

The Effect of Enhanced Disclosure on Open Market Stock Repurchases

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Abstract

Publicly traded companies distribute cash to shareholders primarily in two ways--either through dividends or through anonymous repurchases of the companies' own stock on the open market. Companies must announce a repurchase authorization, but do not actually have to repurchase any stock, and until recently did not have to disclose whether or not they were in fact repurchasing any stock. Scholars and regulators noticed that companies frequently announced repurchases but then appeared not to complete them. Scholars and regulators became concerned that such announcements might be used by insiders to exploit public investors. To increase transparency and reduce opportunities for exploitive behavior, the SEC required that companies disclose their repurchase activity for the past quarter in their 10-Q and 10-K filings beginning in January 2004. This paper tracks the 365 repurchase programs announced in 2004 and finds that since the SEC disclosure requirement went into effect, companies are more likely to complete their announced repurchases and do so within a shorter time period after the repurchase announcement.

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I. Introduction

The primary organizing principle of United States Securities regulation is disclosure. As the Securities and Exchange Commission explains on its website:

The laws and rules that govern the securities industry in the United States derive from a simple and straightforward concept: all investors, whether large institutions or private individuals, should have access to certain basic facts about an investment prior to buying it, and so long as they hold it. To achieve this, the SEC requires public companies to disclose meaningful financial and other information to the public. This provides a common pool of knowledge for all investors to use to judge for themselves whether to buy, sell, or hold a particular security. Only through the steady flow of timely, comprehensive, and accurate information can people make sound investment decisions.

The result of this information flow is a far more active, efficient, and transparent capital market that facilitates the capital formation so important to our nation's economy.²

The SEC has sought, through greater disclosure, to ameliorate problems ranging from deceptive proxy solicitations³ to excessive executive compensation.⁴

The SEC recently promulgated a new disclosure rule intended to stamp out suspected abuses associated with company repurchases of their own stock. This study examines whether the new SEC disclosure rule has had the intended effect. The repurchase disclosure regulation is a specific test case for the broader question of whether retroactive disclosure requirements can change the behavior of market participants.

Stock repurchases, like dividends, are used by publicly traded corporations to distribute cash to shareholders. Most stock repurchases are Open Market Repurchases (OMRs), repurchases in which a corporation uses a broker to purchase its own stock in the public market over an extended period

² <http://www.sec.gov/about/whatwedo.shtml#intro>

³ See SEC Proxy Rules available at <http://www.sec.gov/about/forms/reg14a.pdf> and Schedule 14A available at <http://www.sec.gov/about/forms/sched14a.pdf>.

⁴ SEC Release No. 34-8732A, "Executive Compensation and Related Person Disclosure (conforming amendments)," August 29, 2006, available at <http://www.sec.gov/rules/final/2006/33-8732a.pdf>.

of time.⁵ OMRs may have advantages over dividends in terms of tax treatment and distribution costs. OMRs may also be preferable because they can supply stock for employee incentive compensation plans and increase liquidity.⁶ However, OMRs also have features that may facilitate self-dealing by managers at the expense of investors: first, OMRs are less transparent than dividends; second, OMRs, unlike dividends, can redistribute value between shareholders who sell and shareholders who hold the stock.

Legal and financial scholars argue that managers opportunistically enrich themselves through OMRs. Repurchase announcements are usually followed by a short-term stock price spike, presumably because repurchases signal managers' belief that the company is undervalued. According to the false signaling hypothesis, managers announce a repurchase—which they secretly do not intend to complete—in order to exploit this short-term price spike.

According to the bargain repurchases hypothesis, managers seeking to repurchase stock when it is undervalued will sometimes announce repurchases that they do not intend to complete for the same reason that good poker players sometimes bluff—to make themselves harder to read. If the market cannot readily tell which repurchase announcements will be followed by actual repurchases, then the market must discount the signal from repurchase announcements, leaving the stock somewhat undervalued when the company actually wishes to repurchase stock.

In response to concerns about potential managerial opportunism, the SEC promulgated a new repurchase disclosure requirement that took effect on December 17, 2003.⁷ Under the new rule, companies' quarterly statements must disclose the number of shares purchased each month, the

⁵ See Gustavo Grullon & David L. Ikenberry, What Do We Know About Stock Repurchases?, 13 J. Applied Corp. Fin. 31, 33-34 (200) (reporting that OMRs accounted for over 90% of announcements and over 90% of the value of actual repurchases between 1980 and 1999).

⁶ See, e.g., Jesse M. Fried, Informed Trading and False Signaling with Open Market Repurchases, 93 Cal. L. Rev. 1323, 1336-40 (2005);

⁷ See Purchases of Certain Equity Securities by Issuer and Others, Exchange Act Release No. 33-8335, 68 Fed. Rec. 64,952 (Nov. 17, 2003) available at <http://www.sec.gov/rules/final/33-8335.htm>

average price per share, and the maximum number (or approximate dollar value) of shares that may yet be purchased under the program.⁸ A recent paper by Jesse Fried argues that the SEC's disclosure requirement still leaves room for managerial opportunism because the disclosure is limited and ex-post.⁹ Fried argues for a more thorough, pre-trade disclosure rule.¹⁰

To examine the new SEC disclosure requirement's effectiveness in increasing the transparency and reliability of repurchase announcements, this study tracks 365 repurchase programs announced in 2004 and compares the completion rates during the 20 months after the announcement to completion rates reported in two previous studies of repurchase programs announced before the disclosure rule. This study improves on the methodology of previous studies: this study uses actual repurchase data from mandatory disclosures, whereas previous studies either estimated repurchases (and were therefore potentially inaccurate) or used repurchase data voluntarily supplied by companies (and therefore suffered from selection bias). This methodological improvement enhances the accuracy of the data but complicates cross-study comparisons.

This study's key finding is that after the disclosure rule went into effect, repurchase completion rates substantially and significantly increased. Whereas before the disclosure rule, repurchases tracked for 20 months after the announcement were on average 62.6% complete, after the disclosure rule went into effect, repurchases were on average 80.3% complete.

This dramatic difference in repurchase completion suggests that the new disclosure requirement had the desired effect—repurchase announcements today are more transparent and reliable than they were before the SEC disclosure requirement. This paper also considers and rejects alternate interpretations of these results.

⁸ Id.

⁹ Jesse M. Fried, *Informed Trading and False Signaling with Open Market Repurchases*, 93 Cal. L. Rev. 1323, 1341, 1384-85

¹⁰ Id. at 1374-85

II. Background on Repurchases

A. *Growing Use of Repurchases as Substitutes for Dividends*

Stock repurchases were relatively rare until the 1980s, but have since grown dramatically and today account for roughly half of cash distributions to shareholders.¹¹ Share repurchases grew from \$6.6 billion in 1980 to almost \$200 billion in 2000.¹² This increase in stock repurchases over the last three decades was accompanied by a corresponding decline in dividend payouts as a share of annual earnings, while aggregate payout levels were constant at 26-28% of annual earnings.¹³

The profile of corporations that pay dividends—larger, more profitable firms with more constant return on assets—is the same as the profile of firms that distribute cash through repurchases.¹⁴ They are, in fact, generally the same firms—between 1980 and 2000, 87.9% of repurchase expenditures came from firms that also paid dividends.¹⁵ In other words, corporations that distributed cash to shareholders merely shifted their mode of distribution from predominantly dividends to half dividends, half repurchases.

¹¹ See William W. Bratton, The New Dividend Puzzle, 93 Geo. L.J. 845, 851, note 23 (2005) citing Gustavo Grullon & Roni Michaely, Dividends, Share Repurchases, and the Substitution Hypothesis, 57 J. Fin. 1649, 1649 (2002)

¹² Jesse M. Fried, Informed Trading and False Signaling with Open Market Repurchases, 93 Cal. L. Rev. 1323, 1341, 1326, note 3 citing Gustavo Grullon & Roni Michaely, Dividends, Share Repurchases, and the Substitution Hypothesis, 57 J. Fin. 1649, 1649 (2002)

¹³ See William W. Bratton, The New Dividend Puzzle, 93 Geo. L.J. 845, 851, notes 20-23 (2005) citing Gustavo Grullon & Roni Michaely, Dividends, Share Repurchases, and the Substitution Hypothesis, 57 J. Fin. 1649, 1649, 1656 (2002) and Murali Jagannathan et al., Financial Flexibility and the Choice Between Dividends and Stock Repurchases, 57 J. Fin. Econ. 355, 356 (2000).

¹⁴ See William W. Bratton, The New Dividend Puzzle, 93 Geo. L.J. 845, 852, notes 26-28 (2005) citing Eugene Fama & Kenneth R. French, Disappearing Dividends: Changing Firm Characteristics or Lower Propensity to Pay?, 60 J. Fin. Econ. 3, 6 (2001) and Gustavo Grullon & Roni Michaely, Dividends, Share Repurchases, and the Substitution Hypothesis, 57 J. Fin. 1649, 1658 (2002).

¹⁵ William W. Bratton, The New Dividend Puzzle, 93 Geo. L.J. 845, 852, notes 25 (2005) citing Gustavo Grullon & Roni Michaely, Dividends, Share Repurchases, and the Substitution Hypothesis, 57 J. Fin. 1649, 1659 (2002).

Furthermore, the trend toward repurchases will likely accelerate. A recent survey of CFOs suggests that if firms that do not currently distribute cash to shareholders begin to distribute cash, two-thirds will do so exclusively through repurchases.¹⁶

Scholars and commentators have sought to explain the shift to repurchases in terms of either benefits to investors or opportunistic behavior by managers that harms investors. As the amount of cash channeled through repurchases increases, so does the potential harm to investors and the need for regulatory scrutiny.

B. Possible Benefits of Repurchases to Shareholders/Investors

The most common form of repurchases,¹⁷ and the focus of this paper, is Open Market Repurchases (OMRs)—in which a corporation uses a broker to purchase its own stock in the public market over an extended period of time. A corporation conducting an OMR essentially has a free hand to anonymously buy as much or as little stock as it wants, when it wants, at market price.¹⁸

Commentators have described four possible benefits of OMRs: (1) tax advantages over dividends; (2) lower distribution costs than dividends; (3) supplying stock for employee incentive compensation plans; and (4) increasing liquidity. Of these four, the most significant driver of repurchases is probably supplying stock for employee incentive compensation plans.

