

UC Berkeley
Boalt Working Papers in Public Law

Title

Share Repurchases and Managerial Opportunism

Permalink

<https://escholarship.org/uc/item/068166zz>

Author

Fried, Jesse M.

Publication Date

2004-07-01

Forthcoming, __ CAL. L. REV. ____ (2005)

Share Repurchases and Managerial Opportunism

Jesse M. Fried*

Boalt Hall School of Law, U.C. Berkeley

*I would like to thank Alan Auerbach, Ian Ayres, Lucian Bebchuk, Bernie Black, Brian Broughman, Stephen Choi, Aaron Edlin, Steve Fraidin, Merritt Fox, Miri Ganor, Jeff Gordon, Zohar Goshen, Mike Guttentag, Andrew Guzman, Jim Hines, Marcel Kahan, Ehud Kamar, Herma Hill Kay, Michael Klausner, Dan Klerman, Chris Kutz, Curtis Milhaupt, Geoff Miller, Ariel Porat, Adam Pritchard, Roberta Romano, Ok-Rial Song, Eric Talley, Fred Tung, Omri Yadlin, and seminar participants at the American Law and Economics Association 2001 Meeting, Boalt Hall's Faculty Workshop, the Fried, Frank Corporate Law and Economics workshop, Hebrew University, the Korea Development Institute, University of Michigan, Tel Aviv University, UCLA/USC 2004 Annual Corporate Law Roundtable, USC, and Yale for their comments on earlier versions of this paper. I would also like to thank Miranda Gong, Matthew Heyn, Megan McCarthy, Jay Metz, Elena Kouwabina, and Chris Stephens for very helpful research assistance. The financial support of the Berkeley Committee on Research and the Boalt Hall Fund is gratefully acknowledged. Comments are welcome and can be sent to friedj@law.berkeley.edu.

Share Repurchases and Managerial Opportunism

Jesse M. Fried

Abstract

Public companies in the United States and elsewhere are increasingly using open market repurchases, rather than dividends, to distribute cash. This paper explains why managers' ability to use inside information to repurchase stock at a bargain price is likely to systematically transfer value from public investors. In addition, tying cash distributions to the gap between the stock price and its actual value is likely to distort managers' payout, disclosure, and investment decisions, further reducing shareholder returns. The paper also proposes requiring firms to publicly disclose in advance the repurchase orders transmitted to their brokers. Such a disclosure rule, the paper shows, would reduce the economic distortions associated with repurchases without undermining their potential benefits.

JEL Classification: G30, G32, G35, G38

Keywords: payout policy, stock repurchases, dividends, signaling, insider trading.

TABLE OF CONTENTS

I. INTRODUCTION.....	1
II. THE USE, BENEFITS, AND CURRENT REGULATION OF REPURCHASES.....	8
A. Corporate Payout Policy and the Increasing Use of Repurchases.....	8
B. The Potential Benefits of Repurchases to Shareholders.....	11
1. Tax Efficient Distribution of Excess Cash	11
2. Lower Transaction Costs.....	13
3. Greater Financial Flexibility for the Firm.....	14
4. Means of Funding Employee Stock Option Plans.....	15
5. Financial Signaling.....	16
6. Liquidity Support.....	17
C. The Regulation of Repurchases.....	18
1. Disclosure Requirements.....	18
2. Stock Manipulation Liability and the Rule 10b-18 Safe Harbor	20
3. Insider Trading Liability and Rule 10b-5.....	21
III. REPURCHASES: INSIDER TRADING AGAINST THE FIRM'S OWN SHAREHOLDERS.....	22
A. The Insider-Trading Effect of a Repurchase	23
B. Managers' Use of Repurchases for Informed Trading.....	27
1. Managers' Incentive to Use Repurchases for Informed Trading.....	27
2. Evidence Managers Use Repurchases for Informed Trading.....	30
(a) Managers' Behavior and Statements.....	30
(b) Stock Price Movements	33
3. Why the Currently Required Repurchase Announcement Does Not Fully Eliminate Underpricing.....	36
C. Misleading Repurchase Announcements.....	37
D. Might Information-Based Repurchases Actually Benefit Public Shareholders?	41
1. The Illusion that Selling Shareholders Benefit.....	42
2. The Actual Effect on Selling Shareholders	43
(a) Ex Post vs. Ex Ante Sale Prices.....	44
(b) The Bid-Ask Spread	47
3. The Effect on Public Shareholders as a Group.....	50
IV. ADDITIONAL COSTS TO SHAREHOLDERS.....	51
A. Payout Distortions	52
1. Cash Hoarding.....	52
2. Cash Squandering.....	55
3. Do Repurchases Induce Managers to Distribute Excess Cash?	57
B. Managers' Other Perverse Incentives.....	60
1. Reduced and Delayed Disclosure	60
2. Distorted Choice of Projects.....	61

C. Inferring the Desirability of Information-Based Repurchases from Announcement Returns.....	61
1. Ex Ante Costs	62
2. Ex Post Costs.....	63
V. USING ADVANCE DISCLOSURE TO REDUCE INFORMATION-BASED REPURCHASING.....	64
A. The Advance Disclosure Rule.....	65
B. The Benefits of Advance Disclosure	68
1. How Advance Disclosure Reduces Information-based Repurchase Profits.....	68
2. Advance Disclosure's Effect on Payout, Disclosure and Investment Distortions.....	72
C. The Costs of Advance Disclosure	73
VI. CONCLUSION	74

I. INTRODUCTION

Public companies in the United States and elsewhere are increasingly using open market repurchases, rather than dividends, to distribute cash to shareholders. Although scholars have focused on the possible benefits of repurchases for shareholders, little attention has been paid to their potential costs. This paper shows that the use of repurchases is likely to generate substantial costs for public shareholders. In particular, managers' use of inside information to repurchase shares at a bargain price is likely to systematically transfer value from public shareholders as well as distort managers' payout, disclosure, and investment decisions. The paper also proposes that a repurchasing firm be required to disclose in advance its buy orders. Such a pre-repurchase disclosure rule, the paper shows, would reduce the economic costs associated with share buybacks without undermining any of their potential benefits.¹

Publicly traded U.S. firms distribute between \$300 to 400 billion each year to their own shareholders.² Because capital markets are not perfect and borrowing is not costless, these payouts increase shareholders' ability to fund other ventures, while reducing managers' ability to invest in their firms. Managers' payout decisions can therefore have a substantial effect on total shareholder value and the allocation of capital economy-wide.

Managers have two options for paying out cash to shareholders: dividends and share repurchases. Over the last twenty years, the use of share repurchases to distribute cash has grown substantially in the United States, increasing from \$1.4 billion in 1980 to \$170 billion in 2000.³ In the latter year,

¹ This paper is part of a larger project on the use of share repurchases by public firms. See Jesse M. Fried, *Insider Signaling and Insider Trading with Repurchase Tender Offers*, 67 U. CHI. L. REV. 421 (2000) (showing that managers' behavior is consistent with the use of repurchase tender offers for insider trading rather than signaling) [hereinafter Fried (2000)]; Jesse M. Fried, *Open Market Share Repurchases: Signaling or Managerial Opportunism?*, 2 THEORETICAL INQUIRIES L. 865 (2001) (criticizing the signaling explanation for open market repurchases) [hereinafter Fried (2001)].

² See Franklin Allen & Roni Michaely, *Payout Policy* (2001) (working paper).

³ Robert Luke, *Stock Buybacks Can Signal Shares Are a Bargain*, ATLANTA J. & CONST. Dec. 29, 2001, at (citing Thomson Financial); Gustavo Grullon & David L. Ikenberry, *What Do We Know About Stock Repurchases?*, 13 J. APPLIED CORP. FIN. 31, 33 (2000); Scott Weisbenner, *Corporate Share Repurchases in the 1990's: What Role do Stock Options Play?*

more than 50 percent of the cash paid out by publicly traded firms was distributed through share repurchases.⁴ These repurchases generally take the form of open market repurchases (“OMRs”), in which the corporation uses a broker to buy its own stock on the market over an extended period of time.⁵

The explosive growth of repurchases has attracted considerable attention from financial economists.⁶ These economists have generally started

(Apr. 2000) (Fed. Reserve Sys., Fin & Econ. Discussion Series paper No. 2000-29). More recently, as other countries have begun removing tax and regulatory impediments to share repurchases, the use of buybacks outside the United States has also dramatically increased. See, e.g., Peter Goldstein, *European Concerns Start to Warm Up to Share Buybacks: Firms Seek Outlets for Cash As Earnings Improve, Interests Rates Decline*, WALL ST. J. EUR., June 23, 1998, at 17 (noting that announced European buyback plans increased to \$42.7 billion in 1997 from \$14.2 billion in 1996, in response to current and anticipated liberalizing of share repurchase laws).

⁴ See Gustavo Grullon & Roni Michaely, *The Information Content of Share Repurchase Programs*, 54 J. FIN. 651, 651 (2004) The focus of this paper is on repurchases of publicly traded shares by operating firms. The paper does not discuss the repurchase of shares from select shareholders (including greenmail). It also does not address repurchases by closed-end investment funds, which raise different issues and are governed by a different set of regulations. See TAMAR FRANKEL, 3 THE REGULATION OF MONEY MANAGERS, MUTUAL FUNDS, AND ADVISERS, ch. 26 § 26.03 (2nd ed. 2003) (discussing closed-end investment companies selling and repurchasing their securities).

⁵ See Grullon & Ikenberry, *supra* note 3, at 33-34. Most of the remaining repurchases take the form of a repurchase tender offer (“RTO”), in which the corporation makes a time-limited offer to purchase a specified number of shares, usually at a premium over the market price. See generally Fried (2000), *supra* note 1. For analysis of the RTOs in the financial economics literature, see Laurie Bagwell, *Dutch Auction Repurchases: An Analysis of Shareholder Homogeneity*, 47 J. FIN. 71 (1992); Laurie Simon Bagwell & John Shoven, *Cash Distributions to Shareholders*, 3 J. ECON. PERSPECTIVES 129 (1989); Robert Comment & Gregg A. Jarrell, *The Relative Signaling Power of Dutch Auction and Fixed Price Self-Tender Offers and Open Market Share Repurchases*, 46 J. FIN. 1243 (1991); Erik Lie & John J. McConnell, *Earnings Signals in Fixed-Price and Dutch Auction Self-Tender Offers*, 49 J. FIN. ECON. 161 (1998); T. Nohel & V. Tarhan, *Share Repurchases and Firm Performance: New Evidence on the Agency Costs of Free Cash Flow*, 49 J. FIN. ECON. 187 (1998); Theo Vermaelen, *Repurchase Tender Offers, Signaling, and Managerial Incentives*, 19 J. FIN. & QUANT. ANALYSIS 163 (1984).

⁶ See, e.g., Michael J. Barclay & Clifford W. Smith, *Shareholder Heterogeneity: Evidence and Implications*, 22 J. FIN. CON. 61 (1988); E. Bartov, *Open-Market Stock Repurchase as Signals for Earnings and Risk Changes*, J. ACCT. & ECON. 275 (1991); F. H. Buckley, *When the Medium is the Message: Corporate Buybacks as Signals*, 65 IND. L. J. 493, 539 (1990); Konan Chan et al., *Do Managers Knowingly Repurchase Stock on the Open Market?* (2000) (working paper); Bhagwan Chowdhry & Vikram Nanda, *Repurchase Premia as a Reason for Dividends: A Dynamic Model of Corporate payout Policies*, 7 REV. FIN. STUDIES 321 (1994) (arguing that dividends allow corporations to distribute cash more cheaply when the stock is overvalued); Harry DeAngelo, Linda DeAngelo & Douglas J.

with the assumption that managers use repurchases to increase shareholder value, and sought to identify the possible benefits of repurchases for shareholders. Among these possible benefits are the ability of repurchases to: (1) distribute excess cash in a more tax efficient manner than dividends; (2) lower shareholder transaction costs; (3) provide the firm with greater financial flexibility; (4) serve as a signaling mechanism; (5) create additional liquidity; and (6) acquire shares to “fund” employee stock option plans. However, little attention has been paid to the potential economic costs of using repurchases, rather than dividends, to distribute cash.

