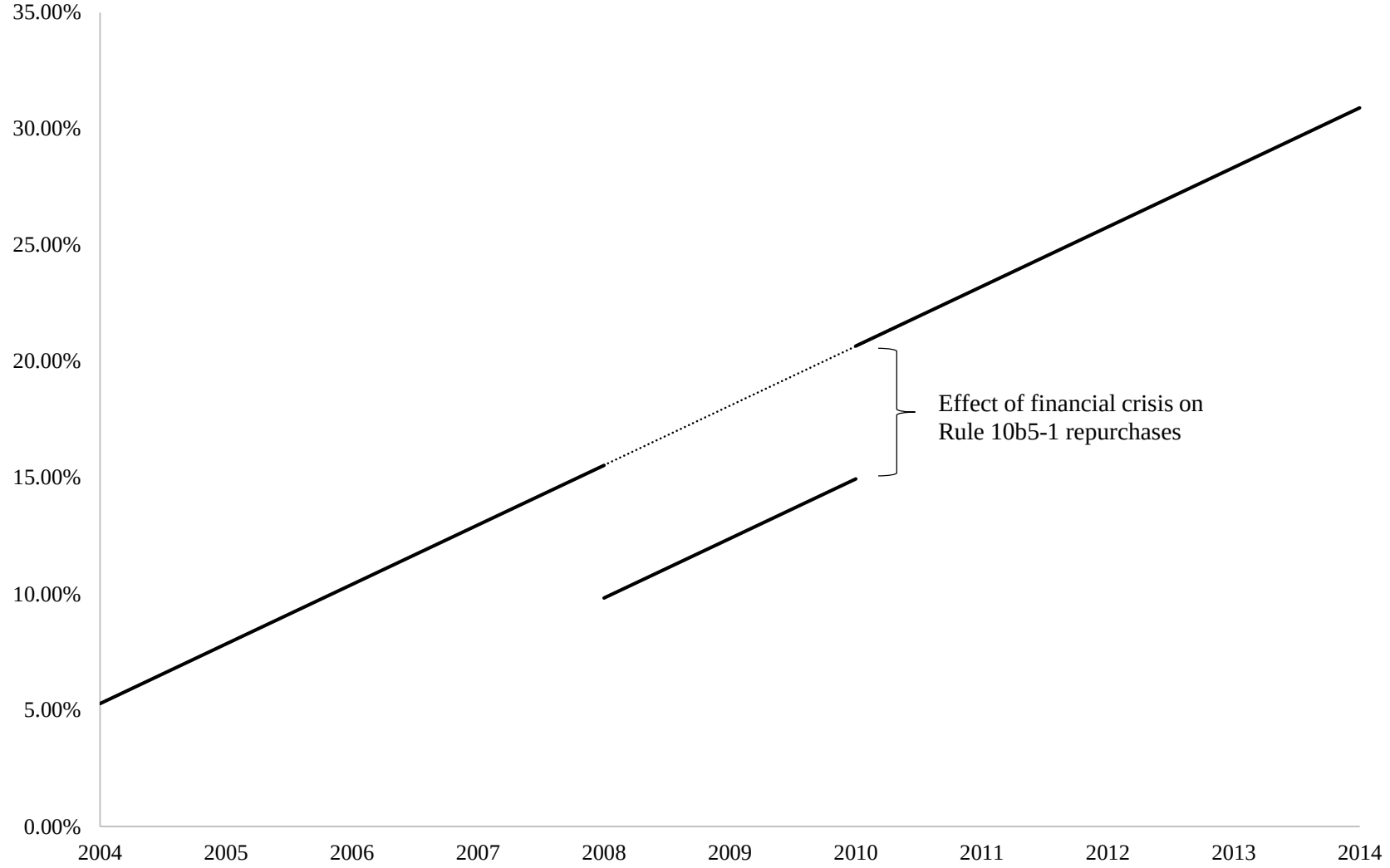

Figure 3. Preset repurchase plans in payout initiations?

This figure presents initiations that include a preset repurchase component as a percentage of repurchase initiations and all payout initiations. We define repurchase (payout) initiations as the first repurchase (payout) since 1990.

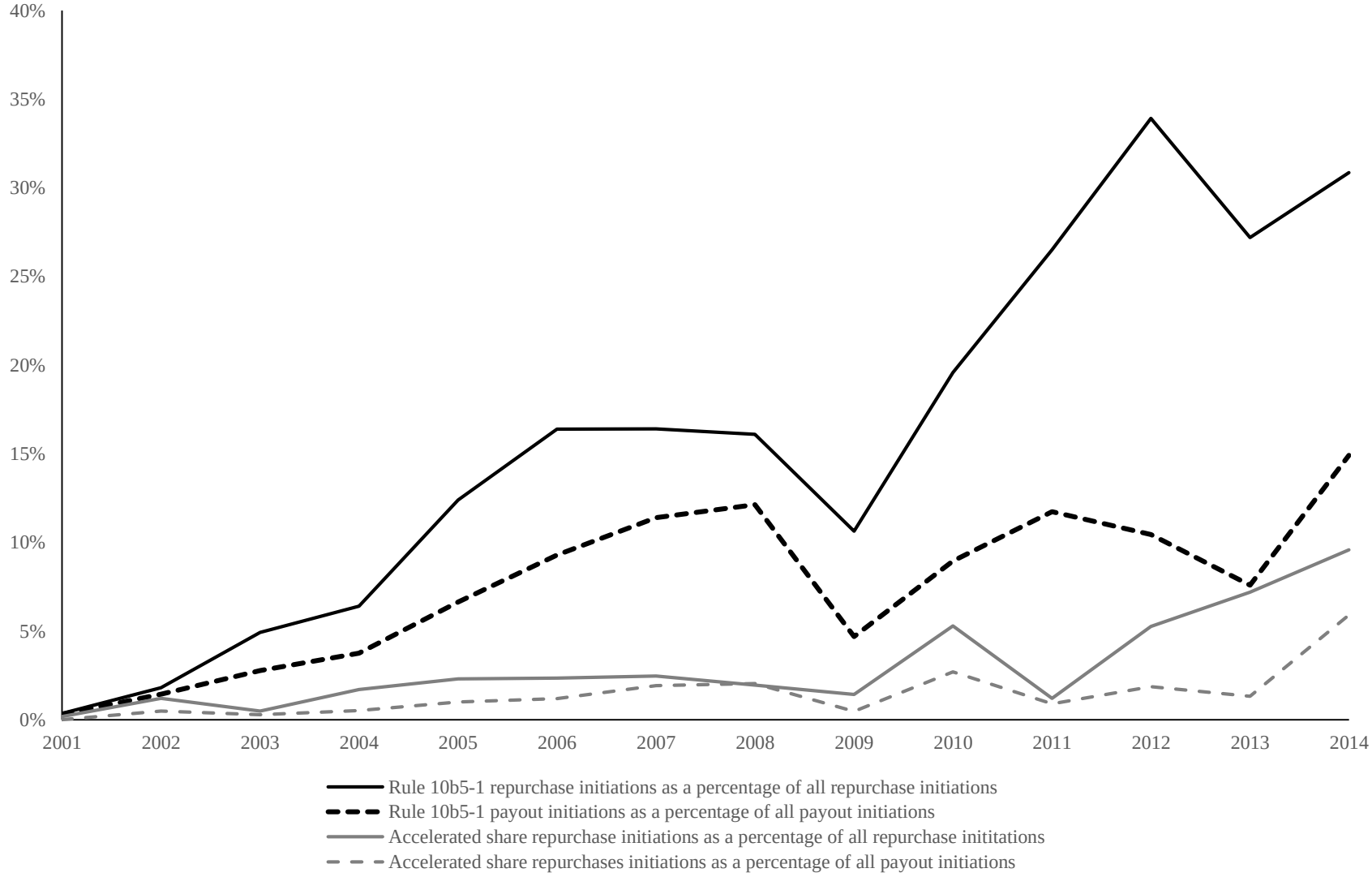

Table 1: Preset repurchase frequency and plan details

Panel A: Annual preset repurchase frequencies

Year	Rule 10b5-1 announcements	ASR announcements	Total Rule 10b5-1, ASR, and OMR announcements	Rule 10b5-1 announcements/total announcements	ASR announcements/total announcements
2001	4	10	1,131	0.35%	0.88%
2002	9	9	887	1.01%	1.01%
2003	22	15	734	3.00%	2.04%
2004	47	27	889	5.29%	3.04%
2005	86	52	1,099	7.83%	4.73%
2006	156	79	1,144	13.64%	6.91%
2007	180	131	1,540	11.69%	8.51%
2008	213	63	1,618	13.16%	3.89%
2009	81	20	580	13.97%	3.45%
2010	172	72	842	20.43%	8.55%
2011	247	69	1,152	21.44%	5.99%
2012	245	64	880	27.84%	7.27%
2013	200	97	766	26.11%	12.66%
2014	271	124	936	28.95%	13.25%
Total	1,933	832	14,198	13.61%	5.86%

Panel B: Preset repurchase announcements by level of commitment

	Pure	Partial	Expected	Boilerplate	Total
Rule 10b5-1 announcements	269	479	234	951	1,933
	13.92%	24.78%	12.11%	49.20%	100.00%

Panel C: Preset repurchase plan details

	N	Mean	10th percentile	Median	90th percentile	Standard Deviation
% shares outstanding	307	5.20	0.84	3.46	10.63	8.01
$ millions	393	81.51	1.96	16.00	200.00	283.11
% total repurchase	383	93.81	85.58	100.00	100.00	19.58
Time to commencement (in days)	213	13.08	0	4	35	18.97
Duration of plan (in days)	299	195.39	37	146	366	164.84

Panel A presents the annual frequency of preset repurchase plans. Panel B divides the Rule 10b5-1 repurchase announcements by level of commitment. "Pure" ("Partial") preset plans represent repurchase programs that are executed fully (in part) through a Rule 10b5-1. We refer to preset plans as "expected" if the firm indicates that it expects to or intends to adopt a Rule 10b5-1 plan to execute its announced repurchase. "Boilerplate" refers to announcements that shares may be repurchased through a Rule 10b5-1 or through other means. Appendix A provides further details and examples of each type of plan. Panel C presents summary statistics on plan details for Rule 10b5-1 repurchases. Plan details are only available for the subset of announcements that include such details. We report the size of the preset repurchase as a percentage of shares outstanding, in millions of dollars, or as a percentage of the

total repurchase plan. Time to commencement is the number of days between the repurchase announcement and the commencement of the preset plan. Duration of the plan is the number of days during which the Rule 10b5-1 trading plan is effective.

Table 2: Do Rule 10b5-1 plans represent a greater commitment?