¹⁶ See William W. Bratton, The New Dividend Puzzle, 93 Geo. L.J. 845, 852, note 29 (2005) citing Alon Brav et al., Payout Policy in the 21st Century 11-12 (Nat'l Bureau of Econ Research, Working Paper No. 9657, 2003) (forthcoming in J. Fin. Econ).

¹⁷ See Gustavo Grullon & David L. Ikenberry, What Do We Know About Stock Repurchases?, 13 J. Applied Corp. Fin. 31, 33-34 (200) (reporting that OMRs accounted for over 90% of announcements and over 90% of the value of actual repurchases between 1980 and 1999).

¹⁸ Regulation of OMRs is discussed below in part II.c.

1. Tax Advantages of OMRs over Dividends

Historically, repurchases offered significant tax advantages over dividends, mainly because long-term capital gains were taxed at advantageous rates.¹⁹ However, the 2003 dividend tax cut under The Jobs and Growth Tax Relief Reconciliation Act of 2003 (“JGTRRA”)²⁰ equalized dividend and capital gains rates at 15%, thereby eroding repurchases’ tax advantage.²¹ Repurchases are still somewhat advantageous because shareholders who sell are taxed only on gains above their basis in the stock, whereas dividends are fully taxed.²² Repurchases also better facilitate tax planning, because shareholders can decide whether (and when) to sell depending on their particular circumstances, whereas dividends accrue to all shareholders regardless of their tax-planning preferences.²³

Empirical evidence suggests that tax considerations play a fairly minor role in corporations’ payout-policy decisions, possibly because many large shareholders are tax exempt.²⁴

2. Distribution Costs: OMRs vs. Dividends

OMRs may be more efficient than dividends for distributing small non-recurring cash flows to investors.²⁵ However, for larger and/or recurring cash flows, dividends are generally more efficient.²⁶ Given the substantial size of repurchases,²⁶ and their parity with dividends, it seems unlikely that firms use repurchases primarily to distribute small non-recurring cash flows.

¹⁹ See Jesse M. Fried, Informed Trading and False Signaling with Open Market Repurchases, 93 Cal. L. Rev. 1323, 1336-38. See also William W. Bratton, The New Dividend Puzzle, 93 Geo. L.J. 845, 852-62 (2005).

²⁰ Pub. L. No. 108-27, 117 Stat. 752 (2003).

²¹ See Jesse M. Fried, Informed Trading and False Signaling with Open Market Repurchases, 93 Cal. L. Rev. 1323, 1336-38. See also William W. Bratton, The New Dividend Puzzle, 93 Geo. L.J. 845, 852-62 (2005).

²² See Jesse M. Fried, Informed Trading and False Signaling with Open Market Repurchases, 93 Cal. L. Rev. 1323, 1337.

²³ Id.

²⁴ See William W. Bratton, The New Dividend Puzzle, 93 Geo. L.J. 845, 852-62 (2005). See also Jesse M. Fried, Informed Trading and False Signaling with Open Market Repurchases, 93 Cal. L. Rev. 1323, 1337-38.

²⁵ See Jesse M. Fried, Informed Trading and False Signaling with Open Market Repurchases, 93 Cal. L. Rev. 1323, 1338.

²⁶ Id.

3. OMRs and Employee Stock Option Plans

Unlike dividends, repurchases provide shares for employee incentive compensation programs. A substantial portion of executive compensation comes in the form of stock options,²⁷ and many firms also use stock options to compensate lower ranking employees. Such compensation is thought to reduce agency costs by tying compensation to the performance of the firm, measured by the share price at the time the options vest.

There is strong empirical support for a link between stock repurchases and exercisable employee options.²⁸ Firms are more likely to announce repurchases when executives have large numbers of options outstanding and when employees have large numbers of options currently exercisable.²⁹ The size of repurchases correlates with total employee options currently exercisable, but is not related to executive options.³⁰ This suggests that firms calibrate the size and timing of their repurchases to serve the needs of their incentive compensation programs.³¹

Instead of repurchasing existing shares, boards could issue new shares.³² However, issuing new shares would dilute earnings per share, lower the value of each share, and therefore lower the value of stock options held by employees and executives.³³ Furthermore, some corporate charters may require the board to obtain shareholder approval before issuing new shares.³⁴ Such approval may be desirable for corporate governance reasons, but would entail additional delay and transaction costs.

²⁷ See Jesse M. Fried, Informed Trading and False Signaling with Open Market Repurchases, 93 Cal. L. Rev. 1323, 1339, note 41, citing Lucian Bebchuk & Jesse Fried, Pay without performance: The Unfulfilled Promise of Executive Compensation 137 (2004).

²⁸ See Kathleen M. Kahle, When a Buyback isn't a Buyback: Open Market Repurchases and Employee Options, 63 Journal of Financial Economics 235 (2002).

²⁹ Id. at 238.

³⁰ Id.

³¹ Id.

³² See Jesse M. Fried, Informed Trading and False Signaling with Open Market Repurchases, 93 Cal. L. Rev. 1323, 1339.

³³ See William W. Bratton, "The New Dividend Puzzle, 93 Geo. L.J. 845, 872-876.

³⁴ See Jesse M. Fried, Informed Trading and False Signaling with Open Market Repurchases, 93 Cal. L. Rev. 1323, 1339.

4. Liquidity

Repurchases increase the volume of trading in the repurchasing company's stock. This additional liquidity may lower market-makers' inventory costs; the market-maker in turn may lower the bid-ask spread, which lowers transaction costs for investors seeking to buy or sell the stock.³⁵ There is in fact empirical evidence that repurchases lower the bid-ask spread.³⁶

C. Possible Harm to Investors: False Signaling and Bargain Repurchases

OMRs are not transparent because firms that announce repurchases do not commit themselves to buy, they merely give themselves the option to buy. Until 2004, it was difficult to ascertain the extent to which firms carried through on their repurchases, because firms were not obligated to disclose any repurchase data.³⁷ One influential study estimated that within 3 years of announcing a repurchase, 43 percent of firms repurchased fewer shares than their announced targets, 10 percent of firms bought less than 5 percent of the number of shares announced, and a significant number of firms did not repurchase any shares at all.³⁸ According to another study, 27% of announcing firms did not repurchase any shares within four years.³⁹

According to the false signaling hypothesis, firms announce repurchases that they do not intend to carry through because managers hope to exploit the price spike that typically follows a

³⁵ *Id.* at 1339-40.

³⁶ See Douglas O. Cook et al., *On Timing and Execution of Open Market Repurchases*, 17 *Rev. Fin. Stud.* 463, 485-86 (2004).

³⁷ In December of 2003, the SEC revised its disclosure rule. Under the new rule, companies' quarterly statements must disclose the number of shares purchased each month, the average price per share, and the maximum number (or approximate dollar value) of shares that may yet be purchased under the program. *Purchases of Certain Equity Securities by Issuer and Others*, Exchange Act Release No. 33-8335, 68 *Fed. Rec.* 64,952 (Nov. 17, 2003) available at <http://www.sec.gov/rules/final/33-8335.htm>

³⁸ Clifford P. Stephens and Michael S. Weisbach, *Actual Share Repurchases in Open-Market Repurchase Programs*, 53 *J. Fin.* 313, 314 (1998). The sample of this study was the 944 open market repurchase programs announced from 1981 to 1990 in *The Wall Street Journal Index*, excluding the 995 announcements made during the fourth quarter of 1987. *Id.* at 317.

³⁹ Uptal Bhattacharya and Amy Dittmar, *Costless Versus Costly Signaling: Theory and Evidence* (May 2004) (Unpublished working paper), available at <http://ssrn.com/abstract=250049>. The sample for this study was all 2,297 firms announcing open market repurchases between 1985 and 1995 as listed in the Securities Data Corporation's Mergers and Acquisitions database, excluding announcements in the last quarter of 1987.

repurchase announcement.⁴⁰ Following repurchase announcements, studies report short-term abnormal returns averaging three percent.⁴¹ Repurchase announcements generate a price spike because the market views repurchase announcements as signals that announcing firms are undervalued.⁴² Some scholars theorize that managers could exploit this price spike by announcing a repurchase when the firm is overvalued and then dumping their shares shortly after the announcement.⁴³ Although there is empirical evidence that could be interpreted to support this hypothesis, it seems unlikely, for reasons that will be discussed below.

Evidence consistent with the false signaling hypothesis comes from a study of OMR announcements between 1993 and 1998 which found that managers who announced that they were repurchasing stock because the stock was under-priced, and who therefore might have been attempting to boost the stock price, tended to manipulate earnings upward around the time of the announcement.⁴⁴ The study also found a short-term price spike of approximately 3%, followed by negative medium-term abnormal returns of almost 11%.⁴⁵ This suggests that the firms were overvalued at the time of the announcement, but the announcement nevertheless 'fooled' the market and boosted the stock price.⁴⁶

⁴⁰ See Jesse M. Fried, Informed Trading and False Signaling with Open Market Repurchases, 93 Cal. L. Rev. 1323, 1351-55.

⁴¹ See e.g., David L. Ikenberry et al., Market Underreaction to Open Market Share Repurchases, 39 J. Fin. Econ. 181, 183 (1995); William W. Bratton, "The New Dividend Puzzle, 93 Geo. L.J. 845, note 78, citing Gustavo Grullon & Roni Michaely, The Information Content of Share Repurchase Programs (Nov. 2002) (unpublished working paper), at <http://ssrn.com/abstract=206328> and David L. Ikenberry & Theo Vermaelen, The Option to Repurchase Stock, 25 Fin. Mgmt. 9, 17-18 (1996).

⁴² See e.g., David L. Ikenberry et al., Market Underreaction to Open Market Share Repurchases, 39 J. Fin. Econ. 181, 183 (1995); Murali Jagannathan & Clifford Stephens, 32 Fin. Mgmt. 71 (2003). Ikenberry and Jagannathan first describe the traditional signaling hypothesis, and then posit refinements regarding the market's ability (or inability) to distinguish undervaluation from other possible motivations for repurchase announcements.

⁴³ See Jesse M. Fried, Informed Trading and False Signaling with Open Market Repurchases, 93 Cal. L. Rev. 1323, 1352-53.