This paper identifies the economic costs associated with using repurchases to distribute cash to shareholders. I begin by showing that a repurchase is economically equivalent to a two-part transaction in which (1) non-selling shareholders buy shares directly from selling shareholders at the

Skinner, __ ; George Fenn & Nellie Liang, *Corporate payout Policy and Managerial Stock Incentives*, 60 J. FIN. ECON. 45 (2001); Gustavo Grullon & Roni Michaely, *Dividends, Share Repurchases, and the Substitution Hypothesis*, 57 J. FIN. 1649 (2002); Gustavo Grullon & Roni Michaely, *The Information Content of Share Repurchase Programs*, 54 J. FIN. 651 (2004); Grullon & Ikenberry, *supra* note 3; Guay & Harford, __ ; David Ikenberry et al., *Market Underreaction to Open Market Share Repurchases*, 39 J. FIN. ECON. 181 (1995) [hereinafter Ikenberry et al. (1995)]; David Ikenberry et al., *Share Repurchases in Canada: Performance and Strategic Trading*, 55 J. FIN. 2373 (2004); Murali Jagannathan et al., *Financial Flexibility and the Choice Between Dividends and Stock Repurchases*, 57 J. FIN. ECON. 355 (1999); Murali Jagannathan & Clifford Stephens, *Motives for Multiple Open-Market Repurchase Programs*, 32 FIN. MGMT. 72 (2003); Christine Jolls, *The Role of Incentive Compensation in Explaining the Stock Repurchase Puzzle*, (1998) (NBER Working paper No. 6467); Kathleen M. Kahle, *When a Buyback Isn't a Buyback: Open Market Repurchases and Employee Options*, 63 J. FIN. ECON. 235 (2002); Robert M. Lawless et al., *The Influence of Legal Liability on Corporate Financial Signaling*, 23 J. CORP. LAW 209 (1998); Aharon R. Ofer & Anjan V. Thakor, *A Theory of Stock Price Responses to Alternative Corporate Cash Disbursement Methods: Stock Repurchases and Dividends*, 42 J. FIN. 365 (1987); R. Richardson Pettit et al., *Do Corporate Managers Circumvent Insider Trading Regulations? The Case of Stock Repurchases*, 7 REV. QUANTITATIVE FIN. & ACCT. 81 (1996); Elias Raad & H. K. Wu, *Insider Trading Effects on Stock Returns Around Open-Market Repurchase Announcement: An Empirical Study*, 18 J. FIN. RES. 45, 57 (1995); Clifford Stephens & Michael Weisbach, *Actual Share Reacquisitions in Open Market Repurchases Programs*, 53 J. FIN. 313 (1988); Weisbenner, *supra* note 3; J. Fred Weston & Juan A. Siu, *The Demise of Share Repurchases*, working paper (July 21, 2003), p. 4; Nikos Vafeas, *Determinants of the Choice between Alternative Share Repurchase Methods*, 12 J. ACCOUNTING, AUDITING & FIN. 101 (1997); Theo Vermaelen, *Common Stock Repurchases and Market Signalling*, 9 J. FIN. ECON. 139 (1981); J. Fred Weston & Juan A. Siu, *Changing Motives for Share Repurchases* (Dec. 19, 2003) (UCLA Anderson School of Business paper No. 3-03), available at <http://repositories.cdlib.org/anderson/fin/3-03>.

repurchase price,⁷ and (2) the firm issues a dividend. Thus, a repurchase effectively combines a payout from the firm and a transfer of ownership at the shareholder level.

Because a repurchase effectively causes non-selling shareholders to buy stock from selling shareholders at the repurchase price, managers can use repurchases to exploit their inside information. In particular, managers with inside information indicating that the stock is underpriced can use a repurchase to buy stock indirectly for themselves and other remaining shareholders at a bargain price. Indeed, there is considerable evidence that managers use inside information to time repurchases, systematically transferring value from public shareholders to themselves.

The fact that managers use inside information in repurchasing shares should not be surprising. It is well known that managers frequently employ inside information to improve the profitability of their own trading. For example, managers are often observed buying in advance of good news and selling before the release of bad news.⁸ However, there are often constraints on managers' ability to buy shares for their own accounts when they know the stock is underpriced. Repurchases thus can enable managers to accomplish indirectly what they cannot achieve directly.

There is, however, an important difference between managers' own trading and repurchases. Unlike managers' personal buying and selling, repurchases require use of the firm's capital. Thus, unlike personal trading, managers' use of repurchases to exploit their informational advantage directly affects the firm's payout policy.

The paper shows that repurchases, by tying cash distributions to stock mispricing, can distort managers' payout decisions, causing payout policy to deviate from what would maximize value for shareholders as a group. Tying the firm's cash distributions to the stock price can lead to two types of payout distortions. First, managers able to use repurchases for information-based

⁷ Of course, shareholders may sell some but not all of their shares during a repurchase. For ease of exposition, however, I will assume throughout this paper that the shareholders who sell stock back to the corporation dispose of all of their shares in the transaction. This assumption does not affect the analysis.

⁸ Much of this insider trading may well be legal. Under the securities laws, trading on inside information is illegal only if the information is considered "material," which courts have interpreted relatively narrowly. See *infra* Part II.C.3.

trading may have an incentive to delay paying out cash that, from the perspective of shareholders as a group, should be distributed currently. In particular, when the stock is either correctly priced or overpriced, managers who believe the stock is likely to become underpriced might have an incentive to retain cash even when it could generate higher returns outside the firm. Second, managers whose inside information indicates the stock is a great bargain may have an incentive to buy stock with cash that should be invested in the firm. In both cases, managers' ability to use inside information to time repurchases leads them to make payout decisions that, from the perspective of shareholders as a group, are undesirable. These adverse effects on the firm's payout policy can further reduce public shareholders' returns.

Because managers can use repurchases to exploit their informational advantage only when there is a gap between the price of the stock and its actual value, the use of repurchases gives managers an incentive to increase information asymmetry between themselves and public shareholders. By delaying the disclosure of good news as well as by taking steps that make the firm's activities less transparent to shareholders, managers can boost their profits from bargain repurchases. Bargain repurchasing therefore not only distorts managers' payout decisions but also gives them an incentive to delay or reduce disclosure of information in order to maximize their informational advantage over public shareholders.

The paper also explains why the use of informationally-driven repurchases can cause managers to announce repurchases they have no intention of conducting. Under stock exchange rules, a firm intending to initiate a repurchase program must publicly announce its intention to do so. However, such an announcement does not obligate the firm to repurchase any stock. Because many repurchases are conducted simply because managers know the stock price is low, a repurchase announcement signals the possibility that the stock is a bargain and boosts the price—even when the stock is not in fact underpriced. Thus, managers planning to *sell* shares have an incentive to announce a repurchase—even when they have no intention of buying back any stock. As the paper explains, such false signaling may enable them to sell their shares for more than they are actually worth, undermining the performance sensitivity of incentive compensation. The use of repurchase announcements to strategically boost the stock price before

selling might help explain two puzzling patterns associated with repurchases: (1) that many firms announcing repurchases do not repurchase a single share, and (2) that managers frequently sell shares around the time of these announcements.

Finally, informationally-driven repurchases can distort managers' choice of projects *ex ante*. Because managers can profit from bargain repurchases only when there is a gap between the price of the stock and its actual value, managers have an incentive to select projects that are more likely to give rise to exploitable gaps between the stock price and its actual value. As a result, managers might have an incentive to favor projects with highly volatile payoffs as well as projects that are more opaque, even when such projects are not best for shareholders. Such distortions to investment policy can make public shareholders as a group even worse off.

Curbing managers' ability to use repurchases to exploit their inside information would reduce the resulting payout, disclosure, and investment distortions. The paper proposes a rule aimed at reducing managers' ability to use inside information in timing repurchases: requiring firms to disclose their repurchase orders before they are executed by their brokers. Market participants would then use the disclosed repurchase orders to update their assessment of the stock's actual value, taking into account the firm's repurchase history, its financial condition, and managers' contemporaneous trading. To the extent the disclosure signals the possibility that the stock is underpriced, market participants will bid up the price of the stock before the repurchase order is executed, reducing managers' ability to profit from information asymmetry. Over time, these price adjustments will discourage managers from attempting to use inside information in their repurchase decisions, and thereby reduce the resulting payout, disclosure, and investment distortions. At the same time, requiring firms to disclose their repurchases in advance will not undermine the potential benefits of repurchases, such as their ability to lower shareholders' tax liabilities and transaction costs, provide greater financial flexibility for the firm, serve as a signaling mechanism, create additional liquidity, or acquire shares for employee stock option plans.

Before proceeding, I should emphasize that not all repurchases are informationally-motivated. A substantial number of repurchases may well be

undertaken for other reasons. However, many repurchases are used to buy stock at a bargain price, and even the prospect of being able to use repurchases to exploit inside information can lead to the payout, disclosure, and investment distortions I identify. The advantage of the pre-repurchase disclosure mechanism I propose is that it will reduce these distortions without affecting the use of repurchases for any value-creating purposes.

It is also worth noting that a share repurchase might boost the stock price—even if only temporarily—through a “price pressure” effect. To the extent the demand curve for a given stock slopes downward, the stock will trade at a price reflecting the value placed on it by its lowest-valuing (or “marginal”) shareholders. In the presence of such a downward-sloping demand curve, managers might be able to boost the trading price of the stock by repurchasing shares from the lowest-valuing shareholders. Managers’ ability to use repurchases to boost the stock price in this manner might further distort their payout decisions. In particular, managers may have an incentive to repurchase shares as they sell their own in order to be able to unload their shares at a higher price. They may do so even if the repurchase reduces aggregate shareholder returns by distributing cash better invested in the firm.

To focus on insider trading effects of repurchases, however, the paper abstracts from this potential payout distortion. It generally assumes that a stock trade at a price that reflects the market’s best estimate of their value, and that managers cannot boost the stock price simply by eliminating low-valuing shareholders. However, neither my analysis nor the desirability of pre-repurchase disclosure depends on these assumptions. Even if stock demand curves slope downward, managers still have the incentive and ability to use repurchases to exploit their inside information, leading to the distortions I identify. And pre-repurchase disclosure would still reduce managers’ ability to profit from informationally-driven repurchases, and thus the magnitude of the resulting distortions.

The remainder of the paper is organized as follows. Part II describes the importance of corporate payout policy and the growing use of repurchases. It then identifies the potential economic benefits of repurchases to shareholders and describes how repurchases are currently regulated. Part III begins by showing that a repurchase is economically equivalent to a

dividend payment coupled with direct trading between selling shareholders and managers and other non-selling shareholders. It explains how managers can use repurchases to exploit their inside information and provides evidence that managers in fact frequently do so. It also explains how managers use repurchase announcement to boost the stock price before selling their own shares and presents evidence consistent with their doing so. Part III concludes by considering the possibility that the widespread use of informationally-driven repurchases actually benefits selling shareholders by causing repurchase announcements to boost the stock price, enabling these shareholders to sell their shares at a higher price. It shows that while the use of inside information to time repurchases does indeed benefit selling shareholders in certain situations—specifically, when managers announce repurchases—it makes selling shareholders and public shareholders as a group worse off ex ante. Part IV describes and systematically analyzes the additional costs that may arise from informationally-driven repurchases: distorted payout policy, reduced disclosure, and misinvestment. It also explains why the effect of repurchases on public shareholders cannot accurately be gauged by the stock market’s reaction to repurchase announcements. Part V puts forward the advance disclosure approach to regulating buybacks and explains its operation. Part VI concludes.

II. THE USE, BENEFITS, AND CURRENT REGULATION OF REPURCHASES

Part II.A begins by discussing the importance of a firm’s payout policy and the increasing popularity of share repurchases as a means of distributing cash to shareholders. Part II.B describes the possible economic benefits repurchases can provide to a firm and its shareholders. Part II.C explains how repurchases are currently regulated.

A. Corporate Payout Policy and the Increasing Use of Repurchases

Publicly traded U.S. firms generate tens of billions of dollars in earnings annually. Each year, these firms’ managers must decide how much retained earnings should be distributed to shareholders. In 2002, managers of

U.S. firms distributed \$300 to \$400 billion to their own shareholders through dividends and share repurchases.

In a world of perfect capital markets, both corporations and their shareholders could obtain financing for any project with a positive net present value. In such a world, the ability of a firm to invest in desirable projects would not depend on how much cash it currently has. If the firm required additional funding for such projects, it could easily tap the equity or debt markets for the necessary capital. Similarly, shareholders' ability to invest in good projects outside the firm would not depend on how much cash they have.

However, capital markets are not perfect. A firm cannot always obtain outside financing for projects with positive net present value. Neither can shareholders. Thus, payout decisions affect both the firm's ability to fund existing and new projects as well as shareholders' ability to invest in ventures outside of the firm. Payout decisions also affect firm leverage, which in turn might affect firm value. Thus, payout policy has a substantial effect on total shareholder return—the returns earned by shareholders as a group, through their investment in the firm and other ventures.