Panel A: Average completion rates and difference in means tests

Quarter	Non-Rule 10b5-1	Boilerplate	Expected	Partial	Pure	All Rule 10b5-1 - OMR		Expected, Partial, & Pure - OMR		Partial & Pure - OMR		Pure - OMR	
0	0.245	0.240	0.250	0.304	0.317	0.012		0.042	***	0.066	***	0.072	***
1	0.399	0.412	0.450	0.495	0.541	0.043	***	0.093	***	0.121	***	0.142	***
2	0.503	0.521	0.564	0.624	0.607	0.046	***	0.092	***	0.112	***	0.104	***
3	0.576	0.595	0.634	0.690	0.660	0.043	***	0.082	***	0.098	***	0.084	**
4	0.629	0.639	0.682	0.728	0.674	0.031	**	0.063	***	0.070	***	0.045	
5	0.668	0.676	0.707	0.761	0.681	0.024	*	0.046	**	0.051	**	0.014	
6	0.696	0.702	0.731	0.784	0.682	0.018		0.034	*	0.034		-0.014	
7	0.718	0.724	0.746	0.779	0.697	0.012		0.021		0.016		-0.021	
8	0.737	0.738	0.764	0.783	0.705	0.007		0.013		0.004		-0.032	

Panel B: Percent of plans completed and difference in means tests

Quarter	Non-Rule 10b5-1	Boilerplate	Expected	Partial	Pure	All Rule 10b5-1 - OMR		Expected, Partial, & Pure - OMR		Partial & Pure - OMR		Pure - OMR	
0	0.060	0.054	0.062	0.092	0.136	0.009		0.035	***	0.056	***	0.076	***
1	0.140	0.146	0.169	0.208	0.333	0.039	***	0.093	***	0.135	***	0.194	***
2	0.221	0.240	0.302	0.317	0.443	0.061	***	0.131	***	0.164	***	0.222	***
3	0.302	0.315	0.375	0.435	0.493	0.057	***	0.127	***	0.164	***	0.190	***
4	0.376	0.385	0.451	0.513	0.523	0.050	***	0.115	***	0.142	***	0.147	***
5	0.433	0.444	0.487	0.564	0.532	0.042		0.090	***	0.114	***	0.099	**
6	0.478	0.495	0.513	0.623	0.529	0.039		0.071	***	0.094	***	0.051	
7	0.516	0.541	0.556	0.616	0.552	0.038		0.055	**	0.065	*	0.036	
8	0.545	0.567	0.562	0.663	0.554	0.031		0.042		0.058		0.009	

Panel C: Differences in means using propensity score matching

Quarter	Difference in completion rate								Difference in percent of plans completed							
	All Rule 10b5-1 - OMR		Expected, Partial, & Pure - OMR		Partial & Pure - OMR		Pure - OMR		All Rule 10b5-1 - OMR		Expected, Partial, & Pure - OMR		Partial & Pure - OMR		Pure - OMR	
0	-0.005		0.039	**	0.067	***	0.070	**	-0.003		0.035	**	0.032		0.065	***
1	0.048	***	0.106	***	0.156	***	0.143	***	0.016		0.096	***	0.112	***	0.174	***
2	0.058	***	0.122	***	0.154	***	0.132	***	0.067	***	0.153	***	0.164	***	0.212	***
3	0.045	***	0.086	***	0.129	***	0.120	***	0.046	**	0.151	***	0.190	***	0.193	***
4	0.036	**	0.057	**	0.088	***	0.071	**	0.045	**	0.120	***	0.157	***	0.142	***
5	0.029	**	0.066	***	0.131	***	0.083	***	0.026		0.111	***	0.178	***	0.136	***
6	0.029	**	0.048	**	0.077	***	0.024		0.047	**	0.087	***	0.128	***	0.068	**
7	0.022		0.025		0.062	**	0.061	**	0.035		0.083	***	0.131	***	0.090	***
8	0.027	*	0.038	*	0.046	*	0.070	***	0.053	**	0.090	***	0.105	***	0.096	***

Panel D: Time to completion

Mean time to completion				
Non-Rule 10b5-1	Boilerplate	Expected	Partial	Pure
3.218	3.103	2.747	2.720	1.453

	Difference in means							
	All Rule 10b5-1 - OMR		Expected, Partial, & Pure - OMR		Partial & Pure - OMR		Pure - OMR	
Difference in means	-0.419	***	-0.875	***	-1.132	***	-1.765	***
Propensity score matching	-0.209	*	-0.782	***	-1.063	***	-1.248	***

This table examines completion rates around Rule 10b5-1 repurchase announcements (by level of commitment) and around open market repurchase (OMR) announcements without a Rule 10b5-1 component. Panel A presents average cumulative quarterly completion rates, where Quarter 0 corresponds to the quarter of the announcement, and difference in means tests. We truncate completion rates at 100%. Panel B presents the cumulative quarterly percentage of repurchase plans completed and difference in means tests. Panel C presents the average treatment effect of including a Rule 10b5-1 plan (by level of commitment) on completion rate and on percentage of plans completed. The propensity score matching process, based on logit regressions presented in Table C.2, yields the five nearest neighbors. Panel D presents the average time to completion, i.e., the number of quarters until the plan is complete, difference in means tests, and the average treatment effect using propensity score matching. ***, **, * represent significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table 3: Characteristics of repurchasing firms by inclusion of a Rule 10b5-1 plan

	Rule 10b5-1		OMR		Difference in means		
	Mean	Std. Dev.	Mean	Std. Dev.	Diff	*t*-stat	
Abandonment option hypothesis							
Cash	0.206	0.197	0.170	0.172	0.036	5.642	***
Cash flow	0.035	0.027	0.034	0.030	0.001	1.089	
Standard deviation of cash flow	0.011	0.012	0.012	0.014	0.000	-0.850	
Leverage	0.157	0.172	0.174	0.171	-0.017	-2.764	***
Dividend payer	0.443	0.497	0.559	0.497	-0.116	-2.208	**
Book-to-market	0.574	0.369	0.539	0.354	0.035	2.801	***
Prior stock performance	-0.025	0.131	-0.039	0.134	0.014	2.944	***
Standard deviation of returns	0.024	0.010	0.024	0.010	0.001	1.506	
Ln(illiquidity)	-19.830	2.669	-19.470	3.099	-0.361	-3.357	***
Timing hypothesis							
Financial sophistication	0.207	0.405	0.195	0.396	0.012	0.858	
Ln(Market Cap)	7.165	1.769	7.087	1.963	0.079	1.131	
Repurchase timing	-0.014	0.098	-0.022	0.096	0.007	1.717	*
Blackout window hypothesis							
Blackout window (days)	392.763	108.681	371.650	120.241	21.113	5.040	***
8-K reporting frequency	6.772	3.333	6.488	3.305	0.283	2.321	**
Litigation risk hypothesis							
High litigation industry	0.363	0.481	0.281	0.450	0.082	5.078	***
Litigation risk	0.025	0.018	0.024	0.017	0.001	1.459	
Additional controls							
Standard deviation of repurchases	0.876	1.060	0.732	0.943	0.144	4.182	***
Repurchase frequency	0.468	0.365	0.452	0.368	0.016	1.250	
Institutional ownership	0.740	0.246	0.687	0.278	0.053	5.420	***
Options	0.024	0.023	0.024	0.024	0.000	0.396	
Dilution	0.025	0.037	0.026	0.040	-0.001	-0.742	
Industry takeover activity	0.016	0.011	0.016	0.010	0.000	0.915	
EPS bonus dummy	0.220	0.415	0.166	0.372	0.054	2.492	**

This table presents summary statistics on characteristics of firms that announce Rule 10b5-1 repurchase plans or open market repurchases (OMRs) without a Rule 10b5-1 or accelerated component between 2004 and 2014. We collapse our data to the firm-year level, implying that firms with at least one Rule 10b5-1 are considered Rule 10b5-1 firms in the year of the announcement. Each repurchase announcement is matched to annual data from the prior fiscal year-end, unless otherwise noted. Variable definitions are in Appendix B. Our sample generally consists of 1,014 Rule 10b5-1 firm-year observations and 3,611 non-preset OMR firm-year observations but drops to 685 (578; 368) Rule 10b5-1 observations and 2,264 (2,114; 2,129) non-preset OMR observations for our measure of repurchase timing (options; EPS bonus dummy).

Table 4: What firm characteristics are related to preset repurchase adoption?

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Abandonment option hypothesis								
Cash	0.933**	0.579	0.789**	0.857**	0.559	0.934**	0.966*	0.541
	(2.377)	(1.182)	(1.987)	(2.248)	(1.348)	(2.375)	(1.826)	(0.982)
Cash flow	2.205	3.284	2.109	2.667	1.978	2.310	1.934	1.182
	(1.088)	(1.306)	(1.049)	(1.330)	(0.929)	(1.137)	(0.739)	(0.402)
Standard deviation of cash flow	-13.384***	-17.241**	-13.443***	-13.528***	-13.839**	-13.785***	-6.103	-15.955*
	(-2.589)	(-2.285)	(-2.632)	(-2.681)	(-2.461)	(-2.640)	(-0.955)	(-1.835)
Leverage	-0.549	-0.822*	-0.668*	-0.462	-0.625	-0.518	-0.716	-0.931*
	(-1.543)	(-1.834)	(-1.839)	(-1.343)	(-1.580)	(-1.457)	(-1.486)	(-1.774)
Dividend payer	-0.359***	-0.455***	-0.351***	-0.333***	-0.352***	-0.357***	-0.364*	-0.449***
	(-2.897)	(-3.005)	(-2.782)	(-2.735)	(-2.673)	(-2.879)	(-1.958)	(-2.776)
Book-to-market	0.399**	0.344	0.287	0.352**	0.164	0.404**	0.647***	0.229
	(2.208)	(1.494)	(1.569)	(1.973)	(0.841)	(2.233)	(2.771)	(0.823)
Prior stock performance	0.599**	0.553	0.589*	0.614**	0.653**	0.555*	0.401	1.312***
	(1.966)	(1.456)	(1.906)	(2.035)	(2.056)	(1.821)	(0.973)	(2.963)
Standard deviation of returns	0.366	7.950	0.308	-1.842	-5.523	0.190	-3.172	-5.953
	(0.056)	(1.007)	(0.046)	(-0.285)	(-0.776)	(0.029)	(-0.310)	(-0.612)
Ln(illiquidity)	-0.162**	-0.170*	-0.177***	-0.149**	-0.149*	-0.169**	-0.075	-0.168
	(-2.379)	(-1.789)	(-2.702)	(-2.219)	(-1.897)	(-2.431)	(-0.747)	(-1.294)
Timing option hypothesis								
Financial sophistication	-0.094	0.030	-0.087	-0.114	-0.156	-0.096	-0.262	-0.075
	(-0.766)	(0.206)	(-0.691)	(-0.923)	(-1.163)	(-0.779)	(-1.281)	(-0.463)
Ln(Market Cap)	-0.153	-0.178	-0.230**	-0.154	-0.240*	-0.161	0.033	-0.279
	(-1.389)	(-1.210)	(-2.293)	(-1.397)	(-1.941)	(-1.442)	(0.227)	(-1.641)
Repurchase timing		1.111**						
		(2.152)						
Blackout window hypothesis								
Blackout window (days)	0.002***	0.002***	0.002***	0.002***	0.001*	0.002***	0.001**	0.001*
	(3.438)	(2.852)	(2.931)	(3.614)	(1.802)	(3.542)	(2.174)	(1.820)
8-K reporting frequency			0.046***					
			(2.822)					
Litigation risk hypothesis								
High litigation industry				0.166				
				(1.283)				
Litigation risk					2.832			
					(0.759)			
Controls								
Standard deviation of	0.081	0.116*	0.075	0.077	0.059	0.075	0.113	0.137**
repurchases	(1.498)	(1.898)	(1.380)	(1.445)	(1.035)	(1.396)	(1.523)	(1.980)
Repurchase frequency	-0.004	-0.109	0.052	-0.015	0.027	-0.004	-0.106	0.082
	(-0.020)	(-0.487)	(0.303)	(-0.087)	(0.139)	(-0.021)	(-0.427)	(0.381)
Institutional ownership	0.047	-0.125	0.144	0.146	0.055	0.062	0.276	0.076
	(0.175)	(-0.355)	(0.515)	(0.536)	(0.185)	(0.227)	(0.733)	(0.164)
Dilution	0.232	0.896	0.106	0.077	0.405	0.366	1.463	
	(0.188)	(0.568)	(0.084)	(0.063)	(0.298)	(0.296)	(0.871)	
Industry Takeover activity						0.405		
						(0.119)		
EPS bonus dummy							0.241	
							(1.191)	
Options								-2.301
								(-0.656)
Observations	4,625	2,949	4,502	4,625	3,678	4,593	2,497	2,692
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Pseudo R-squared	0.0791	0.0738	0.0788	0.0752	0.0724	0.0793	0.0540	0.0658