⁴⁴ See De-Wai Chou & Jane-Ruang Philip Lin, False Signals from Open-Market Repurchase Announcements: Evidence from Earnings Management and Analyst's Forecast Revisions (Nov. 20, 2003) available at <http://ssrn.com/abstract=471122>

⁴⁵ *Id.*

⁴⁶ Although the market may be fooled in some instances, recent studies find that the market reacts less positively to repurchase announcements that are less likely to signal undervaluation. See Murali Jagannathan & Clifford Stephens, 32

There is also evidence that, during market crashes, managers may announce repurchases that they do not intend to carry out in order to reassure the market and stabilize (or boost) the stock price.⁴⁷ However, such market-crash repurchase announcements are generally viewed as exceptional by both scholars⁴⁸ and the SEC.⁴⁹ In fact, the SEC sought to encourage repurchases after the October 1987 and September 2001 market crashes by relaxing its anti-manipulation rules.⁵⁰ The SEC viewed repurchases as a way to reassure investors and forestall a panic.⁵¹

Fin. Mgmt. 71 (2003) (noting that “it is unlikely that a firm could credibly signal that its stock is undervalued on a regular basis” and finding that “infrequent repurchases are greeted much more favorably than more frequent repurchases” with abnormal returns averaging 3.4% for the first repurchase in five years falling to 2% for the second repurchase and 1.1% for the third); Kathleen M. Kahle, When a Buyback isn’t a Buyback: Open Market Repurchases and Employee Options, 63 *Journal of Financial Economics* 235, 239 (2002) (noting that a repurchase initiated to provide stock for employee options programs is less likely to signal undervaluation, and finding that the announcement return is negatively related to non-executive options outstanding).

But See David L. Ikenberry et al., Market Underreaction to Open Market Share Repurchases, 39 *J. Fin. Econ.* 181, 191 (1995) (finding a very similar short term market reaction to glamour stocks and value stocks, at 3.36% and 3.56% respectively).

There are reasons to doubt crude pump-and-dump stock price manipulation by managers. Insider trading is heavily regulated and policed, and the penalties for violations are heavy. There is scant direct evidence of managers personally enriching themselves by manipulating the stock price through repurchase announcements. For an example of the indirect evidence offered to support this argument, See Nikos Vafeas, Determinants of Choice Between Different Repurchase Methods, 12 *J. Acct. Auditing and Fin.* 101, 112-13 Table 1(1997) (reporting a very slight decline in insider ownership after open market repurchases; mean insider ownership fell from 15.7% to 15%).

⁴⁷ See, e.g., Beverly Kracher & Robert R. Johnson, Repurchase Announcements, Lies and False Signals, 16 *J. Bus. Ethics* 1677, 1678 (1997) (following the 1987 market crash, many companies announced large repurchases and then reassured credit rating agencies that they did not intend to carry through with the repurchases).

Repurchase announcements that occurred during the two weeks after the October 19, 1987 market crash generated positive excess returns, and announcing firms outperformed the market over the forty days that followed the announcement day. Elias Raad and H. K. Wu, Insider Trading Effects on Stock Returns Around Open-Market Stock Repurchase Announcements: An Empirical Study, 18 *J. Fin. Res.* 45, 47 (1995), note 5 citing J.M. Netter and M.L. Mitchell, Stock repurchase announcements and insider transactions after the October 1987 stock market crash, *Financial Management* 18, 84-96 (1989).

⁴⁸ Many empirical studies exclude repurchase announcements made during the fourth quarter of 1987 because such announcements are regarded as atypical and unrepresentative of normal repurchase activity. See e.g., Clifford P. Stephens and Michael S. Weisbach, Actual Share Reacquisitions in Open-Market Repurchase Programs, 53 *J. Fin.* 313, 317 (1998); Uptal Bhattacharya and Amy Dittmar, Costless Versus Costly Signaling: Theory and Evidence (May 2004) (Unpublished working paper), available at <http://ssrn.com/abstract=250049>; Elias Raad and H. K. Wu, Insider Trading Effects on Stock Returns Around Open-Market Stock Repurchase Announcements: An Empirical Study, 18 *J. Fin. Res.* 45, 47 (1995).

⁴⁹ See Beverly Kracher & Robert R. Johnson, Repurchase Announcements, Lies and False Signals, 16 *J. Bus. Ethics* 1677, 1679 (1997) (“During the stock market crash of 1987 SEC chairman David Ruder encouraged firms to repurchase stock... Under severe market conditions, the SEC felt it necessary to relax the rules and allow free trading.”); Missy Piccioni, A regulatory response by the SEC to the terrorist attacks on America—Did the issuer repurchase relief make a difference?, 34 *Rutgers L.J.* 564, (2003) (“On September 14, 2001 the SEC relaxed the volume and timing conditions for companies that repurchased their own shares.”).

⁵⁰ Supra Note ____ (immediately above this one)

⁵¹ Missy Piccioni, A regulatory response by the SEC to the terrorist attacks on America—Did the issuer repurchase relief make a difference?, 34 *Rutgers L.J.* 564, 581-585 (2003) citing Chairman Harvey L. Pitt, U.S. Securities and Exchange Commission, Testimony Concerning the Condition of the U.S. Financial Markets Following the Recent Terrorist Attacks

The bargain repurchases hypothesis suggests that non-completed repurchase announcements are functionally equivalent to bluffing in poker—they cast doubt on the meaning of an action that would otherwise provide a clear signal to others. In poker, a raised bet signals to the other players that the betting player either believes he has a winning hand, or is trying to bluff because his hand is weak. If other players misinterpret his actions, he can profit from their miscalculations. Similarly when managers announce a repurchase, the announcement either signals that the company believes its stock is undervalued and will therefore seek to repurchase it at a bargain price, or that the company is simply blowing smoke and will not complete the repurchase. If the market cannot readily tell which repurchase announcements will be followed by actual repurchases, then the market must discount the signal from repurchase announcements, leaving the stock somewhat undervalued when the company actually wishes to repurchase stock.⁵² The resulting bargain repurchases transfer value from shareholders who sell to shareholders who retain their stock and to insiders who own stock options. Managers can increase their stake in the company and indirectly capture insider-trading-like gains by simply holding onto their shares and options.⁵³

Empirical support for market mispricing comes from David Ikenberry et. al. who found significant abnormal positive returns during the four years after repurchase announcements and concluded that “the market treats repurchase announcements with skepticism, leading prices to adjust slowly over time.”⁵⁴ Empirical support for managerial inside (or “informed”) trading comes

Before the Committee on Banking, Housing, and Urban Affairs, United States Senate (September 20, 2001), at <http://www.sec.gov/news/testimlny/092001tshlp.htm>

⁵² See Jesse M. Fried, Informed Trading and False Signaling with Open Market Repurchases, 93 Cal. L. Rev. 1323, 1356-57 (2005).

⁵³ See Jesse M. Fried, Informed Trading and False Signaling with Open Market Repurchases, 93 Cal. L. Rev. 1323, 1344-47 (2005). Fried refers to this as “informed trading” and suggests that it is probably legal.

⁵⁴ David Ikenberry et. al., Market Underreaction to Open Market Share Repurchases, 39 J. Fin. Econ. 181, 183 (1995). But See Konan Chan, et. al., Do Managers time the market? Evidence from open-market share repurchases, (Unpublished Working Paper)(November 2005)(arguing that pseudo market-timing is not “a viable explanation for the positive long-

from Raad & Wu, who found that a higher level of insider stock purchases in the month immediately before a repurchase announcement, a higher percentage of insider ownership, and a higher percent of shares outstanding authorized for repurchases all predicted higher significant abnormal positive stock returns within 10 days after the repurchase announcement.⁵⁵

At least one of these theories of managerial opportunism seems to have resonated with the Securities and Exchange Commission. In adopting their new repurchases disclosure requirement, the SEC explained:

We believe information about how much common stock the issuer has repurchased is important to investors. Studies have shown that the public announcement by an issuer of a repurchase program is often followed by a rise in the issuer's stock price. Studies have also shown that some issuers publicly announce repurchase programs, but do not purchase any shares or purchase only a small portion of the publicly disclosed amount. Thus, disclosure of an issuer's actual repurchases will inform investors whether, and to what extent, the issuer had followed through on its original plan. Investors also will have information regarding an issuer's repurchase activity in order to assess its possible impact on the issuer's stock price, similar to periodic disclosure of issuer earnings and dividend payouts.⁵⁶

D. Regulation

SEC regulations seek to reduce the extent to which company insiders can profit at the expense of other market participants from their insider access to non-public information. Repurchases create opportunities for abuse because companies can anonymously repurchase their own shares on the open market using non-publicly available information that is relevant to the company's valuation. SEC regulations of repurchases seek to reduce the potential for abuse, but probably fall

horizon stock return drift observed subsequent to repurchase announcements") and De-Wai Chou & Jane-Ruang Philip Lin, False Signals from Open-Market Repurchase Announcements: Evidence from Earnings Management and Analyst's Forecast Revisions (Unpublished Working Paper) (Jan 6, 2004) available at <http://ssrn.com/abstract=471122> (finding no evidence of the market underreaction phenomenon and negative abnormal returns in the three to twelve month period following the repurchase announcement).

⁵⁵ Elias Raad and H. K. Wu, Insider Trading Effects on Stock Returns Around Open-Market Stock Repurchase Announcements: An Empirical Study, 18 J. Fin. Res. 45 (1995). See also Nikos Vafeas, et. al., Earnings Management Around Share Repurchases. (Unpublished Working Paper)(February 2003)(reporting evidence weakly consistent with the hypothesis that pre-repurchase earnings are managed downward to induce shareholders to sell at sub-par prices, while post repurchase announcements prices are higher than expected as the earnings management is reversed).

⁵⁶ Purchases of Certain Equity Securities by Issuer and Others, Exchange Act Release No. 33-8335, 68 Fed. Rec. 64,952 (Nov. 17, 2003) available at <http://www.sec.gov/rules/final/33-8335.htm>

short of completely eliminating it. There are three elements to regulation of repurchases: (1) insider trading liability under rule 10b-5; (2) anti-manipulation rules and; (3) disclosure requirements.

1. Insider Trading and Rule 10b-5

Rule 10b-5 requires insiders—including the firm and its officers—to refrain from trading in the firm’s shares while in possession of “material” non-public information regarding their value. This prohibition applies to stock repurchases. However, the bar for materiality is high, so firms’ officers can conduct repurchases while aware of information that, though not “material”, is nonetheless valuable.⁵⁷ Furthermore, using insider information to refrain from trading (i.e., deciding not to purchase shares) generally does not trigger 10b-5 liability. 10b-5 therefore leaves the door open for companies to repurchase their own shares at advantageous prices.