From the perspective of shareholders as a group, the optimal payout policy is one that maximizes total shareholder value—the combined value of the shareholders' equity interests in the firm and their investments outside the firm. Under such a policy, the firm would distribute \$1 to shareholders if and only if, on the margin, distributing \$1 boosts the value of their other investments by more than it reduces the equity value of the firm. When a marginal \$1 would generate a return of 15 percent in the firm and 10 percent outside the firm, shareholders would prefer the \$1 to remain in the firm. If, on the other hand, \$1 would generate a return of only 5 percent if left in the firm, shareholder value would be maximized by distributing that \$1.

Managers must decide not only how much cash should be distributed to shareholders but also the manner in which the cash should be paid out: whether through dividends or share repurchases (or both). Over the last several decades, many firms have begun using repurchases as their exclusive means of distributing cash; the percentage of firms initiating distributions with repurchases rather than dividends has increased from 27 percent in 1973

to 81 percent in 1998.⁹ In addition, traditionally dividend-paying firms have increased their use of repurchases dramatically while raising their dividends at a much slower rate.¹⁰ As a result, the use of share repurchases to distribute cash has increased substantially in the United States in both relative and absolute terms. While in 1980, there were \$14 of share repurchases for every \$100 of dividends, by 1998 the ratio was almost one-to-one. During these two decades, the volume of share repurchases increased from \$1.4 billion to over \$200 billion.¹¹

Share repurchase can take the form either of an open market repurchase (“OMR”), in which the firm buys back its own stock on the open market (through a broker) or of a repurchase tender offer (“RTO”).¹² The focus of this paper is on OMRs, which are used to repurchase 90 to 95 percent of the total amount of shares repurchased annually.¹³ Firms announcing OMRs and disclosing the amount of shares targeted indicate that they might buy up to (on average) 7 percent of their outstanding shares.¹⁴ Not all of these firms actually repurchase shares. In fact, many do not repurchase a single

⁹ See Gustavo Grullon & Roni Michaely, *Dividends, Share Repurchases, and the Substitution Hypothesis*, 57 J. FIN. 1649 (2002).

¹⁰ *Id.* See also Eugene F. Fama & Kenneth R. French, *Disappearing Dividends: Changing Firm Characteristics or Lower Propensity to pay*, 14 J. APPLIED CORP. FIN. 67 (2001) (finding a lower propensity to pay dividends among public firms).

¹¹ See Grullon & Ikenberry; *supra* note 3; Weisbenner, *supra* note 3. One explanation for the increase in use of repurchases at the expense of dividends is the structure of incentive compensation. See Jolls, *supra* note 6; Weisbenner, *supra* note 3. George W. Fenn & Nellie Lang, *Corporate Payout Policy and Managerial Stock Incentives*, 60 J. FIN. ECON. 45 (2001). Managers have received a large fraction of their compensation in the form of options, most of which are issued with a fixed strike price. When a stock goes ex-dividend, total firm value falls by the amount of the dividends, and the stock price decreases, reducing the value of managers’ options. A repurchase of the same amount also reduces total firm value, but there is a corresponding reduction in the number of shares outstanding. Thus, a share repurchase will have a less detrimental effect on the value of managers’ options than a dividend. Moreover, to the extent the repurchase is at a bargain price, it will increase the options’ value.

¹² See *supra* note x.

¹³ Grullon & Ikenberry, *supra* note 3 (reporting that over the period 1980 – 1999, open-market programs comprised about 92 percent of the total share repurchase announcements and 91 percent of the total value of all repurchase announcements).

¹⁴ See Ikenberry et al. (1995), *supra* note 6, at 185 (reporting that the average percentage of outstanding shares sought in all of the open market repurchases announced between January 1980 and December 1990 by firms listed on the ASE, NYSE, and NASDAQ was 6.6 percent).

share. Those firms conducting OMRs usually complete them over periods ranging from several months to several years.¹⁵ Companies announcing OMRs and disclosing the repurchase target buy back, on average, 70 to 80 percent of the targeted number of shares.¹⁶

B. The Potential Benefits of Repurchases to Shareholders

Both academics and market commentators have widely viewed the increase in the use of repurchases as beneficial for shareholders. Repurchases are considered to provide a number of benefits to firms and their shareholders: (1) a more tax-efficient method of distributing excess cash; (2) lower transaction costs than dividends; (3) greater financial flexibility for the firm; (4) a means of acquiring shares needed for employee stock option plans; (5) a mechanism for credibly signaling that the stock is underpriced; and (6) a means to improve liquidity. I describe each of these potential benefits below.

Before proceeding, however, I wish to make clear that I am not claiming that repurchases in fact provide all of these benefits. Indeed, I am skeptical about the magnitude (and in some cases, even the existence) of some of these benefits. Rather, my purpose here is simply to describe the benefits that other commentators have attributed to repurchases. In Part V, I will show that, even if repurchases were to provide all these benefits, the pre-repurchase disclosure requirement I propose for share repurchases would not impair any of them.

1. Tax Efficient Distribution of Excess Cash

From shareholders' perspective, managers should distribute "excess cash"—cash that can earn higher returns for shareholders outside the firm—in the most tax-efficient manner possible. The first potential shareholder-level benefit of repurchases is that they can provide a more tax-efficient means of distributing excess cash.¹⁷

¹⁵ See Stephens & Weisbach, *supra* note 6. In contrast, RTOs, which target twice as many shares, are completed within one month. See Fried (2000), *supra* note 1.

¹⁶ See Stephens & Weisbach, *supra* note 6, at 314.

¹⁷ See, e.g., William W. Bratton, *The New Dividend Puzzle*, 2004 working paper, p.

Unless a shareholder is tax exempt, she pays tax when she receives a dividend or sells her shares (for a profit).¹⁸ Historically, profits on the sale of shares have been taxed far less heavily than dividends. Before the recent dividend tax cut, the highest marginal rate at which dividends were taxed at the federal level was 39.6 percent. In contrast, the highest marginal rate at which long-term capital gains were taxed at the federal level was 15 percent.¹⁹ The dividend tax cut lowered the highest federal rate on dividends to 15 percent, the same as the long-term capital gains rate. Even after the recent dividend tax cut, gains on the sale of stock are still taxed less heavily than dividends, although the gap has narrowed significantly. There are two reasons why repurchases are still more tax efficient for shareholders than dividends.

First, while all taxable shareholders are taxed when the firm issues a dividend, only selling shareholders are taxed when the firm distributes cash through a repurchase. When a firm issues a dividend, all shareholders receive their pro-rata share of the dividend and all taxable shareholders are taxed on the amount of the dividend they receive. In contrast, when the firm repurchases shares, shareholders who wish to avoid a current tax liability can simply abstain from selling. Only those shareholders who choose to sell their shares are taxed. Shareholders who would otherwise pay a relatively high marginal tax can thus avoid any current tax liability, shifting the tax liability to other, less highly taxed shareholders. By allowing shareholders as a group

12.

¹⁸ There is a dividends-received deduction for firms that own over 80 percent of the stock of the firm issuing the dividend. For an 80 percent shareholder, dividend income is tax-free.

¹⁹ Short-term capital gains are taxed federally at ordinary income rates. There is evidence suggesting that the relatively unfavorable treatment of dividends was responsible, at least in part, for the increasing use of share repurchases. See Fama & French, *supra* note 12 (claiming that the decline in propensity among firms to pay dividends is due to tax reasons). For evidence that the decision to repurchase shares, rather than issue dividends, is partially tax-driven, see Indudeep S. Chhachhi & Wallace N. Davidson III, *A Comparison of the Market Reaction to Specially Designated Dividends and Tender Offer Stock Repurchases*, 26 FIN. MGMT. 89, 93-94 (1997). Erik Lie & Heidi Lie, *The Role of Personal Taxes in Corporate Decisions: An Empirical Analysis of Share Repurchases and Dividends*, 34 J. FIN. QUANTITATIVE ANALYSIS 533, 550 (1999) (finding “that shareholder tax implications affect how firms distribute cash to shareholders”).

to shift tax liability to less highly taxed shareholders, repurchases can reduce the aggregate tax burden on shareholders.

Second, repurchases reduce the tax burden on shareholders by enabling tax-free recovery of basis. A shareholder receiving a dividend is taxed on the entire amount. For example, a shareholder who receives a \$100 dividend must pay tax on \$100 of income. By contrast, a selling shareholder is not taxed on the full amount of the sale price, but rather only on the capital gains (the difference between the sale proceeds and the shareholder's cost basis in the stock). For example, a shareholder who sells \$100 worth of shares that were purchased for (say) \$60 pays tax on only \$40. The tax-free recovery of basis, together with the tax-shifting effect, thus make repurchases more tax efficient than dividends.

2. Lower Transaction Costs

A second potential shareholder-level benefit of repurchases is that they might reduce shareholders' transaction costs. At any given point in time, there are two groups of shareholders: those seeking liquidity (that is, to convert shares into cash) and those not. Some economists have argued that distributing cash through a repurchase instead of a dividend might reduce the transaction costs borne collectively by these two groups of shareholders.²⁰

Their argument is as follows. Suppose all shareholders receive a dividend. The liquidity-seeking group gets what it wants, cash. However, if (as is likely) the dividend is not sufficient to meet all their liquidity needs, these shareholders must incur the transaction costs of selling shares to get the desired amount of cash. Shareholders not seeking liquidity must also incur the transaction costs of reinvesting the dividend in the stock of the issuing (or another) firm. As a result, both groups of shareholders are likely to bear transaction costs when the firm issues a dividend.

Now suppose that, instead of issuing a dividend, the firm repurchases shares. Those non-liquidity-seeking shareholders do not receive any cash because they do not sell their shares. Thus, they need not incur transaction costs reinvesting the cash. Liquidity-seeking shareholders can sell stock,

²⁰ See Edwin Elton & Martin Gruber, *The Effect of Share Repurchase on the Value of the Firm*, 23 J. FIN. 135 (1968).

which they may well have done even had the firm issued a dividend. Thus, goes the argument, a repurchase eliminates transaction costs for one set of shareholders—those not seeking liquidity—while only marginally increasing transaction costs for the other—those seeking liquidity by selling shares.²¹

3. Greater Financial Flexibility for the Firm

Repurchases are said to benefit firms by providing more financial flexibility than dividends. Paying a dividend, some scholars contend, implies to the market a commitment by the firm to continue to pay such dividends in the future.²² Thus, managers faced with a one-time need to distribute cash might be reluctant to issue a dividend; distributing cash in that form might falsely raise investors' expectations about the firm's future payments.²³

A repurchase, however, carries no such message. Investors understand that a repurchase announcement does not commit the firm to purchase even a single share, let alone commit the firm to repurchase shares indefinitely. A repurchase announcement is therefore much less likely than a dividend announcement to falsely raise investors' hopes about the firm's future payouts. As a result, firms with transient, positive-cash-flow shocks will prefer to use repurchases, instead of dividends, to distribute the cash.²⁴ To the

²¹ I am very skeptical of this transaction-cost-savings benefit, especially in the United States, where shareholders of most firms can reinvest dividends without charge, through dividend reinvestment programs. In addition, the analysis ignores the large amount of additional transaction costs incurred by the firm and its shareholders when cash is distributed through repurchases, including the bid-ask spread and brokerage fees. Individuals also appear to prefer the regularity of dividends. Indeed, it is widely believed that individuals prefer dividends to repurchases, even though repurchases are tax-advantaged. See Alon Brav, John R. Graham, Campbell R. Harvey, and Roni Michaely, *Payout Policy in the 21st Century 11*, working paper (2004).

²² There is a considerable literature explaining how firms that initiate or increase dividends send a signal to the market that long-term cash flows have increased. See, e.g., DeAngelo et al. (2000), *supra* note 6. But see Gustavo et al., *Dividend Changes Do Not Signal Changes in Future Profitability* (2003) (working paper).

²³ I am skeptical about this benefit of repurchases because for many years firms have distributed cash through so-called "special dividends." These are one-time (or infrequent) dividends issued by a firm, with an indication that the firm has no current plans to make any such payouts in the future. See also Bratton, *supra* note 7.

²⁴ See Guay & Harford, *supra* note 6; DeAngelo et al., *supra* note 6; Jagannathan et al., *supra* note 6 (finding that firms that pay dividends have more stable earnings than firms that use repurchases and concluding that firms use repurchases to pay out

extent that a firm would not have used a dividend to distribute transient, excess cash, a repurchase can provide a useful means for paying out that cash.²⁵

4. Means of Funding Employee Stock Option Plans

The second potential firm-level benefit provided by repurchases is that they enable firms to “fund” employee stock option programs, which have become increasingly popular. During the past decade, the majority of executive compensation has come in the form of stock options. Options are also widely used to compensate and motivate employees lower down in the ranks. Under these plans, employees are given options to buy the firm’s stock at a certain strike price (usually equal to the grant-date market price). The options cannot be exercised until the end of the vesting period. When they are exercised, the firm must give the exercising employee shares. The employee then typically sells their shares in the market.