In this table we model the decision to adopt a Rule 10b5-1 plan relative to an open market repurchase without a Rule 10b5-1 component (Panel A) and to an accelerated share repurchase (Panel B). Panels A and B report results from logit regressions where the dependent variable takes a value of one if a firm announced a Rule 10b5-1 as part of its repurchase program and zero otherwise. We collapse our data to the firm-year level, implying that firms with at least one Rule 10b5-1 repurchase program are considered Rule 10b5-1 firms. Independent variables are as defined in Appendix B. Year fixed effects are included in all specifications. Industry controls are based on Fama and French (1997) 12 industry classifications but are excluded in the specification with the high litigation industry indicator. Z-statistics are reported in parentheses and are based on robust standard errors clustered by firm. ***, **, * represent significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table 5: Multinomial logits

	(1)				(2)				(3)			
	Boilerplate	Expected	Partial	Pure	Boilerplate	Expected	Partial	Pure	Boilerplate	Expected	Partial	Pure
Abandonment option hypothesis												
Cash	0.878**	1.711***	0.024	1.957***	1.071**	0.671	-0.691	1.703**	0.910**	0.369	0.007	2.066***
	(2.276)	(2.849)	(0.058)	(3.154)	(2.202)	(0.804)	(-1.378)	(2.167)	(2.279)	(0.545)	(0.018)	(3.289)
Cash flow	4.690*	-3.910	3.439	-0.009	6.014**	-9.245*	5.107*	2.358	4.834**	-8.507**	3.936	0.610
	(1.957)	(-0.997)	(1.405)	(-0.002)	(2.008)	(-1.784)	(1.689)	(0.437)	(1.971)	(-2.032)	(1.593)	(0.143)
Standard deviation of cash flow	-16.470***	-8.463	-13.376**	-15.459	-19.819**	4.027	-27.027***	-25.982*	-16.716***	-3.251	-14.670**	-17.669*
	(-2.767)	(-1.025)	(-2.197)	(-1.549)	(-2.343)	(0.380)	(-3.073)	(-1.746)	(-2.736)	(-0.396)	(-2.358)	(-1.740)
Leverage	-0.330	-0.163	-1.318***	-0.178	-0.582	-0.339	-1.763***	-0.013	-0.352	-0.816	-1.414***	-0.206
	(-0.947)	(-0.252)	(-3.255)	(-0.258)	(-1.244)	(-0.386)	(-3.605)	(-0.016)	(-0.990)	(-1.142)	(-3.442)	(-0.299)
Dividend payer	-0.515***	0.201	-0.353**	0.019	-0.717***	0.276	-0.401**	-0.280	-0.496***	0.284	-0.368***	0.027
	(-3.865)	(0.844)	(-2.545)	(0.076)	(-4.161)	(0.901)	(-2.472)	(-0.955)	(-3.655)	(1.132)	(-2.629)	(0.111)
Book-to-market	0.783***	0.122	-0.123	0.557*	0.804***	-0.255	-0.393	0.816**	0.734***	-0.291	-0.211	0.540*
	(4.098)	(0.345)	(-0.584)	(1.814)	(3.320)	(-0.516)	(-1.485)	(2.263)	(3.719)	(-0.746)	(-0.978)	(1.739)
Prior stock performance	-0.061	1.301*	1.061**	0.246	-0.221	1.262	1.089**	0.160	-0.120	1.209	1.059**	0.370
	(-0.143)	(1.771)	(2.349)	(0.353)	(-0.393)	(1.203)	(1.983)	(0.188)	(-0.275)	(1.563)	(2.326)	(0.529)
Standard deviation of returns	4.023	6.341	-6.675	9.930	12.224	5.363	6.020	11.229	3.276	12.915	-6.867	8.415
	(0.509)	(0.510)	(-0.817)	(0.826)	(1.218)	(0.306)	(0.613)	(0.745)	(0.406)	(0.993)	(-0.830)	(0.696)
Ln(illiquidity)	-0.125*	-0.252**	-0.167**	-0.115	-0.101	-0.450**	-0.184*	-0.148	-0.161**	-0.268**	-0.174**	-0.119
	(-1.754)	(-2.125)	(-2.232)	(-1.062)	(-1.051)	(-2.262)	(-1.937)	(-1.071)	(-2.094)	(-2.062)	(-2.247)	(-1.087)
Timing hypothesis												
Financial sophistication	0.039	-0.312	-0.171	-0.348	0.219	-0.113	-0.177	-0.018	0.052	-0.327	-0.169	-0.356
	(0.306)	(-1.194)	(-1.187)	(-1.206)	(1.410)	(-0.358)	(-1.045)	(-0.060)	(0.405)	(-1.185)	(-1.161)	(-1.233)
Ln(Market Cap)	0.032	-0.208	-0.351***	-0.454**	0.074	-0.495*	-0.390***	-0.502**	-0.059	-0.352*	-0.401***	-0.477***
	(0.319)	(-1.210)	(-3.202)	(-2.532)	(0.550)	(-1.855)	(-2.846)	(-2.255)	(-0.543)	(-1.856)	(-3.534)	(-2.623)
Repurchase timing					0.870	2.113	0.329	2.282**				
					(1.193)	(1.575)	(0.462)	(2.070)				
Blackout window hypothesis												
Blackout window (days)	0.002***	0.002*	0.002***	0.001	0.002***	0.001	0.002***	0.002	0.002***	0.000	0.001**	0.001
	(3.727)	(1.812)	(2.793)	(1.245)	(2.632)	(0.992)	(2.670)	(1.438)	(3.598)	(0.339)	(2.439)	(1.342)
8-K reporting frequency									0.037**	0.023	0.037**	0.060*
									(2.196)	(0.718)	(2.017)	(1.921)
Controls												
Standard deviation of repurchases	-0.052	0.142	0.147***	0.004	-0.032	0.234**	0.191***	-0.055	-0.058	0.155*	0.144***	-0.010
	(-0.811)	(1.583)	(2.669)	(0.040)	(-0.433)	(2.321)	(3.033)	(-0.472)	(-0.894)	(1.670)	(2.586)	(-0.103)
Repurchase frequency	-0.281	-0.255	0.316*	0.196	-0.292	0.284	0.143	-0.544	-0.231	-0.075	0.350*	0.157
	(-1.593)	(-0.796)	(1.684)	(0.579)	(-1.213)	(0.618)	(0.585)	(-1.293)	(-1.281)	(-0.224)	(1.847)	(0.464)
Institutional ownership	0.276	-1.400***	0.476	0.479	-0.282	-1.508**	0.449	0.022	0.395	-0.973*	0.487	0.320
	(0.877)	(-2.763)	(1.435)	(0.894)	(-0.670)	(-2.043)	(1.094)	(0.033)	(1.191)	(-1.741)	(1.434)	(0.585)
Dilution	1.033	1.739	-0.996	-1.393	2.980*	2.564	0.332	-4.739	0.931	2.162	-1.205	-1.517
	(0.737)	(0.801)	(-0.593)	(-0.533)	(1.647)	(0.875)	(0.169)	(-1.214)	(0.661)	(0.955)	(-0.708)	(-0.580)
Observations	4,947				3,203				4,822			
Year fixed effects	Yes				Yes				Yes			
Industry fixed effects	Yes				Yes				Yes			
Pseudo R-squared	0.083				0.0933				0.0829			

Table 5: Multinomial logits, *continued*

	(4)				(5)			
	Boilerplate	Expected	Partial	Pure	Boilerplate	Expected	Partial	Pure
Abandonment option hypothesis								
Cash	0.728**	2.049***	-0.176	2.051***	0.485	1.897***	-0.615	3.113***
	(1.962)	(3.586)	(-0.447)	(3.453)	(1.156)	(2.955)	(-1.385)	(3.022)
Cash flow	5.058**	-3.065	4.015*	-0.331	4.725*	-2.911	2.117	1.710
	(2.147)	(-0.823)	(1.685)	(-0.082)	(1.884)	(-0.697)	(0.809)	(0.377)
Standard deviation of cash flow	-16.647***	-8.924	-12.583**	-15.950*	-15.773**	-7.642	-14.927**	-16.071
	(-2.862)	(-1.108)	(-2.154)	(-1.672)	(-2.519)	(-0.863)	(-2.273)	(-1.499)
Leverage	-0.233	-0.193	-1.235***	-0.105	-0.623	0.394	-1.380***	0.226
	(-0.681)	(-0.306)	(-3.141)	(-0.159)	(-1.570)	(0.577)	(-3.221)	(0.298)
Dividend payer	-0.461***	0.061	-0.289**	-0.011	-0.540***	0.068	-0.288**	0.047
	(-3.617)	(0.264)	(-2.165)	(-0.047)	(-3.767)	(0.269)	(-1.976)	(0.179)
Book-to-market	0.770***	-0.019	-0.138	0.530*	0.359	0.349	-0.311	0.789**
	(4.119)	(-0.056)	(-0.666)	(1.738)	(1.549)	(0.885)	(-1.325)	(2.304)
Prior stock performance	-0.049	1.253*	1.054**	0.319	0.022	1.695**	1.015**	0.205
	(-0.117)	(1.717)	(2.346)	(0.460)	(0.050)	(2.172)	(2.128)	(0.284)
Standard deviation of returns	1.210	5.518	-8.258	8.588	-9.429	7.806	-13.662	18.821
	(0.156)	(0.452)	(-1.031)	(0.728)	(-1.015)	(0.553)	(-1.472)	(1.427)
Ln(illiquidity)	-0.094	-0.236**	-0.157**	-0.136	-0.048	-0.183	-0.186**	-0.204
	(-1.336)	(-2.065)	(-2.133)	(-1.273)	(-0.567)	(-1.294)	(-2.105)	(-1.496)
Timing option hypothesis								
Financial sophistication	0.026	-0.349	-0.174	-0.355	-0.108	-0.304	-0.104	-0.366
	(0.203)	(-1.345)	(-1.211)	(-1.233)	(-0.742)	(-1.091)	(-0.685)	(-1.129)
Ln(Market Cap)	0.046	-0.187	-0.355***	-0.473***	-0.028	-0.159	-0.485***	-0.446**
	(0.463)	(-1.121)	(-3.273)	(-2.680)	(-0.240)	(-0.818)	(-3.954)	(-2.135)
Blackout window hypothesis								
Blackout window (days)	0.002***	0.002**	0.002***	0.001	0.001*	0.001	0.001	0.002
	(3.573)	(2.048)	(2.940)	(1.386)	(1.749)	(1.223)	(0.813)	(1.588)
Litigation risk hypothesis								
High litigation industry	0.222*	0.069	0.201	-0.081				
	(1.826)	(0.320)	(1.580)	(-0.350)				
Litigation risk					5.418	3.952	3.391	-22.782*
					(1.262)	(0.545)	(0.691)	(-1.912)
Controls								
Standard deviation of repurchases	-0.062	0.160*	0.140**	0.017	-0.085	0.129	0.129**	-0.042
	(-0.972)	(1.789)	(2.552)	(0.169)	(-1.206)	(1.378)	(2.196)	(-0.371)
Repurchase frequency	-0.267	-0.293	0.302	0.175	-0.382*	-0.189	0.374*	0.289
	(-1.527)	(-0.920)	(1.626)	(0.522)	(-1.945)	(-0.542)	(1.835)	(0.759)
Institutional ownership	0.365	-1.232**	0.569*	0.526	0.443	-0.959*	0.174	0.456
	(1.171)	(-2.487)	(1.739)	(1.012)	(1.257)	(-1.707)	(0.482)	(0.773)
Dilution	0.994	1.880	-1.304	-1.249	1.638	1.044	-0.878	-0.807
	(0.714)	(0.888)	(-0.779)	(-0.487)	(1.101)	(0.429)	(-0.484)	(-0.305)
Observations	4,947				3,959			
Year fixed effects	Yes				Yes			
Industry fixed effects	No				Yes			
Pseudo R-squared	0.0749				0.0846			