2. Stock Manipulation and the 10b-18 Safe Harbor

Under Section 9(a)(2) of the Securities and Exchange Act of 1934, it is illegal for an individual or corporation to conduct a series of transactions in a security to induce others to buy or sell the security. A repurchase program would violate 9(a)(2) if it was conducted with the intent of driving up the stock price and making it appear as if there is heavy demand for the stock.

However, SEC rule 10b-18 provides repurchasing firms with a safe harbor if the firm: (1) limits its daily open market purchases to 25% of the average daily trading volume of the previous month; (2) does not offer a price which exceeds the highest independent bid or the last independent transaction price, whichever is higher; (3) does not repurchase any shares at the start or during the last half hour of trading; and (4) conducts all purchases on a given day through the same brokerage firm.

⁵⁷ Id. at 1343.

Neither Section 9(a)(2) nor rule 10b-18 apply to repurchase announcements—they only apply to actual repurchases. The false signaling hypothesis postulates that firms seek to drive up the price of their stock by announcing repurchases they do not intend to complete. The bargain repurchases hypothesis suggests that firms announce some repurchases they do not intend to complete in order to confuse the market and minimize the price spike that follows repurchase announcements, thereby facilitating repurchases at favorable prices. Such manipulation is not covered under Section 9(a)(2).⁵⁸ Firms that announce repurchase targets protect themselves by indicating that actual repurchases will depend on market conditions.⁵⁹ Announcing firms are not obligated to repurchase any shares.⁶⁰

3. Disclosure

All major U.S. stock exchanges require listed firms to announce board authorization of an OMR program. However, at the time of announcement the firm does not have to disclose the target (in dollars or shares) or the expiration date of the authorization.

The December 2003 SEC disclosure requirement that is the subject of this paper requires firms to disclose the number of shares purchased each month, the average price per share, and the maximum number (or approximate dollar value) of shares that may yet be purchased under the repurchase program.⁶¹ These disclosures are made after-the-fact, in quarterly financial statements. Such retroactive disclosures increase transparency in the long run, but recent repurchases and future plans remain veiled.

⁵⁸ Although Kracher and Johnson argue that such manipulation should be covered under the general anti-fraud provision Rule 10b-5, which prohibits false or misleading statements in connection with the sale or purchase of security, the SEC has not taken this view. See Beverly Kracher & Robert R. Johnson, Repurchase Announcements, Lies and False Signals, 16 J. Bus. Ethics 1677, 1679-80 (1997).

⁵⁹ See Jesse M. Fried, Informed Trading and False Signaling with Open Market Repurchases, 93 Cal. L. Rev. 1323, 1341 (2005)

⁶⁰ *Id.* at 1341-42

⁶¹ See Purchases of Certain Equity Securities by Issuer and Others, Exchange Act Release No. 33-8335, 68 Fed. Rec. 64,952 (Nov. 17, 2003) available at <http://www.sec.gov/rules/final/33-8335.htm>

III. Methods, Results & Discussion

Scholars and regulators became concerned that some repurchase programs might benefit insiders at the expense of public investors because of the suspicious frequency with which firms announcing repurchase programs failed to complete those repurchases. Repurchase non-completion is thought to be an observable indicator of exploitive behaviors such as false signaling and bargain repurchases that are difficult to measure directly. Previous studies suggest that before the 2003 SEC disclosure requirement, as many as a quarter of firms announcing repurchases did not repurchase a single share.⁶² This study evaluates the effectiveness of the SEC's regulation by measuring whether more stringent disclosure requirements since 2004 have increased average repurchase completion rates and cut down on the proportion of announcing firms that repurchase no shares or only a small percent of their announced target. Because this study seeks to measure the impact of a regulation on repurchase completion rates, it is necessary to both measure completion rates after the regulation went into effect and to compare those measurements to completion rates before the regulation.

To measure completion rates after the SEC disclosure requirement went into effect, this study looks at 365 repurchases announced during 2004—the first year during which the disclosure requirement was in effect—and tracks actual repurchases for 20 months. This study is the first of its kind to use actual repurchase data from mandatory disclosures.⁶³ Before the SEC disclosure

⁶² See *supra* Section II.C.1 False signaling.

⁶³ As of January 2004, publicly traded firms must disclose this information in SEC Form 10-Q item 2(e) and in Form 10-K item 5(c). As far as I am aware, no commercial database compiles and tracks this information—it had to be gathered by searching 10-Qs and 10-Ks on EDGAR and manually entering data into a spreadsheet.

In a few instances, monthly repurchases (in shares and dollars) were tracked based on another figure companies are required to disclose—the number of shares (or the dollar value) remaining to be repurchased under the existing authorization. Companies were assumed to have repurchased an amount equal to the decline in the remaining repurchase authorization, taking into account any new authorizations and/or cancellations of old authorizations.

requirement went into effect, studies could either estimate repurchases⁶⁴ or use repurchase data voluntarily supplied by companies (and thereby introduce selection bias). This study is therefore more accurate than previous studies. However, this improvement in accuracy comes at the price of more complicated cross-study comparison. A detailed description of the sample, data source, analyses, and results of the original empirical portion of this study appears below in subsections A through D.

Completion rates before the disclosure requirement were reported in two previous empirical studies, each of which examined repurchases announced over a ten-year period. The first is a seminal study by Stephens and Weisbach⁶⁵ that analyzed almost a thousand repurchases announced between 1981 and 1990. The second is a more recent unpublished working paper by Bhattacharya and Dittmar⁶⁶ that examined over two thousand repurchases announced between 1985 and 1995. Both studies reported substantially lower completion rates than found in this study, suggesting that the SEC disclosure rule had the intended effect of making repurchase announcements a more reliable indicator of actual repurchases.

⁶⁴ For a detailed discussion of the limitations of various methods of estimating actual repurchases, see Kathleen Kahle, et al., “Measuring Share Repurchases” (Unpublished working paper) (August 2005) available at <http://ssrn.com/abstract=726284>.

⁶⁵ Clifford P. Stephens and Michael S. Weisbach, Actual Share Reacquisitions in Open-Market Repurchase Programs, 53 J. Fin. 313, 314 (1998). The sample of this study was the 944 open market repurchase programs announced from 1981 to 1990 in *The Wall Street Journal Index*, excluding the 995 announcements made during the fourth quarter of 1987. *Id.* at 317.

⁶⁶ Uptal Bhattacharya and Amy Dittmar, Costless Versus Costly Signaling: Theory and Evidence (May 2004) (Unpublished working paper), available at <http://ssrn.com/abstract=250049>. The sample for this study was all 2,297 firms announcing open market repurchases between 1985 and 1995 as listed in the Securities Data Corporation’s Mergers and Acquisitions database, excluding announcements in the last quarter of 1987.

A. Sample and Data

The initial sample was drawn from the Securities Data Corporation Platinum Mergers and Acquisitions database (SDC Platinum), which was used to identify publicly traded U.S. companies⁶⁷ announcing open market repurchases between January 1, 2004 and December 31, 2004. There were initially 510 repurchase announcements, which were pruned to 365 in the final sample.

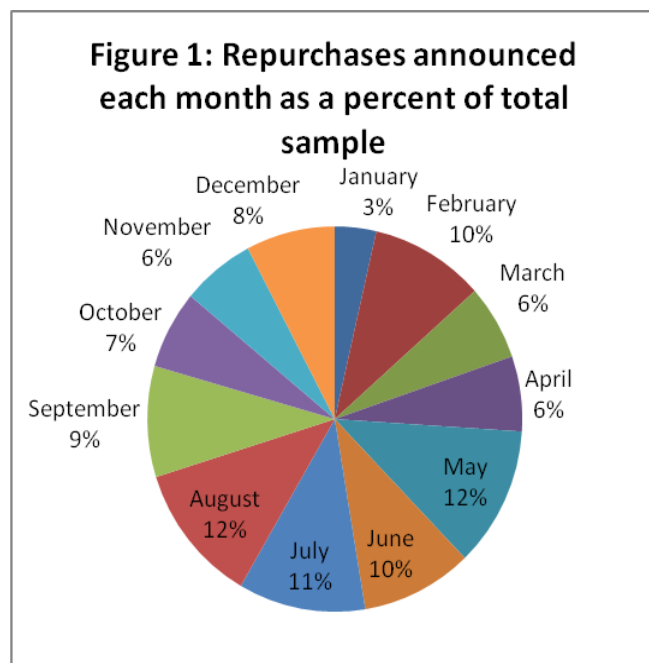
Thirty-eight of the repurchase announcements were excluded because they were not actually announcements of new repurchase programs, but instead announced completion or other updates to existing repurchase programs. Ninety-one repurchase announcements were excluded because data was missing—the companies' 10-Ks or 10-Qs for the relevant time period were not available on EDGAR or the 10-Ks or 10-Qs did not contain the relevant disclosures. Sixteen repurchase announcements were excluded because inclusion would create problems of double-counting because the repurchase announcement was the second repurchase announcement of a company already in the sample, and the company's first repurchase was still being tracked at the time of the second announcement. These exclusions left 365 repurchase announcements in the final sample.

⁶⁷ Listed on the NYSE, ASE, or NASDAQ.

B. Descriptive Statistics

Of the 365 repurchases included in the sample, the first repurchase was announced by Chattem Inc. (CHTT) on January 1, 2004; the last was announced by Mod Pac Corp (MPAC) on December 31, 2004. A breakdown of the number and proportion of repurchase announcement each month appears below.

Month:	Repurchases	% of total
January	13	3.6%
February	36	9.9%
March	23	6.3%
April	23	6.3%
May	43	11.8%
June	35	9.6%
July	40	11.0%
August	43	11.8%
September	34	9.3%
October	24	6.6%
November	23	6.3%
December	28	7.7%
Total:	365	100.0%



The average target size announced was 7.04% of shares outstanding.⁶⁸ This is in line with previous studies reporting an average announced target of approximately 6-7% of total shares outstanding.⁶⁹ The average dollar value of targeted shares was approximately \$514 million. The

⁶⁸ SDC provided this data for 181 out of the 365 repurchases in the sample. The median value was 5.6% of shares outstanding; the maximum value was 38.1% and the minimum was 0.4%.