In principle, a firm could simply issue new shares for its employee stock option program, up to the number of shares authorized in its charter. If the firm reached the maximum number of shares authorized by its charter, the board can ask shareholders to vote to amend the charter to increase the number of authorized shares and thereby permit the issuance of additional shares. Presumably, shareholders would approve an increase in the number of authorized shares if they believed that stock option plans increased shareholder value.

However, for purposes of this paper I am willing to assume that managers might prefer either not to increase the number of shares outstanding or, at least, to slow the increase in number of shares outstanding. If employee stock option programs are beneficial and managers would otherwise underutilize them because of their effect on the number of outstanding shares, a repurchase might provide a benefit by allowing the firm

transitory earnings while dividends are used to payout permanent earnings). *But see* Amy K. Dittmar & Robert F. Dittmar, *Stock Repurchase Waves: An Explanation of Trends in Aggregate Corporate Policy* (2002) (working paper) (finding that repurchases and dividends are seen by firms as substitutions for distributing permanent earnings).

²⁵ For a skeptical view of this benefit of repurchases, see William W. Bratton, *The New Dividend Puzzle*, working paper (2004), p. 42-43.

to buy shares in the market, over time, which they can use to run these option programs.²⁶

5. Financial Signaling

Economists have long argued that managers can use repurchases to signal that their firm's stock is underpriced. Specifically, managers who have private information indicating that the stock is underpriced and wish to signal credibly that the stock is underpriced can do so by having the firm conduct a repurchase, while committing not to sell their own shares.²⁷

In theory, repurchases can be used to signal credibly that the stock is worth more than the repurchase price. As Part II.B explained, share repurchase is economically equivalent to a transaction in which remaining shareholders collectively buy shares directly from the selling shareholders at the repurchase price. Accordingly, managers who make a double commitment—first, to have the firm repurchase shares and, second not sell their own shares until the underlying good news emerges—effectively commit to buy their pro-rata share of the repurchased shares at the repurchase price. If firm value is in fact less than the repurchase price, the repurchase makes managers worse off by causing them to overpay for the shares.²⁸ Thus, by committing to repurchase shares and to not sell their own

²⁶ Indeed, there is some evidence of a connection between repurchases and the use of employee stock options. In particular, the number of shares repurchased by firms is correlated to the number of exercisable employee options. See Kahle, *supra* note 6, at 5. Weisbenner finds that the total amount of options outstanding is correlated with repurchase activity. Weisbenner, *supra* note 3; Kenneth J. Klassen & Ranjini Sivakumar, *Stock Repurchases Associated with Stock Options do Represent Dollars out of Shareholders' Wallets* (2000) (working paper) (finding that total options outstanding can explain repurchase activity). Cf. Jolls, *supra* note 6 (finding no evidence that total outstanding options affect likelihood of repurchase). Repurchases might also enable the firm to hedge, on behalf of shareholders, against the possibility that a large amount of value will be transferred to employees in the event of a sharp increase in the stock price. See Daniel A. Rogers, *Repurchases, Employee Stock Option Grants, and Hedging*, working paper (Feb. 2004). For the argument that repurchases can obscure the costs of option compensation, see William W. Bratton, *The New Dividend Puzzle*, working paper (2004), p. 39.

²⁷ See, e.g., Buckley, *supra* note 6, at 539.

²⁸ By distributing cash, the repurchase also increases risk to the firm, imposing an additional risk-bearing cost on managers. See William J. McNally, *Open Market Stock Repurchase Signaling*, 28 FIN. MAN. 55, 56 (1999).

shares, managers send a credible signal that firm value exceeds the repurchase price.²⁹ A dividend, conversely, cannot be used to send such a signal.

6. Liquidity Support

Some economists have argued that repurchases can benefit shareholders by improving liquidity, the costs incurred by shareholders in buying and selling shares. These costs depend primarily on the bid-ask spread, which is the difference between the price market makers are willing to buy shares (the bid price) and the price they are willing to sell shares (the ask price).

There are two ways in which repurchases might be able to reduce the bid-ask spread: (1) through a “competing market maker effect” and (2) through an “inventory holding cost effect.”³⁰ Under the first, the firm induces market makers to raise their bid prices by offering to buy shares at a price higher than that offered by the market makers.³¹ Under the second, the increase in trading volume resulting from the repurchase makes it easier for the dealer to reverse

²⁹ See *id.* For a critique of the signaling theory, see Fried (2001), *supra* note 1; Ok-Rial Song, *Hidden Social Costs of Open Market Share Repurchases*, 27 J. CORP. L. 425 (2002). Economists have developed other signaling theories to explain why firms conduct repurchases, some of which acknowledge that repurchase announcements do not actually commit the firm to buy back shares. See, e.g., Jacob Oded, *Why Do Firms Announce Open Repurchase Programs?*, Boston University working paper (2001) (presenting a model in which “bad” firms do not announce repurchases because managers, who seek to maximize shareholder wealth, determine the benefits to long-term shareholders is less than the short-run cost to selling shareholders from the increase in the bid-ask spread); Nobuyuki Isagawa, *Open Market Repurchase Announcements and Stock Price Behavior in Inefficient Markets*, 31 FIN MGMT. 5 (2002) (presenting a model in which “bad” firms do not announce repurchases because the stock price reaction will eliminate insider trading profits but rather buy shares without making such an announcement; meanwhile, good firms make the announcement because doing so allows them to buy more shares-- permitting them to make a greater profit--even though the announcement causes the stock price to rise, reducing profits per share). See also Jagannathan & Stephens, *supra* note 6, at 71, 73 (arguing that, like a dividend announcement, a repurchase could provide “earnings signaling” by indicating an improvement in cash flow). For empirical evidence suggesting that repurchasing firms actually underperform their peers in terms of profitability after the repurchase, see Grullon & Michaely, *supra* note 6.

³⁰ See ___ Singh et al., at 50-51.

³¹ See *id.*

a position in the stock, reducing the dealer's holding costs, which is one component of the bid ask spread.³²

C. The Regulation of Repurchases

I now describe the current regulatory framework that governs repurchases in the United States.³³ The three most important elements are: (1) stock exchange and securities law disclosure requirements; (2) the anti-manipulation provisions of the securities laws, including the Rule 10b-18 safe harbor; and (3) the insider trading prohibition under Rule 10b-5.

1. Disclosure Requirements

Under the rules of U.S. stock exchanges, firms are required to announce the establishment of open market buyback programs.³⁴ Such announcements are usually greeted favorably by the market and are associated with short-term “abnormal” (that is, market-adjusted) share price increases that averaged 3 to 4 percent in the 1980s,³⁵ and 1 to 2 percent in the 1990s.³⁶

In their quarterly public filings, firms are required to disclose, among other things, (1) the total number of shares repurchased during the previous

³² See *id.* To the extent that there is a downward-sloping demand curve, a repurchase can also boost the stock price by absorbing sell-side pressure. See Douglas O. Cook, Laurie Krigman & J. Chris Leach, *On the Timing and Execution of Open Market Repurchases*, 17 REV. FIN. STUD. 464 (2004); Jaemin Kim, *Buyback Trading of Open Market Repurchase Firms and the Return Volatility of Decline*, working paper (finding that repurchases can reduce price volatility when managers buy on dips, reducing total stock volatility and CAPM beta).

³³ For a survey of regulations elsewhere, see Jaemin Kim, Nikhil Varaiya, & Ralf Schremper, *Survey on Open Market Repurchase Regulations: Cross Country Examination of the Ten Largest Stock Markets*, working paper (2003).

³⁴ See Matthew J. Gardella, *Stock Buybacks: Legal Issues Under the Federal Securities Laws and Other Practical Considerations*, 13 INSIGHTS 2 (1999).

³⁵ See Ikenberry et al. (1995), *supra* note 6, at 190 (reporting that the average market reaction to OMR announcements in all of the OMRs announced between January 1980 and December 1990 by firms listed on the American Stock Exchange, New York Stock Exchange, and NASDAQ was 3.54 percent).

³⁶ See Kathleen Kahle, *supra* note 6 (finding that the average abnormal return around the announcement of open market repurchases by firms in the Execucomp database between 1991 and 1996 was 1.6 percent).

quarter; (2) the average price paid for those shares; (3) the number of shares that were purchased in the preceding quarter as part of a publicly announced plan; and (4) the maximum number of shares (or approximate dollar value) that may yet be repurchased under any share repurchase program.³⁷

However, a firm announcing a repurchase is not required to indicate the number of shares it intends to repurchase or the expiration date of the repurchase program. Many firms fail to announce either the targeted amount or the expiration date and some announce neither.³⁸ Even if the firm does volunteer a target repurchase amount, it will at the same time make clear that the number of shares actually repurchased will depend on market conditions.³⁹ Consequently, the firm is not obligated to repurchase any shares. As noted earlier, on average, firms announcing the number of shares to be repurchased target 7 percent of outstanding shares,⁴⁰ and these firms repurchase on average 70 to 80 percent of the targeted number of shares within three years of the repurchase announcement.⁴¹ However, a substantial number of corporations announcing OMRs never repurchase a single share.⁴²

³⁷ SEC Release Nos. 33-8335; 34-48766 (2003). Firms must also disclose the terms of any publicly announced share repurchase program, including (1) the date of announcement; (2) the specific share or dollar amount approved (if any); (3) the expiration date of the repurchase plan (if any); and (4) each share repurchase plan that has expired during the previous quarter, as well as those under which the firm does not intend to make any future purchases. *Id.*

³⁸ See Grullon & Ikenberry, *supra* note 3, at 38. Approximately 20 to 30 percent of firms do not announce the number of shares they plan to acquire. See Maxwell & Stephens, *supra* note 6, at 6 (reporting that 20 percent do not announce); Jagannathan et al., *supra* note 6, at 355-84.

³⁹ Cf. David Ikenberry & Theo Vermaelen, *The Option to Repurchase Stock*, 25 FIN. MGMT. 9 (1996) (conceiving repurchase announcements as an option to repurchase if the stock becomes underpriced).

⁴⁰ See Ikenberry et. al. (1995), *supra* note 6, at 185 (reporting that the average percentage of outstanding shares sought in all of the open market repurchases announced between January 1980 and December 1990 by firms listed on the ASE, NYSE, and NASDAQ was 6.6 percent).

⁴¹ See Stephens & Weisbach, *supra* note 6, at 314 (1998).

⁴² See *id.*

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

Corporations, like individuals, are subject to the anti-manipulation provisions of section 9(a)(2) of the 1934 Act. These provisions make it illegal to conduct a series of transactions creating actual or apparent active trading in a security, for the purpose of inducing the purchase or sale of the security. Buying one's own shares could be considered manipulative if the intent of the repurchase is to drive up the stock price by making it appear that there is unusually heavy demand for the stock. Thus, until about twenty years ago, many U.S. corporations declined to engage in large share repurchases.

In 1982, the SEC adopted Rule 10b-18,⁴³ which provides repurchasing firms a "safe harbor" from anti-manipulation liability under section 9(a)(2) when they repurchase their shares in accordance with the rule's "manner, timing, price, and volume" conditions.⁴⁴ Among other things, Rule 10b-18 generally requires a firm seeking the safe harbor to (1) limit the number of shares it purchases on the open market each day to 25 percent of the average daily trading volume of the previous month and (2) not offer a price that exceeds the highest independent bid or the last independent transaction price (if any), whichever is higher.⁴⁵ The rule went into effect in 1983 and appears to have led to a sharp increase in the volume of repurchases.⁴⁶

Interestingly, most firms have failed to comply strictly with the requirements of the Rule 10b-18 safe harbor.⁴⁷ However, they have tended to limit sharply the number of shares repurchased per day, in keeping with the "spirit" of the safe harbor.⁴⁸

⁴³ See 17 C.F.R. 240.10b-18 (1999).

⁴⁴ SEC Release No. 34-46980 (Dec. 10, 2002). The rule also provides that an issuer will not be liable under Rule 10b-5 *solely* by reason of the manner, timing, price, or volume of its repurchases, if the issuer repurchases its common stock in accordance with the safe harbor. SEC Release No. 33-8335; 34-48766 (____ 2003).

⁴⁵ Other requirements are that open market purchases must be (a) made through only one broker (per day); (b) at a time other than the last half hour of trading; and (c) after the opening transaction.

⁴⁶ See Grullon & Michaely, *supra* note 6, at 659 (reporting that the amount of repurchases had tripled one year after Rule 10b-18 was put in effect).

⁴⁷ See, e.g., Douglas O. Cook, Laurie Krigman, & J. Chris Leach, *An Analysis of SEC Guidelines for Executing Open Market Repurchases*, 76 J. BUS. 289, 291 (2003).