In this table we model the decision to adopt a Rule 10b5-1 plan relative to the decision to adopt an open market repurchase without a Rule 10b5-1 component using multinomial logit regressions. The base case is open market repurchases not associated with a preset plan. We collapse our data to the firm-year level, implying that firms with at least one Rule 10b5-1 repurchase program are considered Rule 10b5-1 firms. If a firm announces multiple Rule 10b5-1 repurchase plans within the same year, we categorize it according to the announcement with the highest level of commitment. Independent variables are as defined in Appendix B. Table 1 and Appendix A explain our categorization of Rule 10b5-1 announcements. Year fixed effects are included in all specifications. Industry controls are based on Fama and French (1997) 12 industry classifications but are excluded in the specification with the high litigation industry indicator. *Z*-statistics are reported in parentheses and are based on robust standard errors clustered by firm. ***, **, * represent significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table 6: Hazard models of preset plan adoption

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Abandonment option hypothesis								
Cash	0.736**	0.160	0.582	0.729**	0.630	0.749**	0.614	0.319
	(2.037)	(0.355)	(1.558)	(2.017)	(1.596)	(2.075)	(1.206)	(0.665)
Cash flow	1.020	0.028	1.051	1.013	1.578	1.133	-1.104	-2.010
	(0.527)	(0.012)	(0.543)	(0.522)	(0.747)	(0.587)	(-0.415)	(-0.736)
Standard deviation of cash flow	-10.251**	-11.695*	-11.464**	-10.388**	-10.171*	-10.839**	4.903	-5.596
	(-2.085)	(-1.665)	(-2.260)	(-2.100)	(-1.927)	(-2.174)	(0.834)	(-0.779)
Leverage	-0.503	-0.649	-0.686**	-0.498	-0.501	-0.465	-0.911*	-0.415
	(-1.584)	(-1.554)	(-2.095)	(-1.571)	(-1.426)	(-1.461)	(-1.655)	(-1.005)
Dividend payer	-0.253**	-0.361**	-0.259**	-0.250**	-0.191	-0.246*	-0.422*	-0.272*
	(-2.007)	(-2.210)	(-1.992)	(-1.977)	(-1.402)	(-1.953)	(-1.957)	(-1.729)
Book-to-market	0.314*	0.176	0.219	0.315*	0.264	0.312*	0.293	0.075
	(1.888)	(0.800)	(1.260)	(1.896)	(1.424)	(1.901)	(1.152)	(0.314)
Prior stock performance	0.321	0.206	0.302	0.318	0.440	0.309	0.482	1.183**
	(0.840)	(0.396)	(0.766)	(0.831)	(1.092)	(0.807)	(1.039)	(2.163)
Standard deviation of returns	4.361	4.126	4.768	4.215	2.287	4.250	-53.901***	-10.950
	(0.700)	(0.557)	(0.740)	(0.673)	(0.320)	(0.677)	(-4.515)	(-1.194)
Ln(illiquidity)	-0.155**	-0.159*	-0.135**	-0.154**	-0.167**	-0.166***	-0.036	0.039
	(-2.566)	(-1.816)	(-2.241)	(-2.555)	(-2.286)	(-2.670)	(-0.393)	(0.369)
Timing option hypothesis								
Financial sophistication	-0.272**	-0.176	-0.283**	-0.275**	-0.353**	-0.283**	-0.408*	-0.355**
	(-2.136)	(-1.115)	(-2.200)	(-2.151)	(-2.448)	(-2.208)	(-1.712)	(-2.257)
Ln(Market Cap)	-0.203**	-0.213*	-0.221**	-0.204**	-0.260**	-0.224**	0.022	-0.011
	(-2.241)	(-1.672)	(-2.424)	(-2.245)	(-2.575)	(-2.420)	(0.175)	(-0.080)
Repurchase timing		1.070*						
		(1.909)						
Blackout window hypothesis								
Blackout window (days)	0.000	0.001	0.000	0.000	0.000	0.000	-0.001	0.000
	(0.902)	(1.467)	(0.517)	(0.930)	(0.151)	(0.934)	(-1.237)	(0.483)
8-K reporting frequency			0.058***					
			(3.880)					
Litigation risk hypothesis								
High litigation industry				0.064				
				(0.358)				
Litigation risk					-3.817			
					(-0.818)			
Controls								
Standard deviation of Repurchases	0.131**	0.149**	0.125**	0.129**	0.116**	0.119**	0.024	0.136*
	(2.520)	(2.544)	(2.321)	(2.483)	(2.058)	(2.280)	(0.304)	(1.936)
Repurchase frequency	-0.180	-0.495**	-0.166	-0.178	-0.191	-0.182	-0.542**	-0.371*
	(-1.048)	(-2.191)	(-0.960)	(-1.036)	(-1.020)	(-1.054)	(-2.080)	(-1.734)
Institutional ownership	0.385	-0.104	0.477	0.390	0.323	0.415	0.204	0.685
	(1.309)	(-0.257)	(1.589)	(1.325)	(0.991)	(1.392)	(0.475)	(1.499)
Dilution	0.950	1.642	0.683	0.964	1.090	0.841	3.377**	
	(0.866)	(1.031)	(0.609)	(0.878)	(0.891)	(0.754)	(2.512)	
Industry Takeover activity						-7.028		
						(-1.447)		
EPS bonus dummy							0.392**	
							(1.975)	
Options								4.863*
								(1.705)
Observations	4,006	2,514	3,911	4,006	3,144	3,977	2,395	2,414
Pseudo R-squared	0.0152	0.0215	0.0193	0.0152	0.0160	0.0161	0.0366	0.0211

In this table we model the duration to Rule 10b5-1 plan adoption using a Cox proportional hazard model. The duration to adoption is measured as the number of calendar days from the end of 2003 to the first time a firm adopts a Rule 10b5-1 plan. If the firm enters the sample after 2003 we calculate duration as the number of days from the end of the first calendar year in Compustat. Independent variables are as defined in Appendix B. We also include industry dummies based on Fama and French (1997) 12 industry classifications. We report coefficients with *Z*-statistics based on robust standard errors clustered by firm in parentheses. ***, **, * represent significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table 7: Exogenous shock to cost of adopting a preset repurchase plan

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Trend	0.163***	0.163***	0.258***	0.151***	0.167***	0.164***	0.176***	0.118***
	(9.236)	(9.225)	(3.289)	(6.437)	(9.269)	(9.392)	(9.211)	(4.635)
Financial crisis	-0.363***	-0.359***	-0.527***	-0.276**	-0.342***	-0.357***	-0.408***	-0.461***
	(-3.334)	(-3.297)	(-2.923)	(-2.142)	(-3.093)	(-3.271)	(-3.431)	(-3.236)
Industry takeover activity		0.322						
		(0.095)						
EPS bonus dummy			0.257					
			(1.274)					
Repurchase timing				1.102**				
				(2.146)				
8-K reporting frequency					0.045***			
					(2.782)			
High litigation industry						0.165		
						(1.275)		
Litigation risk							2.307	
							(0.617)	
Options								-2.524
								(-0.724)
Additional controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,625	4,593	2,497	2,952	4,502	4,625	3,678	2,692
Industry FE	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Pseudo R-squared	0.0765	0.0767	0.0515	0.0711	0.0763	0.0727	0.0696	0.0630

This table reports results from logit regressions where the dependent variable takes a value of one if a firm announced a Rule 10b5-1 as part of its repurchase program and zero otherwise. We collapse our data to the firm-year level, implying that firms with at least one Rule 10b5-1 are considered Rule 10b5-1 firms. Trend is a count variable equal to 1 for observations in 2004, 2 for observations in 2005, etc. Financial crisis is an indicator variable equal to 1 for announcements made during 2008 or 2009. Other independent variables are defined in Appendix B. All specifications include standard controls and year fixed effects. Industry controls are based on Fama and French (1997) 12 industry classifications but are excluded in the specification with the high litigation industry indicator. *Z*-statistics are reported in parentheses and are based on robust standard errors clustered by firm. ***, **, * represent significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table 8: Rule 10b5-1 adoptions versus accelerated share repurchase adoption