⁶⁹ See, e.g., David L. Ikenberry et al., Market Underreaction to Open Market Share Repurchases, 39 J. Fin. Econ. 181, 185 (1995) (reporting that publicly traded firms announcing OMRs between 1980 and 1990 sought to repurchase, on average, 6.6% of outstanding shares); Clifford P. Stephens and Michael S. Weisbach, Actual Share Repurchases in Open-Market Repurchase Programs, 53 J. Fin. 313, 318 (1998) (reporting an average announced size of approximately 7% of firms total shares outstanding, with a median of approximately 5% of total shares outstanding for repurchases between 1981 and 1990); Kathleen M. Kahle, When a Buyback isn't a Buyback: Open Market Repurchases and Employee Options, 63

targeted values ranged from a minimum value of \$1 million to a maximum of \$15 billion. The combined dollar value of all 365 repurchase targets was just under \$188 billion. For this study's sample, the size of the repurchase authorization had a very slight negative correlation with repurchase completion.⁷⁰ In other words, larger repurchase programs were completed slightly more slowly than smaller repurchase programs.

C. Measuring Repurchase Program Completion: Shares vs. Dollars

Repurchase announcements include a maximum authorization, sometimes called a target. This target is either a maximum number of shares that may be repurchased, or a maximum dollar amount that may be spent on repurchases.⁷¹ For the sake of simplicity, this study measures all repurchase announcements and actual repurchases in dollars.⁷² Measuring in dollars avoids complications from stock splits and facilitates comparison across companies.

The unit of measurement can affect the reported percent completion when the stock price at announcement is different from the price at which shares are actually repurchased. If the stock price goes up after the announcement, and shares are repurchased at a higher price, then the reported percent completion will be higher when repurchases are measured in dollars than when they are measured in shares. On the other hand, if shares are repurchased at a lower price than the

Journal of Financial Economics 235, 245 (2002) (reporting an average announced target of 6.4% for repurchases announced between January 1991 and December 1996).

⁷⁰ The size of the repurchase authorization was correlated with percent completion at 12 months after the announcement. With percent completion truncated at 100%, the strength of the correlation was -0.039. The correlation was statistically significant (P value for 2 tailed t-test < 0.01).

⁷¹ One hundred and eighty of the 365 repurchase announcements in the sample were originally denominated in shares, while 185 were originally denominated in dollars. When repurchase announcements are denominated in shares, SDC automatically converts the target to a dollar value based on the closing stock price on the last full trading day prior to the announcement of the board's approval. Firms' subsequent repurchase activity can also be measured either in the number of shares repurchased or in dollars spent, because firms must report both the number of shares repurchased each month and the average price paid per share.

⁷² Although the "maximum authorization" is sometimes referred to as a target, I am not aware of any evidence of a relationship between the denomination of the maximum authorization (in either shares or dollars) and the conduct of subsequent repurchase activity. Repurchase announcements generally include disclaimers that the amount of actual repurchases will depend on market conditions (i.e., price, liquidity, etc.). Actual repurchases presumably take such factors into account, whether the repurchase target is denominated in dollars or in shares.

price at announcement, then reported percent completion will be lower when shares are measured in dollars than when they are measured in shares.

For the sample used in this study, the use of dollars instead of shares did not significantly affect the reported percentage completion of repurchases.⁷³ Firms that announced repurchases in shares paid an average of \$28.91 per share. The average price at the time of the repurchase announcement⁷⁴ was \$29.60—about 2% more. This difference between the mean repurchase price and mean announcement price was not statistically significant (two tailed P-value = 0.16).

D. Results and Comparison with Previous Studies

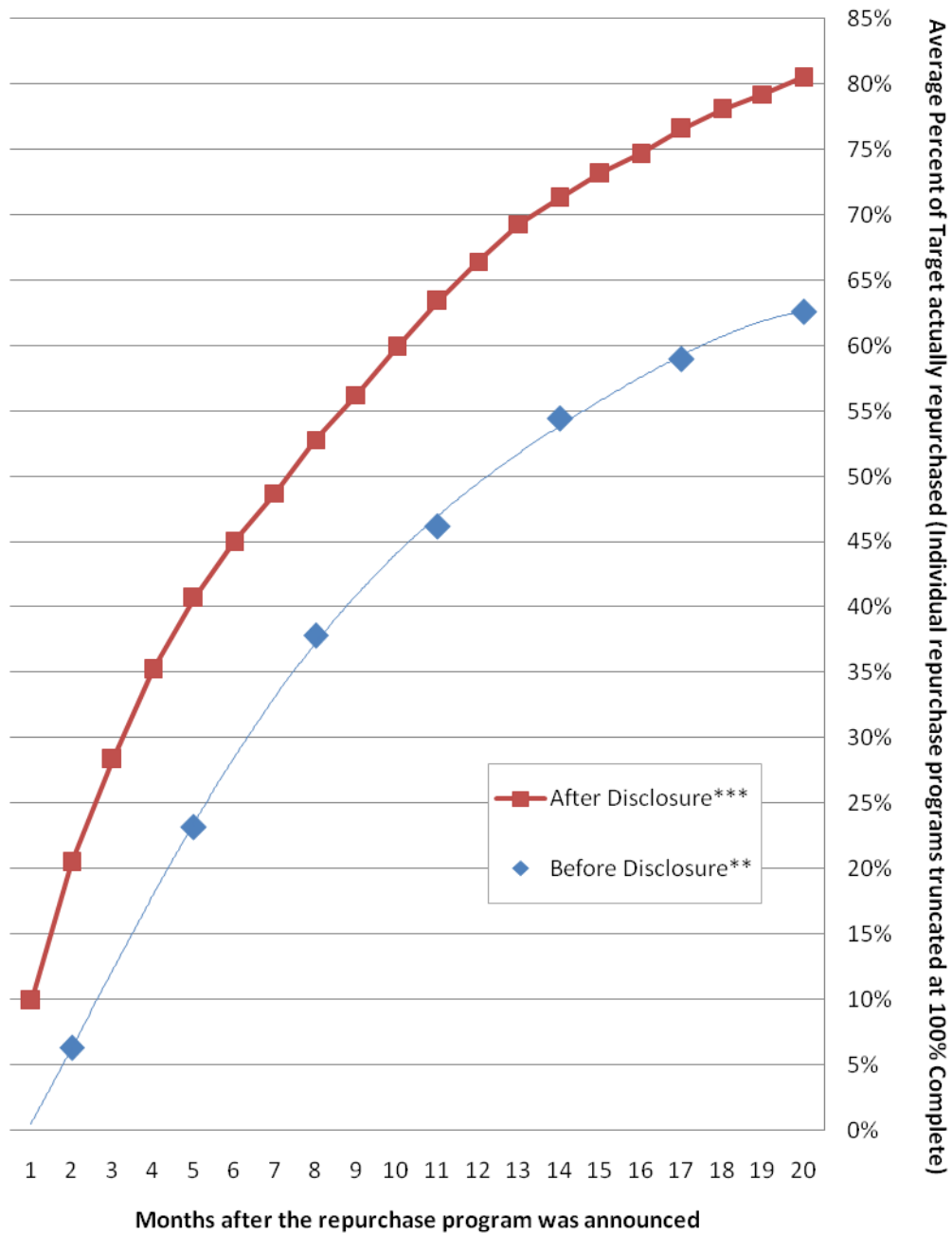
1. Central Tendency: The disclosure rule increased repurchase completion rates

Since the 2003 SEC disclosure requirement, announced targets have become more reliable indicators of actual repurchases. Whereas before the disclosure rule, 20 months after the announcement repurchases were on average 62.6% complete, after the disclosure rule went into effect, repurchases were 80.3% complete. **Figure 2** below illustrates that after the disclosure rule, announced repurchases were completed more rapidly and to a greater extent. The figure depicts the average percent completion over time, before and after the disclosure rule.

⁷³ To the extent that there is a very small effect, reported repurchase completion will be slightly lower in this study than it would have been had percent completion been measured in shares for firms that announced repurchase targets in shares. Any bias to the data is therefore in a conservative direction; reversing the bias would yield even stronger results than reported.

⁷⁴ The closing price on the last full day of trading before the announcement, used by SDC to convert the announcement from shares to dollars.

**Figure 2: Before and after the new SEC Disclosure Rule:
Mean percent of announced target purchased in
months after announcement**



The average was calculated by truncating repurchases at 100% complete, summing the resulting percent completion figures for all 365 repurchase programs studied, and dividing by 365. The resulting measure gives equal weight to each repurchase program, regardless of size. Pre-disclosure figures come from Stephens and Weisbach's Table II, Panel A, and were estimated by CRSP Decrease in Shares Outstanding and truncated at 100%. Because Stephens and Weisbach reported data quarterly instead of monthly, there are fewer data points in the bottom line than in the top line. Because the bottom line has fewer data points and those data points are based on estimates, the bottom line is fitted with a logarithmic trend line. The top line runs through each of the data points.

The data summarized in **Figure 2** above is presented in **Table 2** below.

Table 2: Central Tendency Before and After Disclosure			
Mean percent repurchase completion, truncated at 100% complete			
Time*		% of announced target actually repurchased (cumulative repurchases)	
Quarters after announcement	Months after announcement	Before Disclosure**	After Disclosure***
	0		9.9%
0	1	6.3%	20.5%
	2		28.4%
	3		35.2%
1	4	23.2%	40.7%
	5		45.0%
	6		48.7%
2	7	37.8%	52.8%
	8		56.2%
	9		59.9%
3	10	46.2%	63.4%
	11		66.4%
	12		69.3%
4	13	54.4%	71.3%
	14		73.2%
	15		74.7%
5	16	59.0%	76.6%
	17		78.1%
	18		79.2%
6	19	62.6%	80.5%

*Because pre-disclosure figures were reported quarterly whereas post-disclosure figures were reported monthly, it is necessary to establish some equivalence for purposes of comparison. Quarter 0 (the quarter of the announcement) could equal month 0, month 1 or month 2. This study splits the difference and equates quarter 0 with month 1.