⁴⁸ *Id.*

3. Insider Trading Liability and Rule 10b-5

Corporations trading in their own shares are subject to the insider trading laws. The most important legal restriction on insider trading is Rule 10b-5, which was promulgated by the SEC under section 10 of the Securities Exchange Act of 1934.⁴⁹ Rule 10b-5 requires insiders—including the firm and its officers and directors—to refrain from trading in the firm’s shares while in possession of “material” nonpublic information regarding their value.⁵⁰

Although Rule 10b-5 prohibits a firm from repurchasing shares when managers know the stock is underpriced, there are likely to be many cases in which Rule 10b-5 cannot prevent managers from having the firm trade profitably on nonpublic information. Rule 10b-5 prohibits trading on inside information only when that information is legally “material.”⁵¹ However, internal projections and other forms of “soft” information are not considered legally material, even if the information is important and would be of great interest to investors.⁵² As a result, managers are free to have the firm trade and to conduct share repurchases without disclosing a wide range of valuable but inside information.⁵³ Moreover, courts have been reluctant to find even

⁴⁹ 17 C.F.R. § 240.10b5 (2000).

⁵⁰ See e.g., *McCormick v. Fund Am. Cos., Inc.*, 26 F.3d 869, 876 (9th Cir. 1994). (“The corporate issuer in possession of material nonpublic information, must, like other insiders in the same situation, disclose that information to its shareholders or refrain from trading with them.”); Fried (1998), *supra* note 1, at 330.

⁵¹ See *United States v. O’Hagan*, 521 U.S. 642, 643 (1997).

⁵² See Mitu Gulati, *When Corporate Managers Fear a Good Thing is Coming to an End: The Case of Interim Nondisclosure*, 46 UCLA L. REV. 675, 682 (1999) (reporting that recent case law and the SEC’s position is that companies are not obligated to disclose forecasts). For example, in *Walker v. Action Indus.*, 802 F.2d 703 (4th Cir. 1986), managers conducted a repurchase tender offer (RTO) for \$4.00 per share and three months later the market price rose to \$15.75. The court found that there was no violation of the securities laws even though at the time of the RTO there were undisclosed internal forecasts predicting a substantial increase in orders and sales.

⁵³ See Fried (1998), *supra* note X, at 310; ROBERT CLARK, *CORPORATE LAW* 507-08 (1986) (noting that managers may have access to bits of information that individually are not important enough to be considered legally material but which in aggregate are very valuable); Donald Langevoort, *Rereading Cady, Roberts: The Ideology and Practice of Insider Trading Regulation*, 99 COLUM. L. REV. 1319, 1335 (1999) (observing that “[i]nsiders at almost all times have the advantage of superior insight and a sense of which way things are going even if they do not possess a fact that a court would call material and nonpublic”).

non-soft information “material” unless it concerns a “bombshell event”—such as the definite existence of a takeover offer—whose announcement dramatically changes the stock price.⁵⁴ Thus, the threshold of materiality is such that insiders can easily profit by trading directly or indirectly through repurchases on information that, while price-sensitive, is not legally material.⁵⁵

III. REPURCHASES: INSIDER TRADING AGAINST THE FIRM’S OWN SHAREHOLDERS

Part II explained that managers may be able to use repurchases to benefit shareholders both directly, by reducing shareholders’ tax burden and transaction costs, and indirectly, by giving firms greater financial flexibility, by enabling managers to credibly communicate information about the stock’s value, and by providing necessary shares for valuable employee stock option programs.

This Part demonstrates how managers also can, and do, use repurchases to exploit inside information relating to the value of the firm’s stock. Part III.A begins by showing how a repurchase integrates in a single transaction both shareholder-level trading and a dividend payment. When the stock is underpriced, the effect of this transaction is to shift value from selling shareholders to managers and other remaining shareholders. Part III.B then describes the considerable amount of evidence indicating that managers in fact use repurchases to engage in informed trading against their own shareholders.

Because investors know that repurchases are frequently informationally-motivated, the announcement of a repurchase can signal the possibility that the stock is underpriced, causing the stock price to rise. Managers, who receive much of their compensation in the form of stock options, frequently sell shares, and naturally wish to do so for the highest possible price. Thus, as Part III.C explains, managers may have an incentive to announce a repurchase even when they have no intention to buy back

⁵⁴ See Fried (1998), *supra* note X, at 336.

⁵⁵ See Dennis W. Carlton & Daniel Fischel, *The Regulation of Insider Trading*, 35 STAN. L. REV. 857, 886-87 (1983).

shares, in order to boost the stock price before selling their shares. Indeed, there is evidence with their doing just this. In other words, informationally-driven repurchases not only enable managers to buy stock indirectly at a low price but also to help sell their own shares at a higher price.

Managers' use of repurchases to exploit their inside information indicating that the stock leads the market to react favorably to repurchase announcements. It might thus appear that, contrary to the analysis of Part III.A, information-based repurchases actually benefit selling shareholders by allowing them to sell at a higher price. Part III.D demonstrates that selling shareholders are in fact made worse off ex ante by informationally-driven repurchases. Indeed, by systematically transferring value to managers, such repurchases reduces the wealth of public shareholders as a group.

To focus on the distributional effects of a repurchase, I will assume throughout this Part that repurchasing based on inside information does not have any efficiency implications; that is, it does not affect the size of the total pie but merely redistributes value among those affected by it. In the next Part, I will explain how the use of repurchases, which tie a firm's payout policy to the gap between the stock price and its actual value, can distort the firm's payout policy in a way that further reduces public shareholder wealth.

A. The Insider-Trading Effect of a Repurchase

This section begins by offering a reconceptualization of a share repurchase that will help illuminate the economic effects of using repurchases to distribute cash to shareholders. As I will show, a share repurchase can be decomposed into a three-step transaction: shareholder-level trading, a dividend payment by the firm, and a reverse stock split. In particular, a repurchase is equivalent to the following: (1) managers purchase for themselves and other remaining shareholders, at the repurchase price, the shares of selling shareholders;⁵⁶ (2) managers issue a dividend equal to the dollar amount of the repurchase; and (3) managers effectuate a reverse stock split.⁵⁷

⁵⁶ By "selling shareholders," I mean the selling shareholders whose shares are purchased by the repurchasing firm.

⁵⁷ I ignore transaction costs, which would be lower under a repurchase than under

Diagram 1 illustrates the equivalence between a share repurchase and these three steps.

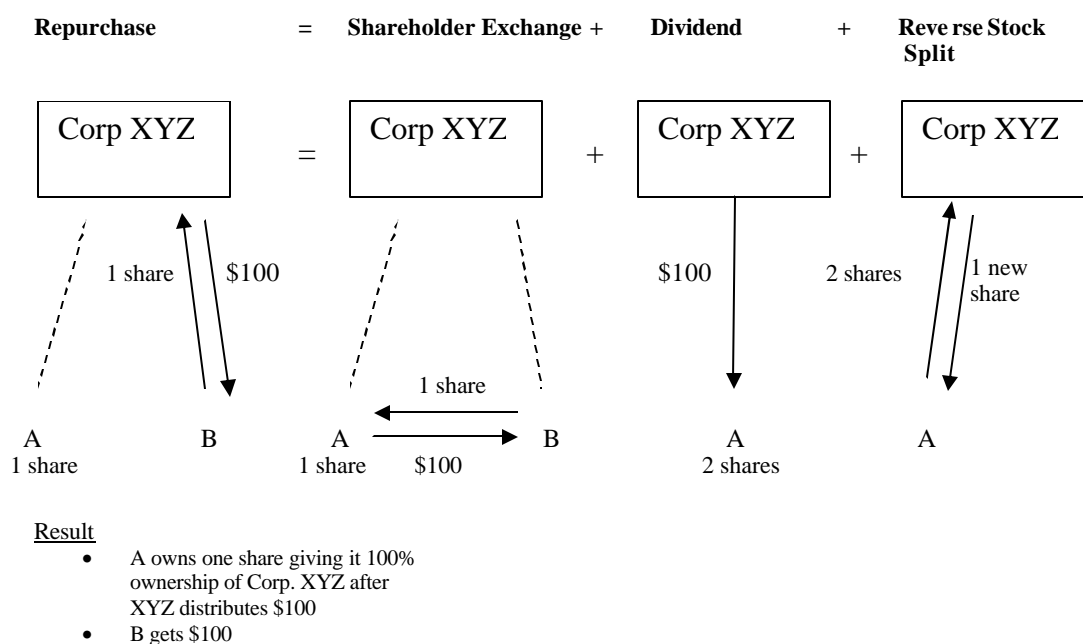


Diagram 1

Suppose that XYZ Corp. has two shareholders, A and B, each of whom owns one share. The figure to the left of the “=” shows a stock repurchase in which XYZ repurchases B’s share for \$100. The effect of the repurchase is that (1) B has sold his share for \$100; (2) XYZ has distributed \$100 in cash; and (3) A owns XYZ’s single share outstanding (100 percent of XYZ’s equity).

The figures to the right of the “=” show three transactions: (1) A buys B’s share for \$100; (2) XYZ distributes a dividend of \$100 to A (to “reimburse” A for his purchase of B’s share); (3) XYZ effectuates a reverse stock split by converting A’s two existing shares into one new share.

It is easy to see that the results of these three transactions are identical to those of the repurchase on the left: (1) B ends up with \$100 and no shares in XYZ; (2) XYZ has distributed \$100 in cash; and (3) A owns XYZ’s single share (100% of XYZ’s equity).

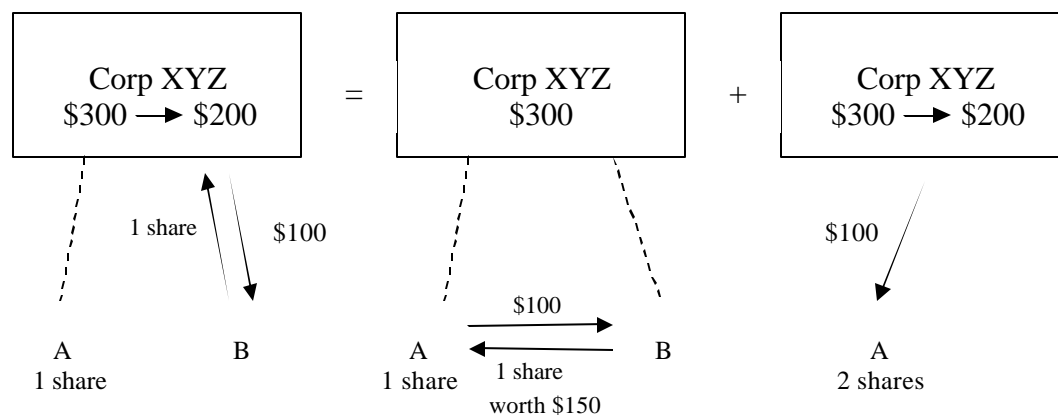
the three-step transaction described here.

Because the reverse stock split is merely a nominal change with no economic significance, for most purposes only the first two of the three transactions are significant: (1) the shareholder-level trading transaction, in which the managers and other remaining shareholders buy the stock of selling shareholders, and (2) the payout transaction.

Consider the inter-shareholder distributional effects of these two transactions. The second transaction--the dividend payout to remaining shareholders--has no distributional effect among shareholders as it affects all (remaining) shareholders equally. However, the first transaction--the shareholder-level trading transaction--can redistribute value among shareholders. In particular, if the purchase price is less than the stock's actual value, the shareholder-level trading transfer value from selling shareholders to remaining shareholders.

Because a repurchase is equivalent economically to these two transactions, it must have the same economic effects. When the repurchase price is less than the stock's actual value, the repurchase transfers value from selling shareholders to the managers and other remaining shareholders, just as if the selling shareholders were selling stock directly to the managers and other remaining shareholders at a price below its actual value. In effect, the managers and other remaining shareholders of the repurchasing firm buy the shares of departing stockholders at a bargain price.

For example, suppose that the pre-distribution value of XYZ is \$300. Each of the two shares is thus worth \$150. Consider Diagram 2 below.



Result

- A gets 100% of Corp. XYZ (worth \$200)
- B gets \$100

Diagram 2

The figures to the left of the “=” show a stock repurchase in which XYZ repurchases B’s share for \$100. The effect of the repurchase is that (1) B has sold his share for \$100; (2) XYZ has distributed \$100 in cash; and (3) A owns XYZ’s single share (100 percent of XYZ’s equity), which is worth \$200 (\$300 pre-distribution value less \$100 paid to B).

The figures to the right of the “=” show a two-step transaction: (1) A buys B’s share for \$100.; (2), XYZ distributes a dividend of \$100 to A (to reimburse A for his purchase of B’s share). The exchange element of the transaction redistributes value between A and B because A is buying B’s share for \$100, even though it is actually worth only \$150. A and B each started with stock worth \$150. The \$50 transfer from B to A means that B ends up with \$100 and A ends up with \$200.