	(1)	(4)	(5)	(6)	(7)	(2)	(3)	(8)
Cash	0.696	0.004	0.526	0.519	0.073	0.665	2.072**	0.444
	(1.067)	(0.006)	(0.772)	(0.825)	(0.112)	(1.021)	(2.064)	(0.551)
Cash flow	9.233**	5.765	7.873*	9.651**	10.032**	9.704**	5.288	7.310
	(1.986)	(1.113)	(1.705)	(2.270)	(2.060)	(2.063)	(0.811)	(1.139)
Standard deviation of cash flow	-23.002***	-29.813***	-21.392**	-21.331***	-17.609*	-23.046***	-23.378**	-19.738
	(-2.805)	(-2.844)	(-2.525)	(-2.704)	(-1.896)	(-2.823)	(-2.025)	(-1.400)
Leverage	-0.330	-0.425	-0.350	-0.419	-0.845	-0.286	0.096	-0.408
	(-0.501)	(-0.537)	(-0.529)	(-0.664)	(-1.188)	(-0.433)	(0.086)	(-0.487)
Dividend payer	-0.013	-0.286	0.000	0.028	0.004	-0.021	-0.393	0.051
	(-0.049)	(-0.876)	(0.001)	(0.114)	(0.012)	(-0.075)	(-1.008)	(0.176)
Book-to-market	0.788*	0.560	0.754	0.907**	0.665	0.784*	1.517*	0.902*
	(1.707)	(1.044)	(1.599)	(2.019)	(1.360)	(1.702)	(1.712)	(1.683)
Prior stock performance	0.069	0.140	0.068	0.059	0.195	0.031	0.489	0.179
	(0.104)	(0.180)	(0.103)	(0.090)	(0.274)	(0.047)	(0.502)	(0.235)
Standard deviation of returns	30.516*	35.705*	33.303**	36.234**	9.858	30.836*	48.051*	43.313**
	(1.840)	(1.884)	(2.052)	(2.272)	(0.569)	(1.849)	(1.724)	(2.292)
Ln(illiquidity)	0.489***	0.329	0.433**	0.572***	0.538***	0.499***	0.502**	0.197
	(2.987)	(1.578)	(2.447)	(3.518)	(2.865)	(3.034)	(2.331)	(0.818)
Financial sophistication	-0.061	-0.068	-0.039	0.017	-0.031	-0.041	-0.044	0.079
	(-0.264)	(-0.255)	(-0.168)	(0.076)	(-0.124)	(-0.178)	(-0.108)	(0.301)
Ln(Market Cap)	0.115	-0.044	0.063	0.219	0.049	0.130	0.175	-0.217
	(0.543)	(-0.167)	(0.263)	(1.035)	(0.208)	(0.609)	(0.623)	(-0.713)
Repurchase timing		-0.270						
		(-0.282)						
Blackout window (days)	0.001	0.001	0.001	0.001	0.001	0.002	0.001	0.001
	(1.250)	(0.614)	(1.062)	(1.101)	(0.730)	(1.276)	(0.595)	(0.906)
8-K reporting frequency			-0.037					
			(-1.260)					
High litigation industry				0.382				
				(1.486)				
Litigation risk					5.038			
					(0.747)			
Standard deviation of	-0.109	-0.090	-0.098	-0.100	-0.105	-0.093	-0.046	-0.181*
repurchases	(-1.211)	(-0.946)	(-1.077)	(-1.100)	(-1.114)	(-1.022)	(-0.323)	(-1.839)
Repurchase frequency	-0.101	-0.139	-0.066	-0.018	-0.462	-0.107	-0.047	0.111
	(-0.317)	(-0.357)	(-0.205)	(-0.059)	(-1.330)	(-0.335)	(-0.092)	(0.305)
Institutional ownership	-0.819	-1.613**	-0.597	-0.442	-0.595	-0.806	-0.142	-1.072
	(-1.259)	(-1.970)	(-0.869)	(-0.737)	(-0.788)	(-1.230)	(-0.159)	(-1.290)
Dilution	2.209	5.085	2.129	2.121	3.042	2.231	1.496	
	(0.821)	(1.453)	(0.788)	(0.807)	(1.016)	(0.831)	(0.427)	
Industry Takeover activity						-2.122		
						(-0.309)		
EPS bonus dummy							0.335	
							(1.019)	
Options								0.469
								(0.079)
Observations	1,258	888	1,219	1,258	1,079	1,253	498	799
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Pseudo R-squared	0.212	0.206	0.207	0.199	0.221	0.211	0.231	0.172

In this table we model the decision to adopt a Rule 10b5-1 plan relative to an accelerated share repurchase. We report results from logit regressions where the dependent variable takes a value of one if a firm announced a Rule 10b5-1 as part of its repurchase program and zero otherwise. We collapse our data to the firm-year level, implying that firms with at least one Rule 10b5-1 repurchase program are considered Rule 10b5-1 firms. Independent variables are as defined in Appendix B. Year fixed effects are included in all specifications. Industry controls are based on Fama and French (1997) 12 industry classifications but are excluded in the specification with the high litigation industry indicator. Z-statistics are reported in parentheses and are based on robust standard errors clustered by firm. ***, **, * represent significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table 9: Univariate analysis - Abnormal returns around preset repurchase announcements

Panel A: Abnormal returns at announcement by type of repurchase

	Rule 10b5-1					Accelerated share repurchase					
	All	Boilerplate	Expected	Partial	Pure	All	Boilerplate	Expected	Partial	Pure	OMR
Mean	1.531	1.147	2.044	1.932	2.385	1.827	1.320	1.760	2.661	1.665	1.129
t-stat	7.276	4.256	4.237	2.891	3.879	7.771	2.910	0.960	4.780	5.469	13.046
N	842	512	124	94	112	382	143	9	61	145	4,274

Panel B: Difference in means tests

	Rule 10b5-1				ASR			
	All - OMR	Expected, Partial, & Pure - OMR	Partial & Pure - OMR	Pure - OMR	All - OMR	Expected, Partial, & Pure - OMR	Partial & Pure - OMR	Pure - OMR
Difference in means	0.403 *	0.999 ***	1.050 ***	1.256 **	0.573 *	0.825 **	0.834 **	0.538
Propensity score matching	0.222	0.88 **	1.047 **	1.436 ***	0.777 ***	1.396 ***	1.300 ***	1.302 ***

This table reports five-day cumulative abnormal returns and differences in returns by type of repurchase announcement. Panel A shows abnormal returns by type of repurchase announcement, along with statistical significance. Table 1 and Appendix A explain our categorization of announcements. Panel B examines the difference in abnormal returns between groups of preset repurchase plans and open market repurchase plans that do not include a preset component. Significance of mean abnormal returns is assessed using a *t*-test or propensity score matching, as indicated. We use the five nearest neighbors identified from the logit regressions in Table C.2 as matched control firms then calculate the average treatment effect. ***, **, * represent significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table 10: Regression analysis: Abnormal returns around preset repurchase announcements

Panel A: Abnormal returns around Rule 10b5-1 announcements

	(1)	(2)	(3)	(4)
Rule 10b5-1	0.285			
	(1.077)			
Rule 10b5-1 excluding boilerplate		0.887**		
		(2.343)		
Rule 10b5-1: pure and partial			1.018**	
			(1.998)	
Rule 10b5-1: pure only				1.834**
				(2.456)
Percent shares outstanding sought	0.032	0.050**	0.051**	0.053**
	(1.508)	(2.363)	(2.438)	(2.515)
Constant	-2.502	-2.530	-2.390	-1.771
	(-1.524)	(-1.508)	(-1.414)	(-1.034)
Controls	Yes	Yes	Yes	Yes
Observations	3,525	3,209	3,120	3,049
R-squared	0.044	0.048	0.047	0.049
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

Panel B: Abnormal returns around accelerated share repurchase announcements

	(1)	(2)	(3)	(4)
ASR	0.889***			
	(3.238)			
ASR excluding boilerplate		1.212***		
		(4.056)		
ASR: pure and partial			1.288***	
			(4.362)	
ASR: pure only				1.059***
				(3.347)
Percent shares outstanding sought	0.045**	0.046**	0.047**	0.049**
	(2.345)	(2.342)	(2.393)	(2.420)
Constant	-1.649	-1.733	-1.776	-1.942
	(-0.968)	(-1.014)	(-1.039)	(-1.131)
Controls	Yes	Yes	Yes	Yes
Observations	3,269	3,164	3,158	3,106
R-squared	0.042	0.042	0.043	0.042
Year FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes

This table reports results from OLS regressions where the dependent variable equals the five-day cumulative abnormal returns around repurchase announcements. Regressions in Panel A (Panel B) include indicator variables equal to one if the announcement contained a Rule 10b5-1 (accelerated share repurchase) component. (Panel A) or accelerated share repurchase (Panel B) announcements. We include all control variables from our base model (Table 4, Panel A, Model 1) as well as the percentage of shares outstanding sought in the repurchase program. Variables are defined in Appendix B. Table 1 and Appendix A explain our categorization of preset announcements. All specifications include standard controls and year fixed effects. Industry controls are based on Fama and French (1997) 12 industry classifications but are excluded in the specification with the high litigation industry indicator. *t*-statistics are reported in parentheses and are based on robust standard errors clustered by firm. ***, **, * represent significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table 11: Long-run abnormal returns

Panel A: Rule 10b5-1 repurchases

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Full sample	No Rule 10b5-1	Rule 10b5-1	Expected, partial, & pure	Partial & pure	Boilerplate	Expected	Partial	Pure
Alpha	0.285***	0.285***	0.547***	0.469**	0.406*	0.453**	0.094	0.199	0.487
	(4.104)	(3.826)	(3.343)	(2.373)	(1.683)	(2.091)	(0.420)	(0.633)	(1.279)
Rm - Rf	0.885***	0.881***	0.923***	0.892***	0.891***	0.981***	0.869***	0.981***	0.763***
	(44.957)	(41.804)	(19.916)	(15.965)	(13.204)	(16.231)	(14.106)	(11.372)	(7.242)
SMB	0.527***	0.515***	0.617***	0.626***	0.748***	0.553***	0.487***	0.526***	0.856***
	(15.591)	(14.239)	(7.754)	(6.512)	(6.420)	(5.288)	(4.510)	(3.446)	(4.660)
HML	-0.143***	-0.139***	-0.139*	-0.073	-0.163	-0.238**	0.012	-0.388***	-0.018
	(-4.381)	(-3.988)	(-1.809)	(-0.786)	(-1.457)	(-2.368)	(0.111)	(-2.649)	(-0.101)
MOM	-0.169***	-0.168***	-0.140***	-0.154***	-0.187***	-0.142***	-0.150***	-0.161**	-0.264***
	(-10.364)	(-9.630)	(-3.663)	(-3.351)	(-3.329)	(-2.816)	(-2.907)	(-2.219)	(-3.016)
Observations	132	132	132	131	128	127	122	121	124
R-squared	0.973	0.969	0.877	0.831	0.789	0.819	0.796	0.690	0.608
Difference in alpha			0.262	0.184	0.121	0.168	-0.190	-0.085	0.202
			(1.459)	(0.875)	(0.487)	(0.747)	(-0.832)	(-0.274)	(0.537)

Panel B: Accelerated share repurchases

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Full sample	No ASR	ASR	Expected, partial, & pure	Partial & pure	Boilerplate	Expected	Partial	Pure
Alpha	0.285***	0.289***	0.234	0.253	0.310	0.033	-0.115	-0.198	0.462
	(4.104)	(4.145)	(1.252)	(1.161)	(1.461)	(0.095)	(-1.828)	(-0.567)	(1.624)
Rm - Rf	0.885***	0.880***	0.966***	0.972***	0.990***	0.901***	1.115**	1.089***	1.008***
	(44.957)	(44.586)	(18.558)	(15.961)	(16.757)	(10.137)	(58.112)	(12.013)	(12.730)
SMB	0.527***	0.530***	0.404***	0.315***	0.336***	0.554***	0.585**	0.510***	0.338**
	(15.591)	(15.654)	(4.464)	(2.853)	(3.126)	(3.322)	(17.009)	(2.938)	(2.326)
HML	-0.143***	-0.141***	-0.172*	-0.119	0.010	-0.180	-0.399*	-0.179	0.166
	(-4.381)	(-4.294)	(-1.960)	(-1.165)	(0.094)	(-1.137)	(-12.685)	(-1.115)	(1.250)
MOM	-0.169***	-0.171***	-0.116***	-0.187***	-0.188***	-0.077	0.365**	-0.165	-0.270***
	(-10.364)	(-10.487)	(-2.680)	(-3.750)	(-3.852)	(-1.014)	(27.689)	(-1.479)	(-2.764)
Observations	132	132	125	121	115	104	6	76	103
R-squared	0.973	0.973	0.846	0.814	0.842	0.674	1.000	0.774	0.764
Difference in alpha			-0.054	-0.036	0.021	-0.254	-0.403	-0.465*	0.173
			(-0.277)	(-0.163)	(0.099)	(-0.808)	(-0.805)	(-1.675)	(0.665)