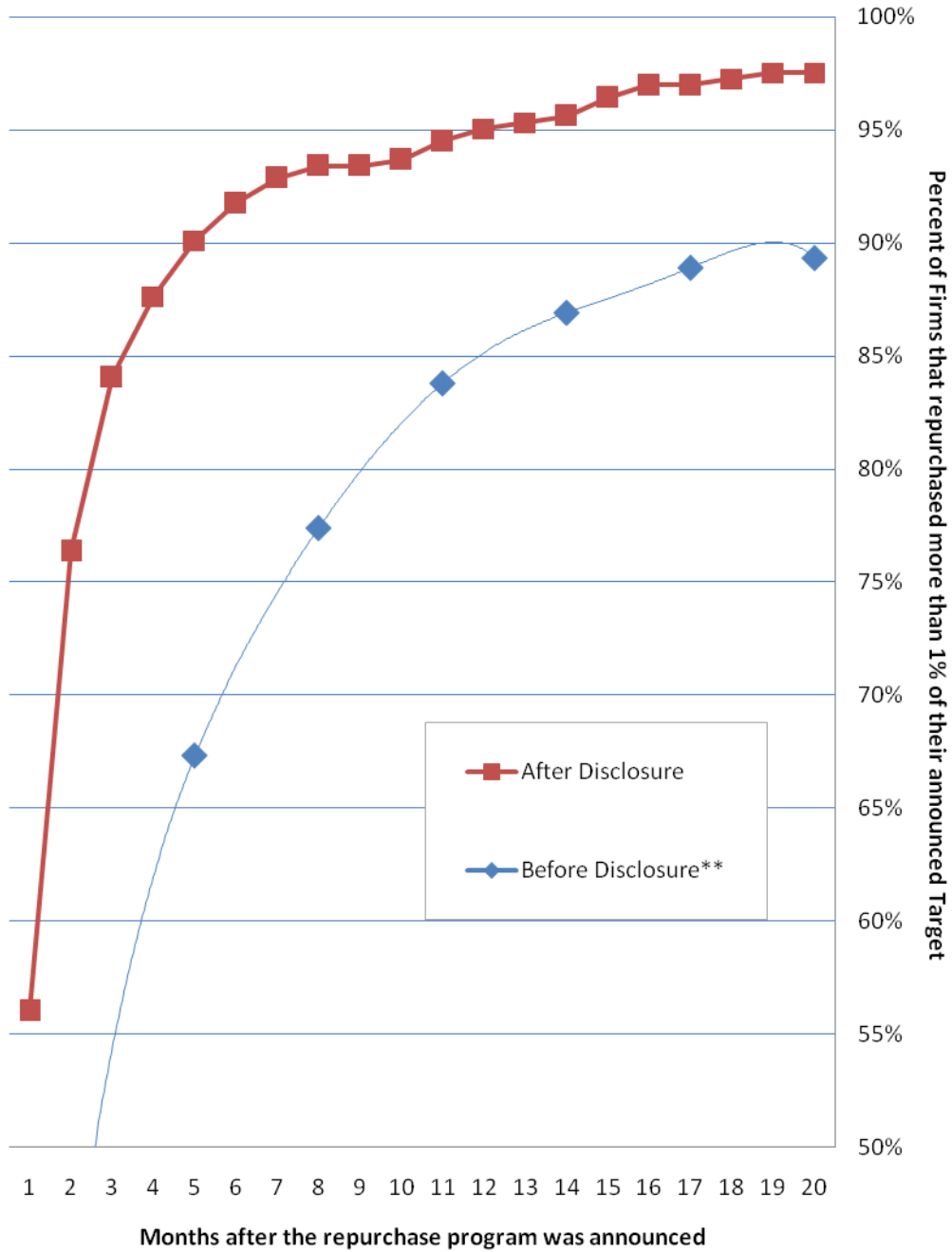
**Figures come from Stephens & Weisbach, Table II, Panel A. Data reported quarterly. Estimated by CRSP Decrease in Shares Outstanding. Truncated at 100%.

***Figures come from this study, actual monthly repurchase data. Each company given equal weight, regardless of size of repurchase program. Truncated at 100%.

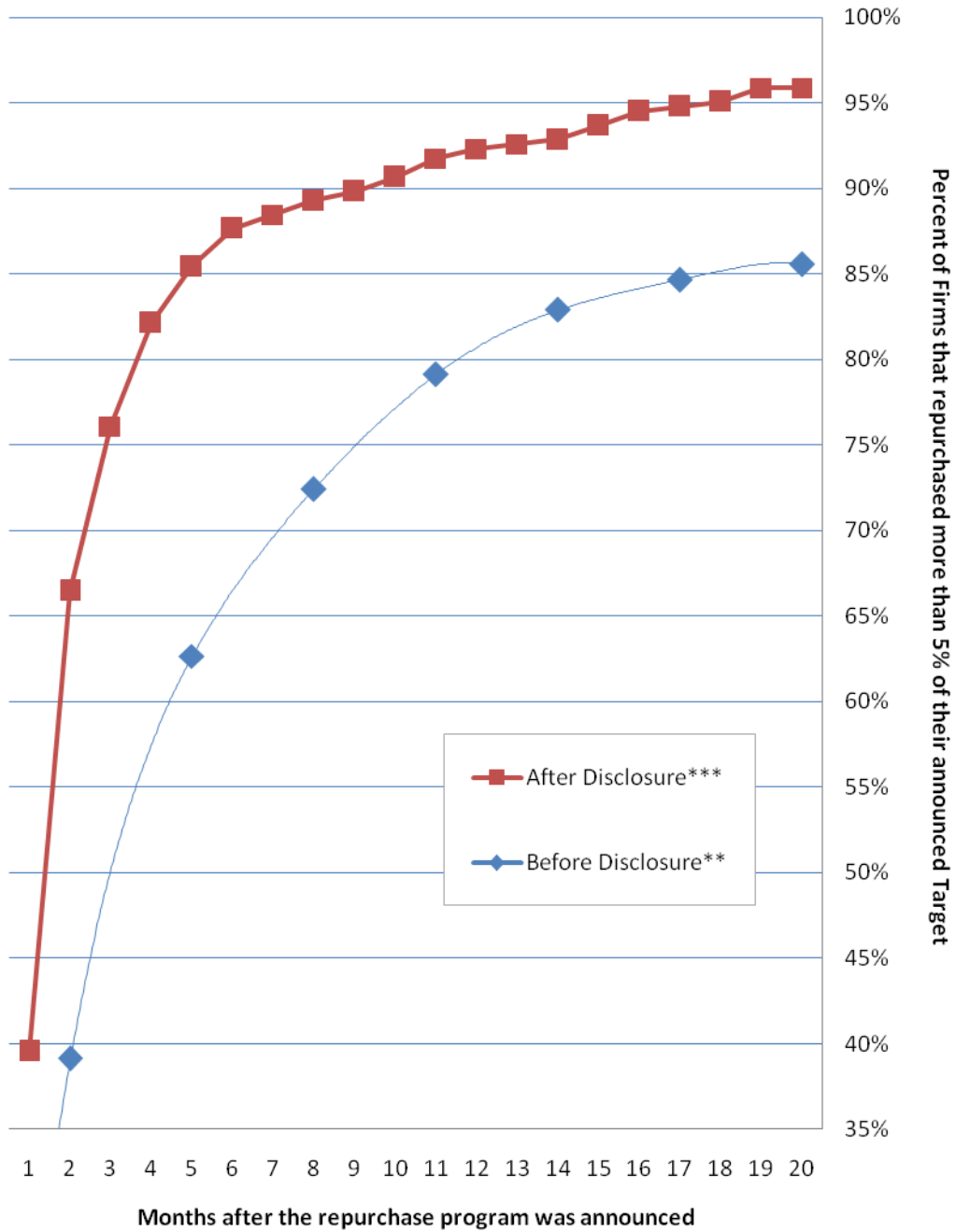
2. Distribution: The disclosure rule increased the proportion of firms that completed their repurchases

Figure 2 and **Table 2** above compared average repurchase completion rates before and after the disclosure rule to show that the disclosure rule increased repurchase completion; **Figure 2** and **Table 2** measure central tendency. Greater post-disclosure repurchase completion can also be demonstrated through distributional data. The disclosure rule increased the proportion of announcing firms that completed their repurchases. **Figure 3** through **Figure 7** below depict the percent of repurchase announcements that were at least 1%, 5%, 20%, 50% and 100% complete. These completion levels were chosen because they match pre-disclosure data provided by Stephens and Weisbach. The data is presented in **Table 3**. Pre-disclosure data comes from Stephens and Weisbach, Table II, Panel D. Stephens and Weisbach estimated repurchases using CRSP Decrease in Shares Outstanding.

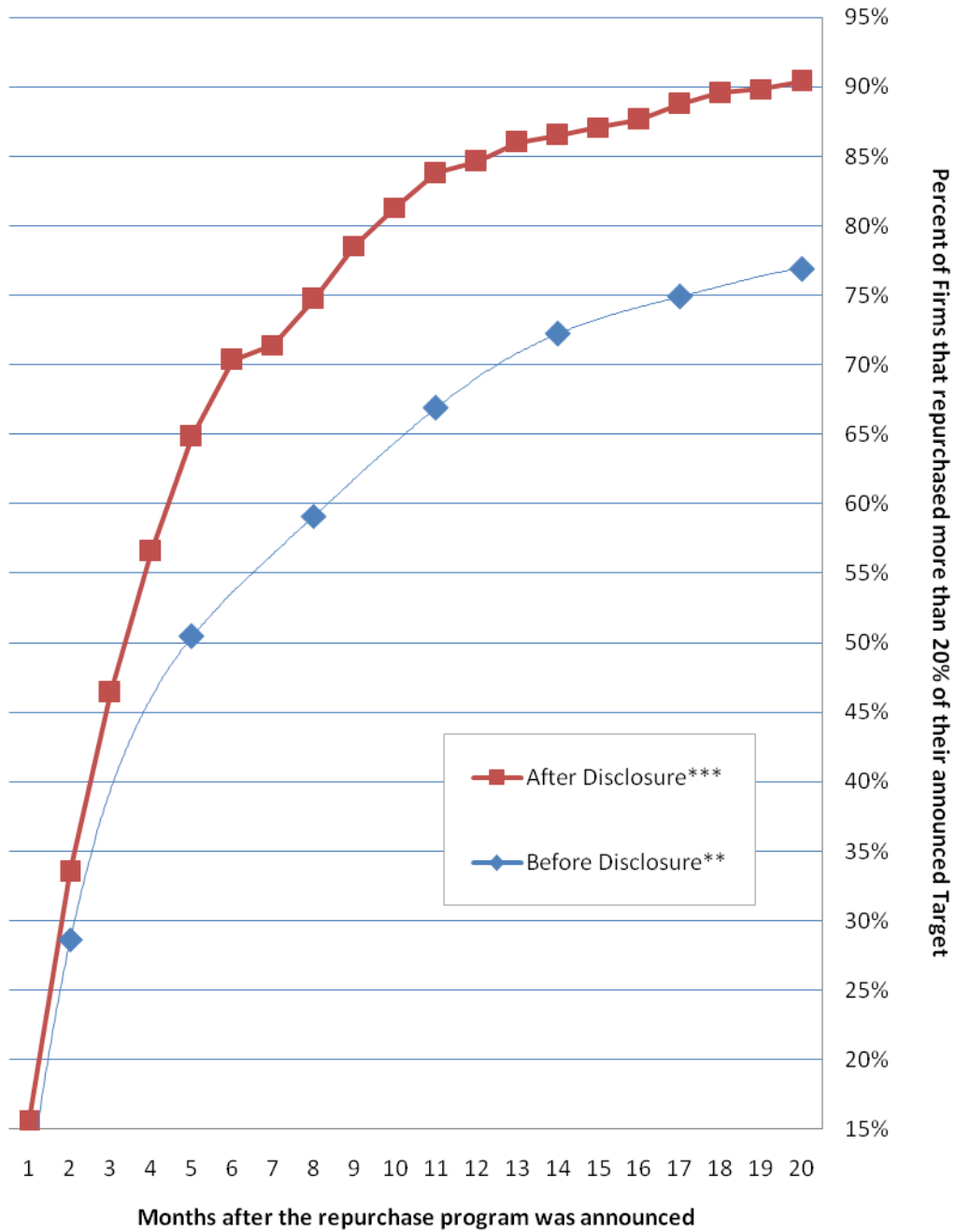
**Figure 3: Before and after the New SEC Disclosure Rule:
Percent of announcing Firms that repurchased
More than 1% of their announced Target**