The value transferred to managers and remaining shareholders equals the difference between the actual value of the stock and the repurchase price, multiplied by the number of shares repurchased. The remaining shareholders enjoy the transfer pro rata. Thus, the larger is a remaining shareholder’s percentage ownership, the greater is his share of the transfer.

B. Managers' Use of Repurchases for Informed Trading

Having demonstrated in Part III.A how a repurchase can be used for informed trading, I will now show that managers have the ability and incentive to use the repurchase's redistributive effect for the benefit of themselves and other remaining shareholders, and that there is evidence from the United States and other countries indicating that they indeed do so.

1. Managers' Incentive to Use Repurchases for Informed Trading

There is considerable evidence that corporate managers have access to important private information relating to firm value by virtue of their positions within their firms. Managers increase their selling before releasing "bad news" and increase their buying before releasing "good news."⁵⁸ For example, corporate insiders sell heavily in the five-month period preceding a bankruptcy announcement.⁵⁹ In addition, corporate insiders as a group consistently earn excess returns in their personal trading.⁶⁰ One study found that in their personal trading between 1984 and 1989, which includes, presumably, trades not based on inside information (e.g., liquidity-driven sales), managers annually earned excess returns averaging 7 percent.⁶¹

As Part III.A explained, a repurchase at a low price transfers value from selling shareholders to managers and other remaining shareholders. To the extent managers can use inside information to increase their personal trading profits, they can also use this information to benefit themselves and other remaining shareholders by having the firm repurchase stock at a bargain price.

⁵⁸ See Fried (1998), *supra* note 1, at 317-20 (collecting and summarizing studies).

⁵⁹ See Thomas Gosnell et al., *Bankruptcy and Insider Trading: Differences Between Exchange-Listed and OTC Firms*, 47 J. FIN. 349, 350-53 (1995); H. Nejat Seyhun & Michael Bradley, *Corporate Bankruptcy and Insider Trading*, 70 J. BUS. 189 (1997).

⁶⁰ See Fried (1998), *supra* note 1, at 321-23 (collecting and summarizing studies).

⁶¹ See H. Nejat Seyhun, *The Effectiveness of Insider Trading Sanctions*, 35 J.L. & ECON. 147, 158-60 (1992). For more recent studies, see, e.g., Steven Huddart & Mark Lang, *Information Distribution Within Firms: Evidence from Stock Option Exercises*, working paper (2001) (reporting that corporate insiders also tend to exercise options shortly before stock price declines).

The value transferred in a bargain repurchase is shared ratably among the managers and remaining shareholders. Managers thus benefit from increases in both the total value transferred and their proportional interest in the post-repurchase firm. As a result, the higher is managers' proportional ownership, the greater will be the incentive to repurchase shares when the stock is underpriced.

In fact, managers of U.S. firms announcing repurchases tend to own a substantial fraction of the firms' shares before the repurchase, an average of 15 to 20 percent.⁶² U.S. managers therefore capture an average of one out of every five or six dollars of value transferred from selling shareholders to remaining shareholders, providing them with significant incentive to conduct repurchases when the stock is underpriced.

To be sure, managers engaging directly in "personal" informed trading capture more than 20 percent of the profits they generate. Not having to share the profits with other shareholders, they capture 100 percent. Thus, one might wonder why managers would ever buy stock indirectly through a repurchase rather than buy the stock themselves. However, there are a number of factors that may make it easier for managers to buy indirectly through repurchases than to buy directly for their own accounts when the stock is underpriced.

First, managers facing liquidity constraints might find it difficult to buy shares for their own accounts, or at least to buy as many shares as they would like. Such liquidity-constrained managers might purchase directly in the market as many shares as they can, given their liquidity constraints and, after they have reached those constraints, conduct a repurchase. In fact, managers frequently buy shares for their own accounts before announcing repurchases.⁶³

Second, section 16(b) of the Securities Exchange Act of 1934, which prohibits managers (but not the firm) from making "short swing profits," will in many circumstances prevent managers from buying shares.⁶⁴ A corporate insider is considered to make a short-swing profit if he or she buys and sells stock, or vice versa, within a six-month period, and the purchase price is

⁶² See McNally, *supra* note 26, at 59; Vafeas, *supra* note 6, at 112-13.

⁶³ See Raad & Wu, *supra* note 6, at 57.

⁶⁴ 15 U.S.C. § 78p(b) (2001).

lower than the sale price. (The rule applies not only when the purchase precedes the sale, but also when the sale precedes the purchase.) A manager who either has sold shares at a higher price within the previous six months or expects to sell shares at a higher price within the next six months will expect to face section 16(b) liability if she buys stock directly in the market. However, managers' indirect purchases of stock through a share repurchase are not considered purchases under Section 16(b). Thus, such a manager will not face section 16(b) liability if she indirectly buys stock through a repurchase.⁶⁵

Third, many firms restrict the trading of officers and directors through the use of "trading-windows" and "blackout" periods, which permit corporate insiders to trade only during certain prescribed periods throughout the year.⁶⁶ Thus some managers may be subject to firm-imposed trading restrictions at a time when they believe the stock to be underpriced and wish to purchase shares for their personal accounts. To the extent the firm repurchases shares during these no-trade periods, the managers can use the firm to indirectly buy shares at a low price. Because of the constraints imposed by liquidity, section 16(b), and corporate-level restrictions, managers may often prefer (or be forced) to buy shares indirectly through a repurchase in addition to, or instead of, buying shares for their own accounts.

Certainly, managers do not have an unlimited ability to use repurchases for informed trading. The stock is not always underpriced. Even when the stock is underpriced, the firm might also face cash constraints. That is, given the amount of cash on hand and the firm's current cash needs, the firm might not have enough cash readily available to fully exploit a temporary gap between the actual value of the stock and the share price. Such cash constraints would limit managers' ability to exploit mispricing.⁶⁷

Even if the underpriced firm is not cash-constrained, managers might be reluctant to buy a large number of shares in a short period of time. Large

⁶⁵ It might be desirable to extend Section 16(b) to cover such indirect purchases.

⁶⁶ See J. Carr Bettis et al., *Corporate Policies Restricting Trading by Insiders*, 57 J. FIN. ECON. 191 (2000).

⁶⁷ The firm might be able to raise funds by issuing debt, but there is likely to be a time lag during which the stock might become fairly priced (or even overpriced). In addition, the costs of issuing additional debt, such as excessive leverage, might exceed the expected benefit from buying the stock at a low price.

purchases and increases in trading volume might signal clearly that the stock is underpriced, boosting the price of the stock and significantly reducing the amount of value that can be transferred to managers and remaining shareholders.⁶⁸ In addition, to minimize the risk of liability under the anti-manipulation rules, managers might wish to comply (or substantially comply) with Rule 10b-18, which, as noted in Part II.C.2, provides a safe harbor from manipulation liability for firms that limit the daily volume of their repurchases and adhere to other restrictions. Both inadvertent-signaling and manipulation-liability concerns may thus limit managers' ability to exploit mispricing even when the firm has cash. Despite these constraints, however, there is evidence managers are frequently able to engage in information-based repurchases.

2. Evidence Managers Use Repurchases for Informed Trading

Having shown that managers have the incentive and ability to use the trading effect of a repurchase to benefit themselves and remaining shareholders, I now turn to the considerable evidence that managers in fact often use repurchases for this purpose. The evidence can be divided into two categories: (1) managers' behavior before, during, and after the repurchase announcement, as well as their own statements; and (2) price movements before, around the time of, and in the years following repurchase announcements.

(a) Managers' Behavior and Statements

Managers' behavior before and after the repurchase announcement is consistent with the use of informationally-driven repurchases. The higher is the managers' percentage ownership, the greater is the incentive to conduct a bargain repurchase. This association generates a prediction: the more shares managers own, the more likely they are to conduct a repurchase. Consistent with this prediction, there is evidence that in the United States managers

⁶⁸ The firm might also fear that the purchases will force the price up quickly through price pressure.

owning more options are more likely to conduct a repurchase.⁶⁹ Similar evidence comes from Canada. One study found that Canadian firms conducting repurchases between 1989 and 1992 had an average inside ownership of 29.4 percent, while a sample of similar firms not conducting repurchases have an average inside ownership of 9.8 percent.⁷⁰

The relationship between managers' equity stake and their incentive to conduct information-based repurchases suggests that managers with large stakes are not only more likely to have their firms' repurchase shares but also more likely to repurchase stock when the price is low. Indeed, there is a positive relationship between pre-repurchase managerial ownership and post-repurchase stock appreciation,⁷¹ indicating that managers with larger stakes are more likely than managers with smaller stakes to conduct a repurchase when the stock is underpriced. In addition, there is some evidence that managers buy more shares for their personal accounts before repurchases that are followed by significant stock price appreciation,⁷² indicating that managers are aware, at the time of the announcement, that the stock is underpriced.⁷³

⁶⁹ See Fenn & Liang, *supra* note 6; Jolls, *supra* note 6; Kahle, *supra* note 6 (finding that the decision to repurchase shares is affected by the number of managerial options outstanding). But *cf.* Weisbenner, *supra* note 3 (finding no link between managerial options and the choice between repurchases and dividends).

⁷⁰ Kai Li & William McNally, *Information Signaling or Agency Conflicts: What Explains Canadian Open Market Share Repurchases?*, working paper (1999).

⁷¹ See Raad & Wu, *supra* note 6, at 57 (1995) (finding that abnormal returns following repurchases are positively related to pre-buyback insider buying and the level of pre-buyback management ownership).

⁷² See Raad & Wu, *supra* note 6, at 57 (showing that abnormal returns following OMRs are positively related to pre-buyback insider buying and the level of pre-buyback management ownership). But *see* Chan et al., *supra* note 6 (finding no evidence that managers buy for their own accounts around repurchases that precede large price increases).

⁷³ Insider trading would predict that the greater are managers' holdings, the more likely is the firm to repurchase shares. In fact, that the decision to repurchase shares is affected by the number of managerial options outstanding. See Kahle, *supra* note 6 (finding); Fenn & Lang, *supra* note 6; Jolls, *supra* note 6. Of course, an alternative explanation is that managers holding equity will generally prefer repurchases to dividends even in the absence of insider trading. See *supra* note x.

Managers' behavior after the announcement is also consistent with the use of at least some repurchases for informed trading. Managers are more likely to follow up a repurchase announcement with actual repurchases if the stock subsequently performs poorly.⁷⁴ Focusing on "value firms" announcing repurchases, one study found that among the firms in which managers subsequently repurchased shares, four-year post-announcement abnormal returns were 25%, vs. 0% for firms that did not subsequently repurchase any shares.⁷⁵

Similar evidence comes from outside the United States. For instance, a recent study of repurchases on the Hong Kong Stock Exchange (SEHK), where repurchasing firms must report the date, volume, and prices of every share repurchased by the morning of the next business day, concluded that managers were using inside information to make their repurchase decisions.⁷⁶

The conclusion that managers frequently use repurchases to buy stock when they know the price is low is further supported by survey data from the last several decades. According to a major 2004 study of firm payout policy based on a survey of financial executives, "the most popular response for all repurchase questions on the entire survey is that firms repurchase when their stock is a good value, relative to its true value: 86.4% of all firms agree or strongly agree with this supposition."⁷⁷ Interviews with CFOs revealed that 50 percent of the CFO say that their firm tracks repurchase timing and that their firm can beat the market.⁷⁸ According to the survey's organizers, "executives believe that they can time the market with their repurchase decisions, so they accelerate repurchases when they believe their stock price is low."⁷⁹ Earlier studies have found similar results. When asked in an anonymous 1988 survey what was the most important circumstance precipitating a repurchase, 66 percent of the surveyed managers responded

⁷⁴ See Stephens & Weisbach, *supra* note 6.

⁷⁵ See Konan Chan, David Ikenberry, and Inmoo Lee, *Do Managers Trade Consistently? Evidence Linking Insider Trading to Actual Share Repurchase Activity*, working paper (2003), p. 2-3.

⁷⁶ Paul Brockman & Dennis Y. Chung, *Managerial Timing and Corporate Liquidity: Evidence from Actual Share Repurchases*, 61 J. FIN. ECON. 417, 418 (2001).

⁷⁷ See Alon Brav, John R. Graham, Campbell R. Harvey, & Roni Michaely, *Payout Policy in the 21st Century*, 15, working paper (2004).

⁷⁸ See *id.*

⁷⁹ See *id.* at 1.

that “low stock price,” six times as many as the next most popular answer “need for treasury stock.”⁸⁰ According to the authors of these studies, these responses are consistent with responses in earlier surveys of this subject.