This table presents long-run abnormal returns calculated over the 12-month window beginning the month after Rule 10b5-1 (Panel A) and accelerated share repurchase (Panel B) announcements. Monthly abnormal returns (α) are estimated from Fama-French four-factor calendar time portfolio regressions: $R_t - R_{f,t} = \alpha_1 + \beta_1(R_{mkt,t} - R_{f,t}) + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 MOM_t$, where R_t is the return on an equally weighted portfolio of stocks at time t. $R_{f,t}$ and $R_{mkt,t}$ are the risk-free rate and the return on the market at time *t*. SMB_t, HML_t, and MOM_t are the monthly returns on the Fama-French size, book-to-market, and momentum factors in month *t*. The intercept term (α) of the regression represents the average monthly abnormal return. The last row represents the difference in abnormal returns in preset repurchase firms and firms that announced an open market repurchase without a preset component. *t*-statistics are in parentheses. ***, **, * represent significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table 12: Payout initiations

Panel A: Rule 10b5-1 repurchase plans

	Payout initiations					Repurchase initiations	
Year	Repurchases > 0 Dividends = 0 Rule 10b5-1 = 0	Repurchases > 0 Dividends = 0 Rule 10b5-1 > 0	Repurchases = 0 Dividends > 0	Repurchases > 0 Dividends > 0 Rule 10b5-1 = 0	Repurchases > 0 Dividends > 0 Rule 10b5-1 > 0	Repurchases > 0 Rule 10b5-1 = 0	Repurchases > 0 Rule 10b5-1 > 0
2001	64.21%	0.31%	34.22%	1.26%	0.00%	99.65%	0.35%
2002	57.21%	1.44%	40.14%	1.20%	0.00%	98.19%	1.81%
2003	38.50%	2.77%	58.45%	0.28%	0.00%	95.07%	4.93%
2004	33.08%	3.76%	60.90%	2.26%	0.00%	93.59%	6.41%
2005	37.38%	6.64%	54.84%	1.14%	0.00%	87.61%	12.39%
2006	35.84%	8.85%	53.76%	1.11%	0.44%	83.61%	16.39%
2007	50.29%	11.00%	36.54%	1.77%	0.39%	83.60%	16.40%
2008	61.26%	12.13%	25.20%	1.42%	0.00%	83.74%	16.10%
2009	45.54%	4.69%	48.83%	0.94%	0.00%	89.36%	10.64%
2010	33.23%	8.63%	56.23%	1.60%	0.32%	80.42%	19.58%
2011	33.80%	10.89%	53.63%	0.84%	0.84%	73.49%	26.51%
2012	20.89%	8.88%	67.89%	0.78%	1.57%	66.08%	33.92%
2013	18.14%	7.17%	72.15%	2.11%	0.42%	72.80%	27.20%
2014	35.96%	14.47%	48.68%	0.44%	0.44%	69.15%	30.85%

Panel B: Accelerated share repurchase plans

	Payout initiations					Repurchase initiations	
Year	Repurchases > 0 Dividends = 0 ASR = 0	Repurchases > 0 Dividends = 0 ASR > 0	Repurchases = 0 Dividends > 0	Repurchases > 0 Dividends > 0 ASR = 0	Repurchases > 0 Dividends > 0 ASR > 0	Repurchases > 0 ASR = 0	Repurchases > 0 ASR > 0
2001	64.41%	0.00%	34.33%	1.26%	0.00%	99.82%	0.18%
2002	57.87%	0.48%	40.44%	1.21%	0.00%	98.79%	1.21%
2003	39.66%	0.28%	59.77%	0.28%	0.00%	99.51%	0.49%
2004	34.54%	0.52%	62.63%	2.32%	0.00%	98.29%	1.71%
2005	40.24%	1.00%	57.57%	1.20%	0.00%	97.69%	2.31%
2006	39.43%	1.19%	57.96%	1.43%	0.00%	97.66%	2.34%
2007	55.89%	1.93%	40.26%	1.93%	0.00%	97.53%	2.47%
2008	68.98%	2.03%	27.12%	1.86%	0.00%	98.05%	1.95%
2009	48.82%	0.47%	49.76%	0.95%	0.00%	98.58%	1.42%
2010	35.47%	2.36%	60.14%	1.69%	0.34%	94.71%	5.29%
2011	38.21%	0.90%	60.00%	0.90%	0.00%	98.80%	1.20%
2012	23.67%	1.86%	72.87%	1.60%	0.00%	94.74%	5.26%
2013	20.18%	1.32%	76.32%	2.19%	0.00%	92.80%	7.20%
2014	41.82%	5.45%	51.82%	0.45%	0.45%	90.43%	9.57%

This table reports the probability of initiating a payout for each year from 2001 to 2014 for the 5,688 firms with zero payout in the pre-Rule period (1990-2000) that initiated a payout between 2001 and 2014. Payout (repurchase) initiations are defined as the first payout (repurchase) since 1990. We classify repurchases as greater than zero if we observe at least one open market repurchase announcement in the period and zero otherwise. Dividends are greater than zero for the period if at any time we observe the firm paying a dividend and zero otherwise. Rule 10b5-1 (ASR) is greater than zero if at any time in the 2001-2013 period the firm made a Rule 10b5-1 (an accelerated share repurchase) announcement.

Appendix A: Examples of preset repurchase announcements

Pure: Announcement to conduct the entire repurchase program under a preset plan.

Excerpt from March 1, 2007 Business Wire article "Clifton Savings Bancorp, Inc. Announces Fourth Stock Repurchase Plan"

> Clifton Savings Bancorp, Inc. (NASDAQ:CSBK) announced today that the Company's board of directors has approved the repurchase for up to 615,000 shares, or approximately 5% of the Company's outstanding common stock held by persons other than Clifton MHC. **These repurchases will be conducted solely through a Rule 10b5-1 repurchase plan with Keefe, Bruyette & Woods, Inc., based upon parameters of the Rule 10b5-1 repurchase plan.** Repurchased shares will be held in treasury. The Rule 10b5-1 repurchase plan allows the Company to repurchase its shares during periods when it would normally not be active in the market due to its internal trading blackout period.

Partial: Announcements that definitely contain a preset component.

Excerpt from February 25, 2010 Canada Stockwatch article "THI Tim Hortons to buy back $200-million worth of shares"

> Tim Hortons Inc.'s board has approved a new 12-month, $200-million share repurchase program to commence in March, 2010, subject to receipt of final regulatory approval. The company's common shares will be purchased under the program **through a combination of a 10b5-1 automatic trading plan as well as at management's discretion** in compliance with regulatory requirements, and given market, cost and other considerations.

Expected: Announcements that "expect to/intend to" have a preset component.

Excerpt from March 2, 2012 US Fed News article "Lattice Semiconductor files current report"

> Lattice Semiconductor Corporation (the "Company") issued a press release announcing that its Board of Directors has authorized a share repurchase program of up to $20.0 million of the Company's common stock over the next 12 months**. In connection with the new stock repurchase program, the Company intends to enter into a 10b5-1 plan,** which will allow for repurchases of up to $20.0 million. How much common stock, if any, will be repurchased will depend on market conditions, including the price of the common stock.

Boilerplate: Announcements that "may" have a preset component.

Excerpt from October 1, 2012 Theflyonthewall.com article "TRW Automotive announces $1B share repurchase program"

> TRW Automotive announced that its board has authorized a $1B share repurchase program. The repurchase program, which will commence in the fourth quarter of this year, is expected to be

executed over two years. In implementing the program**, the company may utilize a variety of methods, which may include negotiated block transactions, accelerated share repurchase transactions or open market purchases, some of which may be effected through Rule 10b5-1 plans, or by any combination of the foregoing.**

Preset repurchase mentions in other announcements

Excerpt from August 1, 2005 Business Wire article "Post Properties Announces Second Quarter 2005 Earnings"

> From April 1, 2005 through August 1, 2005, **the Company repurchased 412,600 shares of its common stock totaling approximately $13.6 million under 10b5-1 stock purchase plans**, the most recent of which will expire on August 31, 2005. These shares were repurchased at an average price of $32.95 per share. Year-to-date through August 1, 2005, **the Company has repurchased 698,400 shares of its common stock totaling approximately $22.6 million under 10b5-1 stock purchase plans at an average price of $32.42 per share**.

Appendix B: Variable definitions

Variable name	Description
8-K reporting frequency	The total number of 8-Ks filed by the company in the 6 month period following the repurchase announcement.
Blackout window	The minimum number of days over the past 12 quarters during which the firm was likely to observe a blackout window, calculated as the sum of the days elapsed between each quarter end and the release of earnings for that quarter.
Book-to-market	Total common equity over market capitalization.
Cash	Cash and short-term securities scaled by assets.
Cash flow	Operating income before depreciation scaled by assets.
Dilution	The difference in the number of common shares used to calculate diluted earnings per share (diluted shares) and the number of common shares outstanding used to calculate basic earnings per share (basic shares), divided by the number of basic shares. Dilution is winsorized at the 1st and 99th percentile.
Dividend payer	An indicator variable equal to 1 if total dividends if the firm paid a dividend during the prior fiscal year.
EPS bonus dummy	From Cheng, Harford and Zhang (2015): An indicator variable equal to one if the CEO's bonus is tied to earnings per share. Data span through 2009.
Financial crisis	An indicator variable equal to 1 for announcements made during 2008 or 2009.
Financial sophistication	An indicator dummy variable equal to 1 if the firm reports a non–missing value for gain/loss on ineffective hedges (HEDGEGL) found in Compustat and zero otherwise.
High litigation industry	An indicator variable equal to 1 if the firm's four digit SIC industry has a high incidence of past litigation (categorized by Francis et al. (1994) as SIC codes 2833–2836 and 8731–8734 (biotechnology); 3570–3577 and 7370–7374 (computers); 3600–3674 (electronics) and 5200–5961 (retailing)).
Industry takeover activity	The percentage of firms in the same Fama-French 49 industry that announced a merger or acquisition during the fiscal year.
Institutional ownership	Shares held by institutions (from Thomson Reuters 13F filings database) as a percentage of shares outstanding, measured at the end of the calendar quarter prior to the announcement.
Leverage	The sum of long-term debt and debt in current liabilities scaled by total assets.
Litigation risk	Using the model to predict litigation risk from Kim and Skinner (2012) we create a probability of facing a class action lawsuit for each firm from the predicted values of the logit model found in Table C.1 of Appendix C.
Ln(illiquidity)	The natural log of the Amihud (2002) measure of illiquidity: the ratio of the daily absolute return to the dollar trading volume on that day. We average daily illiquidity for each firm over the period starting 255 trading days prior to the repurchase announcement and ending 46 trading days prior to the announcement.
Ln(Market Cap)	The natural log of the firm's market capitalization.
Options	The sum of all unexercised exercisable options and all unexercised unexercisable options, scaled by shares outstanding.
Percent shares outstanding sought	The percentage of shares outstanding sought in the share repurchase.
Prior stock performance	The cumulative abnormal return starting 46 trading days prior to the announcement and ending 6 days prior to the announcement.
Repurchase frequency	The portion of the prior 12 quarters during which the firm repurchased any stock.