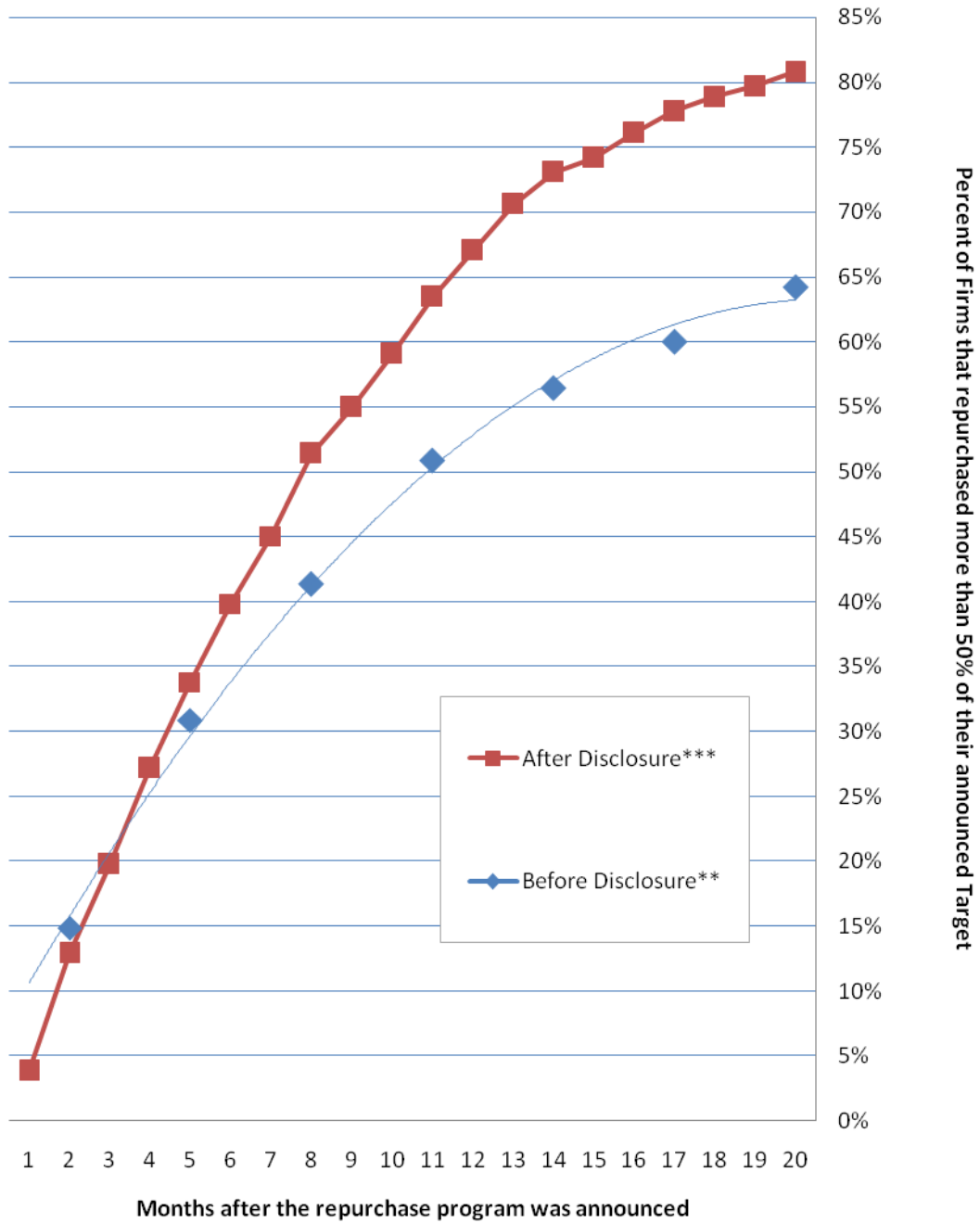
**Figure 4: Before and after the New SEC Disclosure Rule:
Percent of announcing Firms that repurchased
More than 5% of their announced Target**



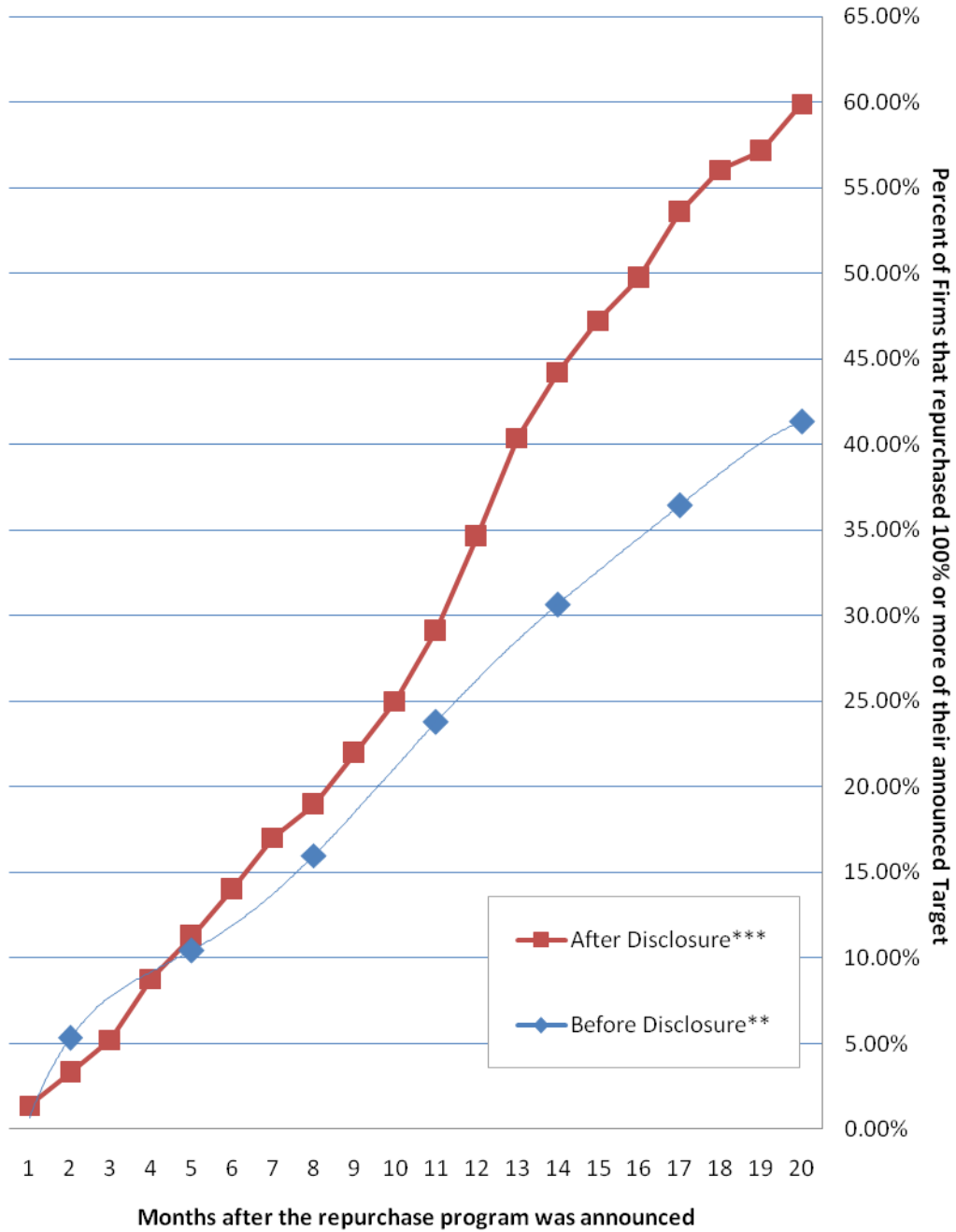
**Figure 5: Before and after the New SEC Disclosure Rule:
Percent of announcing Firms that repurchased
More than 20% of their announced Target**



**Figure 6: Before and after the New SEC Disclosure Rule:
Percent of announcing Firms that repurchased
More than 50% of their announced Target**



**Figure 7: Before and after the New SEC Disclosure Rule:
Percent of announcing Firms that repurchased
100% of their announced Target**