(b) Stock Price Movements

Stock price movements before, during, and after repurchase announcements are also consistent with at least some repurchases being informationally driven.

Consider first stock price movements before repurchase announcements. If repurchases were conducted when the stock is underpriced, one would expect many repurchases to follow periods in which the stock had experienced negative abnormal returns. In fact, firms announcing repurchases on average exhibit negative abnormal returns in the thirty-day period prior to the announcements,⁸¹ which is consistent with the shares having become underpriced at the time of the repurchase.⁸²

Stock price movements around the time of the repurchase announcement are also consistent with the use of repurchases for informed trading. If managers were to use repurchases to buy stock at a low price, then an announcement would tend to signal that the expected value of the stock is higher than the current market price. Indeed, when a repurchase is announced, the market reacts to the announcement by bidding up the price of

⁸⁰ George P. Tsektsekos et al., *A Survey of Stock Repurchase Motivations and Practices of Major U.S. Corporations*, 7 J. APPLIED BUS. RES. 15, 17 (1991).

⁸¹ Jagannathan & Stephens, *supra* note 6, report that for infrequent or occasional repurchasers (firms which conducted only one or two repurchases respectively in the previous five-year period) average returns in the year before the announcement are 11 percent and 5 percent, respectively, below those of peer firms. U.S. firms announcing first time repurchases also have high book to market ratios, which is consistent with their being underpriced. See Grullon & Ikenberry, *supra* note 3.

⁸² A Korean study reports similar findings. See ___ Jung et al., *Stock Repurchases in a Developing Market: Evidence from Korea* 14 (2003) (reporting that firms announcing repurchases in Korea experience large abnormal negative returns in the thirty-day period prior to the announcement).

the stock.⁸³ This reaction is consistent with the announcement sending a signal that the stock is underpriced.⁸⁴

Moreover, stock price movements are larger around announcements that are more likely to reflect information-based trading. Firms that repurchase shares consistently—and therefore are likely to be buying shares for employee stock option programs rather than engaging in informed trading or using repurchases to distribute transient cash flows—have much lower announcement returns than firms that announce a repurchase for the first time or are infrequent repurchasers.⁸⁵ Infrequent repurchases announcers also tend to have higher levels of managerial ownership and more informational asymmetry.

One would predict that if managers used repurchases to buy stock at a low price, firms announcing repurchases would tend to outperform firms not announcing repurchases in the period subsequent to the announcement. There is considerable evidence that the stock prices of repurchasing firms increase faster than similar firms not conducting repurchases. A recent study finds that shares of firms announcing repurchases earn abnormal returns of 6.7 percent the first year (including initial market reaction) and 23.6 percent over four years.⁸⁶ These post-repurchase returns provide extremely strong

⁸³ In Korea, for example, the average abnormal return during the three-day period beginning with the announcement date is 2.78 percent. See Jung et al., *supra* note 81, at 13. Also, in Korea the market response to a repurchase announcement increases in the size of managers' holdings, which suggests that the market believes that repurchases by firms with large managerial holdings are more likely to be driven by insider trading considerations.

⁸⁴ The value of a stock depends on the expected value of its future cash flow, which in turn is a function of the amount and time of the cash flow as well as the interest rate used to discount the cash flow. The higher is the volatility, the higher will be the discount rate. Thus, managers can reap profits trading on private information about the amount of future cash flows as well as on private information about the volatility of those cash flows. Indeed, there is substantial evidence that repurchasing firms have much lower future volatility than the market had assumed. I Grullon & Michaely, *supra* note 6.

⁸⁵ See Jagannathan & Stephens, *supra* note 6, at 71, 72.

⁸⁶ See Konan Chan, David Ikenberry, & Inmoo Lee [Chan et al.], *Economic Sources of Gains in Stock Repurchases* — J. FIN. QUANTITATIVE ANALYSIS (forthcoming 2004). An earlier study using a smaller data set reported abnormal price increases averaging 12 percent over the forty-eight months following repurchase announcements. See Ikenberry et al. (1995), *supra* note 6, at 190 (reporting large price increases following OMRs undertaken between 1980 and 1990). See also Chan et al., *supra* note 6 (examining long-

evidence that as a group, firms announcing OMRs are underpriced at the time the repurchase is announced.

That managers have inside information that they can use in repurchasing shares does not mean that every repurchase will, ex post, turn out to transfer value from selling shareholders to managers and remaining shareholders. Managers who are aware of firm-specific inside information suggesting that the stock is underpriced may buy stock shortly before there is an unexpectedly large interest rate increase, a slowdown in the economy, or unfavorable changes in the firm's industry causing the stock price to fall. However, managers with inside information can realistically expect to beat transfer value from selling shareholders to themselves and other remaining shareholders and, on average, are likely to do so.

To be sure, the stock price movements described above cannot prove that repurchases are used for informed trading. The negative abnormal returns prior to the repurchase announcement cannot prove that the stock was underpriced at the time of the announcement. It is possible that the stocks were overpriced prior to the negative abnormal returns and that those negative abnormal returns simply corrected the overpricing, bringing the stock to its fair value. If managers used repurchases as a tax-advantaged method of distributing cash or for other purposes, such as acquiring shares for stock option programs, they might have waited until the stock returned to its fair value before distributing cash. Thus, negative abnormal returns prior to repurchase announcements are consistent with the use of repurchases for purposes other than information-based trading.

Similarly, the positive stock market reaction to the repurchase announcement could result from factors other than signaling that the stock is likely to be underpriced. Firms announcing repurchases might have excess cash that the market had previously believed the managers would continue to hoard wastefully. In such a case, an announcement of a repurchase would increase the stock price by revealing that managers intended to distribute cash that is sitting idly in the corporation.

Finally, subsequent abnormal price increases cannot prove that the stock is underpriced at the time of the repurchase announcement. There could

horizon returns for a sample of over 4000 open market programs announced by U.S. firms from 1980 to 1996 and finding long-term abnormal returns of 5.73 percent).

be another explanation for the post-announcement price increases: that firms conducting repurchases boost the price of their shares by buying back shares from their lowest-valuing shareholders.⁸⁷

Thus, each of these types of stock price movements, by themselves, cannot prove that repurchases are driven by information suggesting the stock price is low. However, the pattern of stock price movements is highly suggestive that managers use at least some repurchases for information-based trading. Furthermore, these stock price studies, combined with the studies of managers' behavior before, around, and after the repurchase announcement, and managers' own statements as to why they repurchase shares, provide extremely strong evidence that managers in fact use at least some repurchases to buy underpriced stock.

3. Why the Currently Required Repurchase Announcement Does Not Fully Eliminate Underpricing

As discussed earlier, a firm that has not already announced the initiation of an open market repurchase program, must, under stock exchange rules, announce the program before repurchasing any shares. The announcement will, in turn, boost the stock price. When the stock is underpriced, this price increase will narrow the gap between the share price and the stock's actual value, making it more difficult for managers to profit by indirectly buying shares from selling shareholders at a low price.

Any price boost, however, is unlikely to close the gap completely because the "signal" sent by the repurchase announcement does not clearly communicate (1) that the stock is underpriced and (2) the degree of underpricing, if the stock is underpriced. In announcing a buyback, a firm might simply be giving itself the option to repurchase shares should they become underpriced in the future.⁸⁸ For example, Continental Airlines announced a repurchase program that is of indefinite duration, perhaps obviating that the firm never again will need to announce such a program.⁸⁹ Or, as I will explain shortly, managers might announce a repurchase program

⁸⁷ See *supra* note x and accompanying text.

⁸⁸ See Ikenberry & Vermaelen, *supra* note 39.

⁸⁹ See Grullon & Ikenberry, *supra* note 3.

simply to boost the stock price before selling their own shares.⁹⁰ Knowing that these are a number of possible reasons for the announcement, many of which are not associated with current under-pricing, the market's reaction to a repurchase announcement usually will not close the gap between the stock price and its actual value in those situations where the stock is in fact underpriced. This is the case even if the market is perfectly efficient in processing the information communicated by the announcement.

C. Misleading Repurchase Announcements

Part III.A showed that managers can use the trading effect of repurchases to transfer value to themselves and remaining shareholders when the actual value of the stock exceeds the stock price, and Part III.B presented evidence consistent with their doing so. Market participants know that managers tend to announce repurchases when the stock is trading at a bargain price. Thus, in many situations, investors are likely to infer from a repurchase announcement that the stock is underpriced and bid up the price.⁹¹

To be sure, investors know that a repurchase could have other motivations. The managers may announce a repurchase in order to distribute excess cash in a tax efficient manner or to “fund” option programs, even when the stock is not underpriced. Thus, investors can never be certain that a particular announcement is motivated by managers' desire to purchase stock for themselves and remaining shareholders at a low price.⁹² Nevertheless,

⁹⁰ See *infra* Part IV.C.

⁹¹ There are other reasons for which market participants might react favorably to a repurchase announcement besides the signal it sends about the actual value of the stock. For example, investors might bid the price up because they believe the firm will distribute excess cash that it had been holding and that was earning relatively poor returns inside the firm.

⁹² Interestingly, there is evidence that the reaction is lower when the market believes that the repurchase is intended to fund option plans. In particular, the reaction is lower when there are a large number of employee options outstanding. See Kahle, *supra* note 6, at 6. For a discussion of the need for repurchases to fund option plans, see *supra* Part II.B.2.b. See also Jagannathan & Stephens, *supra* note 6 (reporting that the stock market reaction to first time repurchases is higher than that to multiple repurchases by the same firm in a five-year period, presumably because the firm conducting multiple repurchases has different motives for repurchasing, such as

given the frequent use of information-based repurchases, a repurchase announcement usually signals that the *expected value* of the stock is higher than the pre-announcement market price.

The fact that repurchase announcements tend to boost the stock price suggests, in turn, that managers might have an incentive to announce repurchases even when they have no intention of conducting them. Most managers receive a substantial portion of their compensation in the form of stock options that give them the right to purchase the corporation's shares at a discounted price. Once the options vest, managers tend to exercise the options and sell the received stock.⁹³ Managers sell for both diversification and liquidity reasons. In addition, managers tend to sell heavily when they are aware of "bad news" and wish to sell before that information emerges and the stock price drops.⁹⁴ Whatever, motivation, however, managers intending to sell shares will wish to sell those shares at the highest possible price. As a result, they will sometimes have an incentive to announce a repurchase solely for the purpose of boosting the price of the stock before selling the shares, even if they have no immediate intention of repurchasing any shares.⁹⁵

By announcing a repurchase even when they have no intention of repurchasing shares, managers about to sell shares essentially attempt to

distribution of excess cash and acquisition of shares to fund option programs).

⁹³ Lucian A. Bebchuk, Jesse M. Fried, and David I. Walker, *Managerial Power and Rent Extraction in the Design of Executive Compensation*, 69 U. CHI. L. REV. 827 (2002) (citing Eli Ofek & David Yermack, *Taking Stock: Equity-Based Compensation and the Evolution of Managerial Ownership*, 55 J. FIN. 1367, 1376-77 (2000) (finding that "when executives exercise options to acquire stock, nearly all of the shares are sold"). In fact, managers of publicly traded corporations sell approximately twice as much of their own corporation's stock as they buy. Seyhun & Bradley, *supra* note 59, at 194; Rozeff and Zaman, *supra* note x, at 42. See also Seyhun, *supra* note 61, at 147, 158-60.

⁹⁴ For an explanation of the limited effect insider trading laws have on managers' ability to trade on inside information, see *supra* Part II.C.3. For a summary of empirical studies finding that managers sell before the release of bad news, see Fried (1998), *supra* note 1, at 317-20.

⁹⁵ To the extent that repurchases can be used to exert price pressure, actual repurchases—rather than mere announcement—can be used to boost the stock price. For evidence that managers use repurchases to boost the stock price before selling, see Jaemin Kim & Nikhil Varaiya, *Disclosure on Open Market Repurchase Transactions in the U.S.: Does it Create a Conflict of Interest*, working paper (Sept. 2003) (finding that managers sell more heavily in quarters where their firms are repurchasing shares). Another interpretation of this finding, however, is that firms repurchase more shares in quarters where managers and other employees exercise their options and sell shares.

“mimic” or “pool with” managers of underpriced firms using repurchases to buy stock at a low price. This mimicking appears to be successful: there is no difference in market reaction between announcements followed by repurchases and announcements not followed by repurchases.⁹⁶ Thus, managers can use repurchase announcement to sell their shares at a higher price.

To be sure, average stock price reactions to repurchase announcements are fairly modest, as low as several percent.⁹⁷ However, an announcement might substantially boost the stock price in certain cases: there are abnormal stock returns averaging 7 to 8 percent when smaller firms announce repurchases and when the announcement has not been preceded by another in the last five years.⁹⁸ Moreover, for managers selling millions of dollars of stock, as well as managers exercising expiring options whose strike price is near the pre-announcement market price, the ability to sell shares at even a slightly higher price may well be important.