Repurchase timing	The percentage difference in repurchase volume-weighted stock price and volume-weighted stock price. The repurchase volume-weighted price is the sum of quarterly shares repurchased times the average quarterly repurchase price per share, divided by the total number of shares repurchased. Volume-weighted price is the trading volume weighted average daily closing price over the prior fiscal year. Positive values are associated with poor repurchase timing and negative values with good timing.
Standard deviation of cash flow	The standard deviation of quarterly operating income before depreciation scaled by assets calculated over the 12 quarters preceding the repurchase announcement.
Standard deviation of repurchases	The standard deviation of quarterly repurchases over the previous 12 quarters. Repurchases are calculated as the number of shares repurchase times the average price paid per share.
Standard deviation of returns	The standard deviation of daily stock returns over the period from 255 to 46 trading days prior to the repurchase announcement. We require a minimum of 100 trading days.
Trend	A count variable equal to 1 for observations in 2004, 2 for observations in 2005, etc.

Appendix C: Litigation risk and propensity score matching models

Table C.1: Model for litigation risk

High litigation industry$_t$	0.551***
	(9.446)
Ln(Assets)$_{t-1}$	0.225***
	(14.185)
Sales growth $_{t-1}$	0.536***
	(9.077)
Return $_{t-1}$	0.040
	(0.969)
Return skewness $_{t-1}$	-0.186***
	(-5.429)
Standard deviation of returns $_{t-1}$	7.810***
	(4.989)
Turnover $_{t-1}$	0.154***
	(18.689)
Constant	-6.309***
	(-44.177)
Observations	74,913
Pseudo R2	0.0748

This table reports results from a logit regression predicting litigation risk for all Compustat firms with non-missing data for the period 1996-2014. The dependent variable is set equal to one if the firm faced a class action lawsuit according to the filings listed on Stanford Law School Securities Class Action Clearinghouse (http://securities.stanford.edu) during the year and zero otherwise. Following Kim and Skinner (2012) we exclude fillings related to IPOs, hedge funds, mutual funds, and analysts. High litigation industry and standard deviation of returns are as defined in Appendix B. Ln (assets) is the natural log of assets at the end of year *t* - 1. Sales growth is year *t* -1 sales minus year *t* -2 sales scaled by total assets at the beginning of year *t* - 1. Return is the market adjusted value-weighted 12-month stock return for the year *t* - 1. Return skewness is the skewness of the firm's 12-month return for year *t* -1. Turnover is trading volume accumulated over the 12-month period ending with the *t* -1 fiscal year-end before lawsuit scaled by beginning of year *t* – 1 shares outstanding. All return measures and turnover require at least 200 trading days. *t*-statistics are reported in parentheses and are based on robust standard errors. ***, **, * represent significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table C.2 Logit regressions for propensity score matching

Panel A: Completion rate propensity score matching

	(1)	(2)	(3)	(4)
	All Rule 10b5-1	Expected, Partial, & Pure	Partial & Pure	Pure
Percent shares outstanding sought	-0.015**	-0.028**	-0.020	-0.107***
	(-2.190)	(-2.429)	(-1.379)	(-3.522)
Cash	1.288***	1.490***	1.700***	2.846***
	(4.597)	(3.757)	(3.327)	(3.968)
Cash flow	3.867**	-0.059	2.577	1.631
	(2.205)	(-0.024)	(0.790)	(0.365)
Standard deviation of cash flow	-12.439***	-7.396	-9.698	-6.778
	(-2.917)	(-1.280)	(-1.243)	(-0.656)
Leverage	-0.175	-0.545	-0.995	0.129
	(-0.631)	(-1.203)	(-1.603)	(0.158)
Dividend payer	-0.428***	-0.137	-0.289	-0.088
	(-4.255)	(-0.898)	(-1.468)	(-0.319)
Book-to-market	0.656***	0.437**	0.488*	1.005***
	(4.405)	(2.019)	(1.819)	(2.795)
Prior stock performance	0.198	0.255	0.027	-0.270
	(0.635)	(0.567)	(0.048)	(-0.353)
Standard deviation of returns	0.787	-2.817	-4.513	8.069
	(0.137)	(-0.347)	(-0.437)	(0.592)
Ln(illiquidity)	-0.092*	-0.143**	-0.072	-0.056
	(-1.813)	(-1.992)	(-0.820)	(-0.463)
Financial sophistication	0.067	0.010	0.079	0.110
	(0.668)	(0.066)	(0.389)	(0.375)
Ln(Market Cap)	-0.051	-0.276**	-0.363**	-0.517**
	(-0.685)	(-2.501)	(-2.536)	(-2.481)
Blackout window (days)	0.002***	0.002***	0.002***	0.002
	(4.413)	(4.048)	(3.356)	(1.521)
Standard deviation of repurchases	0.032	0.055	-0.062	0.029
	(0.725)	(0.875)	(-0.693)	(0.248)
Repurchase frequency	-0.229*	0.017	0.113	0.125
	(-1.665)	(0.081)	(0.399)	(0.302)
Institutional ownership	-0.162	-0.362	0.548	1.288**
	(-0.708)	(-1.091)	(1.262)	(2.111)
Dilution	1.387	1.505	0.234	0.937
	(1.351)	(1.010)	(0.115)	(0.349)
Constant	-4.915***	-5.792***	-5.729***	-17.510
	(-5.702)	(-4.859)	(-3.531)	(-0.037)
Observations	5,327	4,866	4,742	4,654
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes
Pseudo R-squared	0.0732	0.0715	0.0927	0.148

Panel B: Five-day cumulative abnormal return propensity score matching

	(1)	(2)	(3)	(4)
	All Rule 10b5-1	Expected, Partial, & Pure	Partial & Pure	Pure
Percent shares outstanding sought	-0.008	-0.029**	-0.029*	-0.100***
	(-1.025)	(-2.133)	(-1.650)	(-2.948)
Cash	1.256***	1.330***	1.404**	2.602***
	(3.690)	(2.836)	(2.321)	(3.170)
Cash flow	2.818	-0.149	1.998	2.335
	(1.341)	(-0.051)	(0.535)	(0.479)
Standard deviation of cash flow	-12.505**	-6.066	-8.330	-4.493
	(-2.374)	(-0.899)	(-0.930)	(-0.395)
Leverage	-0.563*	-0.677	-1.087	0.344
	(-1.662)	(-1.288)	(-1.532)	(0.387)
Dividend payer	-0.324***	-0.102	-0.309	0.046
	(-2.679)	(-0.575)	(-1.364)	(0.154)
Book-to-market	0.726***	0.497**	0.616**	1.061***
	(4.102)	(1.973)	(2.009)	(2.633)
Prior stock performance	0.159	0.300	0.037	-0.152
	(0.438)	(0.591)	(0.059)	(-0.179)
Standard deviation of returns	0.397	-1.301	0.749	5.028
	(0.058)	(-0.139)	(0.064)	(0.327)
Ln(illiquidity)	-0.119**	-0.216**	-0.141	-0.071
	(-1.963)	(-2.535)	(-1.373)	(-0.532)
Financial sophistication	0.101	0.053	0.096	-0.081
	(0.842)	(0.287)	(0.404)	(-0.233)
Ln(Market Cap)	-0.055	-0.378***	-0.462***	-0.488**
	(-0.622)	(-2.885)	(-2.767)	(-2.161)
Blackout window (days)	0.002***	0.002***	0.002**	0.001
	(4.116)	(3.102)	(2.475)	(1.173)
Standard deviation of repurchases	0.057	0.165**	0.043	0.085
	(1.066)	(2.413)	(0.427)	(0.650)
Repurchase frequency	-0.135	-0.073	-0.200	-0.001
	(-0.813)	(-0.290)	(-0.600)	(-0.002)
Institutional ownership	-0.118	-0.191	0.884*	1.265*
	(-0.432)	(-0.497)	(1.773)	(1.871)
Dilution	0.515	0.606	0.224	1.486
	(0.367)	(0.324)	(0.093)	(0.511)
Constant	-5.190***	-6.127***	-5.929***	-17.755
	(-5.429)	(-4.643)	(-3.419)	(-0.030)
Observations	3,506	3,190	3,101	3,038
Year fixed effects	Yes	Yes	Yes	Yes
Industry fixed effects	No	No	No	No
Pseudo R-squared	0.0814	0.0754	0.100	0.133

This table reports results from logit regressions where the dependent variable takes a value of zero for open market repurchases in all specifications and a value of one for the specified group of Rule 10b5-1 announcers. Panel A includes the full sample of repurchase announcements. Panel B corresponds to the subsample of repurchase not announced contemporaneously with earnings. Independent variables are as defined in Appendix B. Year fixed effects are included in all specifications. Industry controls are based on Fama and French (1997) 12 industry classifications and are included in all specifications. *Z*-statistics are reported in parentheses and are based on robust standard errors clustered by firm. ***, **, * represent significance at the 0.01, 0.05, and 0.10 levels, respectively.

Appendix D: Accelerated share repurchases

Table D.1: Accelerated share repurchases plan details

Panel A: Preset repurchase announcements by level of commitment

	Pure	Partial	Expected	Boilerplate	Total
ASR announcements	285	217	46	284	832
	34.25%	26.08%	5.53%	34.13%	100.00%

Panel B: Accelerated share repurchase plan details

	N	Mean	10th percentile	Median	90th percentile	Standard Deviation
% shares outstanding	361	6.22	1.24	3.87	12.40	8.51
$ millions	442	604.82	50.00	250.00	1200.00	1536.04
% total repurchase	416	91.11	50.00	100.00	100.00	21.11
Time to commencement (in days)	20	7.70	0	3	19	12.96
Duration of plan (in days)	79	173.16	30	143	356	156.26

Panel A divides accelerated share repurchase (ASR) announcements by level of commitment. "Pure" ("Partial") preset plans represent repurchase programs that are executed fully (in part) through an ASR. We refer to preset plans as "expected" if the firm indicates that it expects to or intends to adopt an ASR plan to execute its announced repurchase. "Boilerplate" refers to announcements that shares may be repurchased through an ASR or through other means. For further details of our categorization, please see the Appendix A. Panel B present summary statistics on plan details, which are only available for the subset of announcements that voluntarily disclose such details. We report the size of the preset repurchase as a percentage of shares outstanding, in millions of dollars, or as a percentage of the total repurchase plan. Time to commencement is the number of days between the repurchase announcement and the commencement of the preset plan. Duration of the plan is the number of days during which the Rule 10b5-1 trading plan is effective.