**Table 3: Before and After Disclosure
Percent of Firms that Complete their Announced Repurchases**

Time* after announcement		% of Firms that repurchased More than 1% of announced target		% of Firms that repurchased More than 5% of announced target		% of Firms that repurchased More than 20% of announced target		% of Firms that repurchased More than 50% of announced target		% of Firms that repurchased More than 100% of announced target	
Quarters	Months	Before Disclosure**	After Disclosure***	Before Disclosure**	After Disclosure***	Before Disclosure**	After Disclosure***	Before Disclosure**	After Disclosure***	Before Disclosure**	After Disclosure***
	0		56.04%		39.56%		15.66%		3.85%		1.37%
0	1	42.89%	76.37%	39.12%	66.48%	28.67%	33.52%	14.89%	12.91%	5.33%	3.30%
	2		84.07%		76.10%		46.43%		19.78%		5.22%
	3		87.64%		82.14%		56.59%		27.20%		8.79%
1	4	67.34%	90.11%	62.67%	85.44%	50.45%	64.84%	30.88%	33.79%	10.44%	11.26%
	5		91.76%		87.64%		70.33%		39.84%		14.01%
	6		92.86%		88.46%		71.43%		45.05%		17.03%
2	7	77.40%	93.41%	72.45%	89.29%	59.12%	74.73%	41.33%	51.37%	16.00%	18.96%
	8		93.41%		89.84%		78.57%		54.95%		21.98%
	9		93.68%		90.66%		81.32%		59.07%		25.00%
3	10	83.78%	94.51%	79.12%	91.76%	66.89%	83.79%	50.88%	63.46%	23.77%	29.12%
	11		95.05%		92.31%		84.62%		67.03%		34.62%
	12		95.33%		92.58%		85.99%		70.60%		40.38%
4	13	86.89%	95.60%	82.89%	92.86%	72.23%	86.54%	56.44%	73.08%	30.66%	44.23%
	14		96.43%		93.68%		87.09%		74.18%		47.25%
	15		96.98%		94.51%		87.64%		76.10%		49.73%
5	16	88.89%	96.98%	84.67%	94.78%	74.89%	88.74%	60.00%	77.75%	36.44%	53.57%
	17		97.25%		95.05%		89.56%		78.85%		56.04%
	18		97.53%		95.88%		89.84%		79.67%		57.14%
6	19	89.33%	97.53%	85.56%	95.88%	76.89%	90.38%	64.22%	80.77%	41.33%	59.89%

*Because pre-disclosure figures were reported quarterly whereas post-disclosure figures were reported monthly, it is necessary to establish some equivalence for purposes of comparison. Quarter 0 (the quarter of the announcement) could equal month 0, month 1 or month 2. This study splits the difference and equates quarter 0 with month 1.

**Figures come from Stephens & Weisbach, Table II, Panel D. Data reported quarterly. Estimate by CRSP Decrease in Shares Outstanding.

***Figures come from this study, actual monthly repurchase data.

The higher completion rates since the 2003 SEC disclosure rule went into effect suggest that the rule had the intended effect of making repurchase announcements a more reliable indicator of actual repurchases.

3. Pre-disclosure data and response to possible critiques

Repurchase completion rates before the disclosure requirement were reported in two previous empirical studies, each of which examined repurchases announced over a ten-year period. The first is a seminal study by Stephens and Weisbach⁷⁵ that analyzed almost a thousand repurchases announced between 1981 and 1990. The second is a more recent unpublished working paper by Bhattacharya and Dittmar⁷⁶ that examined over two thousand repurchases announced between 1985 and 1995. Both studies reported substantially higher non-completion rates than found in this study. Because those earlier studies tracked repurchases for a longer time period—3 and 4 years after the announcement versus 20 months for this study—companies in those studies had more opportunity to complete their repurchases, yet repurchased substantially less of their target.

Stephens and Weisbach found that in the three years after announcing a repurchase program, nearly 17% of companies repurchased less than 20% of their target. (10% of companies repurchased less than 5% of their announced target).⁷⁷ Bhattacharya and Dittmar found that in the

⁷⁵ Clifford P. Stephens and Michael S. Weisbach, Actual Share Reacquisitions in Open-Market Repurchase Programs, 53 J. Fin. 313, 314 (1998). The sample of this study was the 944 open market repurchase programs announced from 1981 to 1990 in *The Wall Street Journal Index*, excluding the 995 announcements made during the fourth quarter of 1987. *Id.* at 317.

⁷⁶ Uptal Bhattacharya and Amy Dittmar, Costless Versus Costly Signaling: Theory and Evidence (May 2004) (Unpublished working paper), available at <http://ssrn.com/abstract=250049>. The sample for this study was all 2,297 firms announcing open market repurchases between 1985 and 1995 as listed in the Securities Data Corporation's Mergers and Acquisitions database, excluding announcements in the last quarter of 1987.

⁷⁷ Stephens & Weisbach, page 323, Table II, Panel D.

four years after announcing a repurchase program, 18% to 27% of companies announcing repurchases repurchased no stock whatsoever.⁷⁸

This study uses Stephens and Weisbach as the primary control/comparison study for two reasons: first, Stephens and Weisbach published far more detailed descriptive statistics that facilitate comparison; and second, Stephens and Weisbach's study was published in a journal while Bhattacharya and Dittmar's study is an unpublished working paper.

The interpretation presented in this paper—that higher completion rates since the 2003 SEC disclosure rule went into effect suggests that the rule had the intended effect of making repurchase announcements a more reliable indicator of actual repurchases—is vulnerable to three critiques that challenge the use of Stephens and Weisbach's study as a pre-disclosure control. The first critique is that the samples differ because Stephens and Weisbach identified repurchases using Wall Street Journal announcements whereas this study identified repurchase announcements using the SDC database. The second critique is that the time gap between Stephens and Weisbach's pre-disclosure data and the disclosure rule is too large to attribute any shift in repurchase completion rates to the disclosure rule. The third critique is that the methods used by Stephens and Weisbach to estimate repurchases *underestimated* repurchases and therefore underestimated repurchase completion rates.

These critiques present less of a challenge to the secondary control study, conducted by Bhattacharya and Dittmar. Bhattacharya and Dittmar's study is not vulnerable to the first or third critique, and is less vulnerable to the second critique. Furthermore, Bhattacharya and Dittmar reported even lower rates of repurchase completion than Stephens and Weisbach. Had

⁷⁸ Uptal Bhattacharya and Amy Dittmar, *Costless Versus Costly Signaling: Theory and Evidence*, at 17 (May 2004) (Unpublished working paper), available at <http://ssrn.com/abstract=250049> (reporting that 18% of companies did not repurchase any stock within four years and 9% of companies dropped off Compustat without repurchasing any shares).

Bhattacharya and Dittmar’s study been used as the primary control, the results would reflect an even more dramatic increase in repurchase completion rates after the disclosure rule went into effect. The choice of Stephens and Weisbach as the primary control was therefore a choice to *conservatively* estimate the impact of the new disclosure regulation.

First, Bhattacharya and Dittmar’s sample is similar to the sample in this study because Bhattacharya and Dittmar also identified announcing companies using the SDC database. The choice of database may have an effect because SDC includes smaller firms which would probably not be included in a sample derived from the WSJ.

Second, although the time gap between the end of Stephens and Weisbach’s sample period (1990) and the beginning of this study’s sample period (2004) might give some pause in attributing the changes in repurchase completion to the new SEC regulation, Bhattacharya and Dittmar’s data suggests that before the disclosure rule went into effect, completion rates were trending downward. Across studies, Bhattacharya and Dittmar (repurchases from 1985 to 1995) found lower rates of completion than Stephens and Weisbach (1981 to 1990). Furthermore, Bhattacharya and Dittmar found that within their sample, the proportion of firms completing repurchases trended downward over time.⁷⁹ Therefore a more recent control period would likely suggest an even more dramatic post-disclosure increase in completion rates.

Third, although the primary method used by Stephens and Weisbach to estimate repurchases tends to understate repurchases under certain circumstances,⁸⁰ it seems unlikely that

⁷⁹ *Id.* at 18

⁸⁰ Stephens and Weisbach estimated repurchases using several different methods, some of which tend to overstate repurchases, some of which tend to understate repurchases. For their distributional data—presented in **Figures 1 and 2** and **Table 1**—they estimated repurchases as the monthly decrease in shares outstanding reported by the Center for Research in Securities Prices (CRSP), adjusted for stock splits. This measure tends to understate repurchases. The size of the error depends on the extent to which a firm distributes shares (for example, for exercises of employee stock options) in the same month as it repurchases them. Clifford P. Stephens and Michael S. Weisbach, Actual Share Repurchases in Open-Market Repurchase Programs, 53 J. Fin. 313-24 (1998). *See also* Kathleen M. Kahle, When a Buyback isn’t a Buyback: Open Market Repurchases and Employee Options, 63 Journal of Financial Economics 235, 256 (2002) (“Option

this estimation bias could fully account for the dramatic difference in repurchase completion rates observed in this study. Furthermore, Bhattacharya and Dittmar used estimation methods that tend to *overstate* repurchases,⁸¹ but still found lower rates of completion than Stephens and Weisbach. This suggests that the pre-disclosure-rule trend toward lower and lower rates of repurchase completion is even stronger than the raw data (unadjusted for estimation biases) suggests. This confirms that the use of Stephens and Weisbach as the primary control study was a conservative choice, and the true impact of the SEC disclosure rule is probably even greater than this study suggests.

IV. Conclusion

Since the 2003 SEC disclosure requirement, announced targets have become more reliable indicators of actual repurchases. Whereas before the disclosure requirement, as many as a quarter of firms would announce repurchases and fail to complete their repurchases, since the 2004 SEC disclosure requirement, firms consistently complete their announced repurchases. Because repurchase completion is a good proxy for false signaling and bargain repurchases, we can conclude that disclosure has substantially reduced the danger to investors of false signaling or bargain repurchases. This demonstrates that mandatory disclosure rules change the behavior of market participants and can be an effective method to protect the investing public.

The exact mechanism by which disclosure works to change market participant behavior is not clear, since the disclosures are retroactive and informational asymmetries persist. Returning to the poker analogy used earlier in this paper, retroactive disclosures are the equivalent of forcing

exercises have a significant effect on the CRSP measure of the change in shares outstanding, which could seriously bias this estimate of actual share repurchases.”)

⁸¹ Bhattacharya and Dittmar estimated repurchases using the Compustat data item *Purchase of Stock*, reduced by any decrease in preferred stock. This measure overstates repurchases by the amount of class A, class B, and special stock converted into common stock, and by the amount of retired common stock. Uptal Bhattacharya and Amy Dittmar, *Costless Versus Costly Signaling: Theory and Evidence*, at 16 (May 2004) (Unpublished working paper), available at <http://ssrn.com/abstract=250049>

players to show their cards after the hand has been played. It is still possible to win by bluffing, but there may be long-term consequences. The market may somehow punish false signalers; perhaps some stigma or reputational harm attaches. Or perhaps other market participants can use past patterns of behavior to accurately predict future behavior, and are suspicious or otherwise wary of false signalers. The exact mechanism is uncertain, but the results are clear: retroactive disclosure works.