Table D.2: Logit model: ASRs versus OMRs

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Cash	0.101	0.129	-1.568*	0.161	0.119	0.035	0.092	-0.267
	(0.155)	(0.198)	(-1.696)	(0.202)	(0.181)	(0.056)	(0.141)	(-0.379)
Cash flow	-5.412*	-5.622*	-3.548	-2.659	-4.769	-5.582*	-6.350*	-4.237
	(-1.766)	(-1.823)	(-0.837)	(-0.759)	(-1.571)	(-1.883)	(-1.885)	(-1.063)
Standard deviation of cash flow	4.704	4.671	21.136**	5.586	4.622	2.751	-2.347	-4.483
	(0.634)	(0.632)	(2.059)	(0.728)	(0.605)	(0.406)	(-0.337)	(-0.460)
Leverage	-0.336	-0.329	-0.936	-0.162	-0.450	-0.037	-0.337	-0.632
	(-0.754)	(-0.735)	(-1.398)	(-0.318)	(-0.986)	(-0.088)	(-0.684)	(-1.207)
Dividend payer	-0.420**	-0.412**	-0.216	-0.328	-0.427**	-0.400**	-0.327	-0.419*
	(-2.042)	(-2.000)	(-0.766)	(-1.363)	(-2.062)	(-2.136)	(-1.550)	(-1.829)
Book-to-market	0.074	0.096	0.032	0.087	0.035	0.004	-0.184	-0.191
	(0.209)	(0.273)	(0.064)	(0.227)	(0.096)	(0.012)	(-0.451)	(-0.448)
Prior stock performance	0.447	0.399	0.183	0.290	0.389	0.516	0.227	0.754
	(0.811)	(0.725)	(0.216)	(0.452)	(0.704)	(0.958)	(0.391)	(1.182)
Standard deviation of returns	-24.700**	-25.478**	-48.290**	-17.156	-28.161**	-31.921***	-18.057	-35.455***
	(-2.105)	(-2.141)	(-2.465)	(-1.332)	(-2.376)	(-2.705)	(-1.497)	(-2.663)
Ln(illiquidity)	-0.609***	-0.615***	-0.756***	-0.532***	-0.561***	-0.595***	-0.643***	-0.561***
	(-5.043)	(-5.037)	(-3.705)	(-3.620)	(-4.534)	(-5.054)	(-4.371)	(-2.910)
Financial sophistication	0.051	0.036	0.025	0.073	0.015	0.038	-0.041	-0.018
	(0.324)	(0.227)	(0.108)	(0.410)	(0.098)	(0.248)	(-0.237)	(-0.102)
Ln(Market Cap)	-0.333**	-0.337**	-0.380	-0.285	-0.325**	-0.325**	-0.423**	-0.366*
	(-2.142)	(-2.147)	(-1.553)	(-1.513)	(-2.003)	(-2.156)	(-2.394)	(-1.678)
Blackout window (days)	0.000	0.000	0.001	0.001	0.000	0.001	0.000	0.000
	(0.325)	(0.381)	(0.843)	(1.057)	(0.109)	(0.718)	(0.138)	(0.132)
Standard deviation of repurchases	0.217***	0.196***	0.166*	0.260***	0.204***	0.211***	0.190***	0.275***
	(3.247)	(2.907)	(1.650)	(3.593)	(3.033)	(3.252)	(2.695)	(3.909)
Repurchase frequency	-0.105	-0.107	0.141	-0.245	-0.102	-0.237	0.124	-0.178
	(-0.430)	(-0.438)	(0.377)	(-0.825)	(-0.413)	(-1.002)	(0.467)	(-0.649)
Institutional ownership	0.091	0.093	-0.611	0.128	0.039	0.148	-0.018	0.302
	(0.186)	(0.189)	(-0.870)	(0.217)	(0.079)	(0.314)	(-0.034)	(0.531)
Dilution	-1.747	-1.572	-0.802	-4.949*	-1.755	-1.512	-2.371	
	(-0.851)	(-0.770)	(-0.238)	(-1.647)	(-0.851)	(-0.760)	(-1.068)	
Industry Takeover activity		3.072						
		(0.729)						
EPS bonus dummy			0.045					
			(0.180)					
Repurchase timing				1.673*				
				(1.949)				
8-K reporting frequency					0.067***			
					(3.732)			
High litigation industry						-0.094		
						(-0.487)		
Litigation risk							-0.659	
							(-0.115)	
Options								-5.284
								(-1.164)
Observations	3,968	3,940	2,286	2,563	3,880	3,968	3,120	2,398
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Pseudo R-squared	0.153	0.152	0.206	0.141	0.157	0.137	0.137	0.113

In this table we model the decision to adopt an accelerated share repurchase (ASR) relative to an open market repurchase without an accelerated component. We use logit regressions where the dependent variable takes a value of one if a firm announced an accelerated plan as part of its repurchase program and zero otherwise. We collapse our data to the firm-year level, implying that firms with at least one accelerated share repurchase program are considered ASR firms. Independent variables are as defined in Appendix B. Year fixed effects are included in all specifications. Industry controls are based on Fama and French (1997) 12 industry classifications but are excluded in the specification with the high litigation industry indicator. Z-statistics are reported in parentheses and are based on robust standard errors clustered by firm. ***, **, * represent significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table D.3: Duration to first ASR adoption

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Cash	0.059	0.058	-0.564	0.151	0.107	0.085	0.330	-0.046
	(0.108)	(0.107)	(-0.794)	(0.223)	(0.193)	(0.158)	(0.575)	(-0.068)
Cash flow	-4.551	-4.322	-3.517	-2.316	-3.793	-4.469	-4.322	-3.754
	(-1.611)	(-1.520)	(-0.943)	(-0.729)	(-1.414)	(-1.590)	(-1.425)	(-0.965)
Standard deviation of cash flow	5.128	4.755	14.117***	5.846	4.173	5.377	1.127	2.059
	(0.919)	(0.838)	(2.924)	(0.874)	(0.680)	(0.967)	(0.174)	(0.241)
Leverage	-0.686*	-0.706*	-0.973	-0.262	-0.872**	-0.699*	-0.799*	-0.299
	(-1.725)	(-1.764)	(-1.519)	(-0.550)	(-2.085)	(-1.757)	(-1.678)	(-0.607)
Dividend payer	-0.221	-0.217	0.093	-0.271	-0.216	-0.224	-0.145	-0.184
	(-1.357)	(-1.332)	(0.384)	(-1.371)	(-1.310)	(-1.380)	(-0.854)	(-0.988)
Book-to-market	-0.285	-0.249	-0.417	-0.542	-0.375	-0.280	-0.238	-0.619*
	(-0.966)	(-0.855)	(-0.964)	(-1.526)	(-1.267)	(-0.955)	(-0.728)	(-1.764)
Prior stock performance	0.117	0.033	0.370	0.561	0.090	0.104	-0.071	0.445
	(0.198)	(0.056)	(0.518)	(0.805)	(0.150)	(0.176)	(-0.115)	(0.649)
Standard deviation of returns	-13.448	-12.492	-92.344***	-16.279	-18.024	-13.152	-8.030	-31.486**
	(-1.201)	(-1.113)	(-5.231)	(-1.246)	(-1.516)	(-1.178)	(-0.680)	(-2.286)
Ln(illiquidity)	-0.511***	-0.506***	-0.565***	-0.430***	-0.454***	-0.515***	-0.596***	-0.552***
	(-4.301)	(-4.224)	(-3.507)	(-3.015)	(-3.750)	(-4.286)	(-3.971)	(-3.260)
Financial sophistication	-0.013	-0.015	-0.282	-0.115	-0.032	-0.013	-0.072	-0.124
	(-0.092)	(-0.102)	(-1.278)	(-0.702)	(-0.216)	(-0.091)	(-0.454)	(-0.776)
Ln(Market Cap)	-0.214	-0.205	-0.264	-0.195	-0.227	-0.213	-0.293*	-0.300
	(-1.485)	(-1.413)	(-1.390)	(-1.114)	(-1.505)	(-1.475)	(-1.783)	(-1.609)
Blackout window (days)	-0.001	-0.001	-0.001	-0.001	-0.002*	-0.001	-0.001	-0.001
	(-1.375)	(-1.402)	(-1.225)	(-1.509)	(-1.872)	(-1.403)	(-0.802)	(-1.320)
Standard deviation of repurchases	0.175**	0.156**	0.103	0.150*	0.171**	0.177**	0.169**	0.175**
	(2.390)	(2.080)	(0.893)	(1.887)	(2.375)	(2.421)	(2.237)	(2.166)
Repurchase frequency	-0.119	-0.131	-0.460	-0.711***	-0.137	-0.120	-0.047	-0.281
	(-0.566)	(-0.625)	(-1.376)	(-2.728)	(-0.639)	(-0.571)	(-0.208)	(-1.125)
Institutional ownership	0.385	0.427	-0.341	-0.103	0.325	0.364	0.287	0.185
	(0.914)	(1.004)	(-0.576)	(-0.198)	(0.750)	(0.861)	(0.659)	(0.341)
Dilution	2.718**	2.606*	5.044**	-0.510	2.367*	2.671*	2.761*	
	(1.971)	(1.856)	(2.400)	(-0.286)	(1.672)	(1.946)	(1.816)	
Industry Takeover activity		-10.324						
		(-1.562)						
EPS bonus dummy			0.045					
			(0.179)					
Repurchase timing				1.152				
				(1.262)				
8-K reporting frequency					0.097***			
					(6.051)			
High litigation industry						-0.157		
						(-0.646)		
Litigation risk							-2.468	
							(-0.433)	
Options								8.445*
								(1.957)
Observations	4,137	4,107	2,399	2,636	4,029	4,137	3,269	2,422
Pseudo r-squared	0.0809	0.0816	0.148	0.0623	0.0926	0.0811	0.0745	0.0544

In this table we model the duration to first accelerated share repurchase (ASR) adoption using a Cox proportional hazard model. The duration to adoption is measured as the number of calendar days from the end of 2003 to the first time a firm adopts an ASR plan. If the firm enters the sample after 2003 we calculate duration as the number of days from the end of the first calendar year in Compustat. Independent variables are as defined in Appendix B. We also include industry dummies based on Fama and French (1997) 12 industry classifications. We report coefficients with *Z*-statistics based on robust standard errors clustered by firm in parentheses. ***, **, * represent significance at the 0.01, 0.05, and 0.10 levels, respectively.

Table D.4: Exogenous shock to cost of financial flexibility and ASR adoption

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Trend	0.066***	0.065***	0.433***	0.022	0.081***	0.065***	0.079***	0.055*
	(2.813)	(2.757)	(3.438)	(0.758)	(3.486)	(2.869)	(3.065)	(1.895)
Financial crisis	-0.766***	-0.776***	-1.471***	-0.917***	-0.720***	-0.741***	-0.779***	-0.901***
	(-4.284)	(-4.312)	(-4.803)	(-4.391)	(-3.956)	(-4.189)	(-4.096)	(-4.288)
Industry takeover activity		4.208						
		(1.011)						
EPS bonus dummy			0.053					
			(0.213)					
Repurchase timing				1.932**				
				(2.234)				
8-K reporting frequency					0.064***			
					(3.569)			
High litigation industry						-0.109		
						(-0.568)		
Litigation risk							-0.964	
							(-0.169)	
Options								-5.613
								(-1.242)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,007	3,978	2,325	2,566	3,919	4,007	3,157	2,421
Industry FE	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Pseudo R-squared	0.145	0.144	0.206	0.128	0.148	0.129	0.130	0.0986

This table reports results from logit regressions where the dependent variable takes a value of one if a firm announced an accelerated share repurchase (ASR) as part of its repurchase program and zero otherwise. We collapse our data to the firm-year level, implying that firms with at least one ASR are considered ASR firms. Trend is a count variable equal to 1 for observations in 2004, 2 for observations in 2005, etc. Financial crisis is an indicator variable equal to 1 for announcements made during 2008 or 2009. Other independent variables are defined in Appendix B. All specifications include standard controls and year fixed effects. Industry controls are based on Fama and French (1997) 12 industry classifications but are excluded in the specification with the high litigation industry indicator. *Z*-statistics are reported in parentheses and are based on robust standard errors clustered by firm. ***, **, * represent significance at the 0.01, 0.05, and 0.10 levels, respectively.