It is worth noting here that this mimicking actually inures to benefit of managers wishing to use repurchases to buy stock at a low price. The more mimicking there is, the less likely it is that a particular announcing firm’s stock is actually underpriced, and the smaller will be the reaction to repurchase announcements. The smaller the reaction, the easier it is for managers of underpriced firms to buy shares for themselves and other remaining shareholders at a low price. Thus, both mimicking and non-mimicking managers benefit when mimicking firms pool with underpriced firms.

There is evidence that managers announce repurchases in order to boost the stock price before selling shares. Repurchase announcements often occur around the time executives exercise stock options.⁹⁹

Indeed, mimicking can explain two puzzling pattern surrounding repurchases. The first, which has been largely overlooked—is that mean and median insider-percentage ownership fall around the time of repurchase

⁹⁶ See ___ Bhattacharya & Amy Dittmar, *Costless vs. Costly Signaling in Capital Markets: Theory and Evidence*, working paper (2000), p. 27.

⁹⁷ See *supra* note x.

⁹⁸ Jagannathan & Stephens, *supra* note 6, at 72.

⁹⁹ See Chan et al., *supra* note 6,

announcements.¹⁰⁰ The second is that a substantial number of firms announcing repurchases never repurchase a single share.¹⁰¹ If firms announced share repurchases in anticipation either of buying stock at a bargain price or of using the repurchase for one of the shareholder-regarding reasons described in Part II.B, one would expect repurchase announcements to be followed by actual repurchases. The fact that a substantial fraction of firms announcing a repurchase never repurchase a share suggests that repurchases, or at least repurchase announcements, can serve another purpose.

To be sure, a firm might announce a repurchase to give itself the option of buying back shares at a bargain price and subsequently find that its stock does not become underpriced. One cannot rule out the possibility that in many cases managers announce a repurchase to give them an option and then decide not to exercise it. However, anecdotal evidence suggests that managers sometimes announce repurchases not to give themselves a repurchase option but simply to boost the stock price.

Following the 1987 stock market crash, for example, many firms announced repurchases in order to show confidence in their stock and support the price. However, the number of outstanding shares declined for only 41 percent of the NYSE and AMEX firms announcing repurchases, and for only 33 percent of the OTC firms announcing repurchases.¹⁰² After Arkansas Best announced an intention to repurchase two million shares, one manager was later quoted in the New York Times as saying “I don’t think we ever intended to repurchase two million shares. We did it to build confidence.”¹⁰³ According to a vice president at Standard & Poor’s, a credit rating agency, “A problem with repurchase announcements is that companies have informed S&P that they have little intention of implementing the authorizations. In fact, many firms made big repurchase announcements after the crash, and then ran over to S&P in an effort to protect their credit

¹⁰⁰ See Vafeas, *supra* note 6.

¹⁰¹ See *supra* note x.

¹⁰² Beverly Kracher & Robert R. Johnson, *Repurchase Announcements, Lies and False Signals*, 16 J. BUS. ETHICS 1677, 1678 (1997).

¹⁰³ J. Palmer, *Promises, Promises: Or What Happened to All Those Post-Crash Buybacks*, 13 BARRON’S 21, 21 (1988).

rating.”¹⁰⁴

It is difficult to know how many repurchase announcements are made opportunistically with the sole intent of boosting the stock price before managers sell their shares. Nevertheless, it is clear that a substantial fraction of firms announce repurchases and never repurchase a single share, and by managers’ own accounts some of these announcements were made with no intent to repurchase and merely to boost the stock price.¹⁰⁵

D. Might Information-Based Repurchases Actually Benefit Public Shareholders?

Part III.A explained how informationally-based repurchases benefit managers and other remaining shareholders at the expense of selling shareholders. Part III.B presented evidence that managers in fact use repurchases to buy stock at a low price. Part III.C described how managers can use repurchase announcements to boost the stock price before selling their own shares, and provided evidence consistent with their doing so.

This section considers the possibility that, notwithstanding the analysis in Part III.A, a bargain repurchase actually benefits both remaining shareholders and selling shareholders, and therefore makes all public shareholders better off. The argument would be as follows. To the extent the announcement accompanying the repurchase boosts the stock price, selling shareholders can unload their shares at a higher price. While they may be selling their shares at a price below their actual value, arguably they would have sold their shares at an even lower price absent the repurchase

¹⁰⁴ I. Picker, *Are Those Buyback Programs For Real?*, INSTITUTIONAL INVESTOR, Mar. 1988, at ____.

¹⁰⁵ Although to focus on the insider trading effects of repurchases I have been assuming for purposes of this paper that the demand curve for a stock is not downward sloping, if the demand curve is in fact downward sloping managers might not only announce but also conduct repurchases prior to selling their shares in order to temporarily boost the stock price, even when such a step reduces aggregate shareholder value. I plan to develop this point in future work. In addition, managers might use repurchases to temporarily boost earnings per share. To the extent shareholders focus disproportionately on this measure of corporate performance, managers might have yet another incentive to initiate repurchase even when a repurchase does not increase aggregate shareholder value.

announcement. On this logic, informationally-driven repurchases not only make managers and other remaining shareholders better off, but also benefit selling shareholders as well. Indeed, all current shareholders appear better off. Unfortunately, as this section explains, the appearance that all current shareholders benefit from such repurchases is an illusion. Bargain repurchases make selling shareholders systematically worse off, and reduce the wealth of public shareholders as a group.

1. The Illusion that Selling Shareholders Benefit

As Part III.A explained, in a bargain repurchase the firm buys back stock at a price below its actual value. The effect is to transfer value from selling shareholders to managers and remaining shareholders. From the perspective of shareholders, the distributional effect of the repurchase is the same as that of a transaction in which managers and remaining shareholders purchase the stock directly from selling shareholders at a low price.

The announcement accompanying the repurchase, however, will tend to boost the stock price. Thus, the announcement appears to benefit selling shareholders by allowing them to sell their shares at a higher price. The announcement, in turn, is made because the firm wishes to conduct a bargain repurchase. Thus, managers' decision to conduct the bargain repurchase appears to make selling shareholders as well as remaining shareholders—and therefore all public shareholders—better off.

Of course, the stock is likely to remain underpriced even after the announcement.¹⁰⁶ As a result, selling shareholders are likely to unload their stock at a price below the share's actual value. But suppose, for argument's sake, that selling shareholders would have sold their shares anyway. Although they sell their shares for a price that is less their actual value, such shareholders would have sold their stock at an even lower price absent the price-boosting announcement. Thus, the repurchase and, in particular, the announcement that must precede it, appear to benefit selling shareholders.

Moreover, one might argue, selling shareholders benefit from informationally-driven repurchases even when managers announce a repurchase for some other reason. As Part III.C explained, because investors

¹⁰⁶ See *supra* Part III.B.3.

never know with certainty whether managers are announcing a repurchase to buy stock at a low price or for some other purpose, repurchase announcements tend to boost the stock price regardless of managers' actual motive. Thus the fact managers engage in bargain repurchases benefits selling shareholders not only when managers actually engage in bargain repurchases but whenever they announce a repurchase, thereby boosting the stock price.

Indeed, when the stock is not underpriced and managers announce a repurchase solely to boost the stock price before selling their own shares, the repurchase announcement might actually enable selling shareholders to unload shares at a price higher than their actual value. Because in such a scenario managers would not actually repurchase any shares – such a move would reduce the value of the shares they are not selling -- the benefit to selling shareholders of the false announcement would come at no cost to remaining shareholders. Thus, whether the stock is underpriced or overpriced at the time of the repurchase announcement, it seems that selling shareholders benefit --- and no current shareholders lose – from managers engaging in information-based repurchases.

2. The Actual Effect on Selling Shareholders

Unfortunately, the apparent benefit to selling shareholders from informationally-driven repurchases is illusory, for two reasons. First, the argument focuses exclusively on the scenario in which managers able to engage in bargain repurchases announce a repurchase. As I explain, when managers able to engage in such repurchases decline to announce a repurchase, the absence of such announcement conveys negative information about the value of the stock, hurting the stock price. Ex ante, the expected benefit from price-boosting repurchase announcements can do no more than offset the expected losses to selling shareholders from managers' failure to announce a repurchase -- and this is assuming that the bid-ask spread remains the same when managers engage in informationally-motivated repurchases.

Second, the argument ignores the effect of informationally-driven repurchases on the bid-ask spread. The ability of managers to use repurchases for informed trading causes market makers to widen the bid-ask spread when market makers believe the firm is conducting a repurchase. This effect, in turn, reduces the price at which selling shareholders can unload their shares. As the paper shows, once the bid-ask spread effect is taken into account, the expected benefit to selling shareholders from repurchase announcements declines, and fails to completely offset the expected cost to selling shareholders when managers indicate, by declining to announce a repurchase, that the stock is likely overpriced.

(a) Ex Post vs. Ex Ante Sale Prices

Managers' ability to engage in information-based repurchases benefits selling shareholders when firms announce repurchases because such announcements signal the possibility of underpricing and boost the stock price, enabling selling shareholders to unload stock at a higher price. However, to understand how selling shareholders are affected by managers' ability to repurchase stock at a low price, one must consider not only the price at which selling shareholders liquidate their shares when managers announce a repurchase but also the price at which they liquidate their shares when managers fail to announce a repurchase.

For present purposes, I will assume that the bid-ask spread is zero. In other words, the stock can be purchased and sold at the same price – the price which reflects all public information bearing on the value of the stock. As we will see, under such an assumption, the expected benefit to selling shareholders from repurchase announcements does not more than compensate them for the expected cost associated with the failure of managers to announce a repurchase. Ex ante, managers' ability to engage in bargain repurchases and the price-boosting effects of repurchases do not make selling shareholders better off.

Consider publicly traded firm XYZ. Suppose that there are liquidity-seeking XYZ shareholders that must sell a certain number of shares every period and will do so at the prevailing market price. Further suppose that XYZ managers can engage in information-driven repurchases, although they

may well conduct a repurchase for some other reason. Finally, assume that XYZ managers may not always conduct a repurchase when the stock is underpriced (because sometimes the firm's opportunities are sufficiently attractive that they are better off investing the cash in the firm than buying back cheap stock).

If XYZ's managers announce a repurchase, the market will not know whether the stock is underpriced or whether the managers are announcing a repurchase for some other reason, such as to boost the price of the stock before selling their shares. However, the possibility that the stock is underpriced and that managers are announcing a repurchase in order to buy stock at a low price may lead the market to infer that the stock is (in expected value) underpriced and to bid up the price. XYZ's liquidity sellers are therefore able to sell their shares at a higher price.

However, if XYZ's managers can use repurchases for buying stock at a low price and the firm does not make a repurchase announcement, the market will interpret the lack of such an announcement to indicate that the stock is (in expected value term) overpriced, and bid the stock price down. To be sure, managers may decline to announce a repurchase even when the stock is underpriced because, for example, they lack the cash to conduct a repurchase. Thus, the absence of a repurchase announcement does not necessarily mean that the stock is in fact underpriced. Yet if a repurchase announcement "signals" that the stock is, in expected value terms, underpriced, it logically follows that the absence of such an announcement signals that the stock is, in expected value terms, overpriced. As a result, when XYZ's managers can use inside information in repurchasing shares, XYZ's sellers will be forced to sell their shares at a lower price when the managers decline to announce a repurchase.

A simple numerical example will make things more concrete. Suppose that the shares of XYZ, currently trading for \$10 per share, are actually worth either \$8 per share or \$12 per share, with equal likelihood. Suppose that if the stock is in fact worth \$12 per share, there is a 30 percent likelihood that XYZ's managers will tomorrow announce a repurchase and then repurchase shares. If the stock is worth \$8 per share, there is a 10 percent chance that XYZ's managers will announce a repurchase tomorrow for the purpose of boosting

its stock price so that they can sell their shares at a higher price. Assume that the bid-ask spread is \$0.

If XYZ announces a repurchase, the market will infer that the expected value of the stock is \$11¹⁰⁷ and bid the stock price up from \$10 to \$11. Whether the stock is in fact worth \$12 or only \$8, selling shareholders will be able to sell their stock for \$1 more than they could have the day before the announcement. Thus, given that XYZ's managers can engage in information-based repurchases, the repurchase announcement benefits selling shareholders.

However, if XYZ fails to announce a repurchase tomorrow, the market will infer that the expected value of the stock is only \$9.75.¹⁰⁸ The stock price will therefore drop to \$9.75, costing selling shareholders \$0.25 per share. Although the drop in price resulting from the lack of an announcement is much smaller than the increase in price resulting from an announcement, there is an 80% likelihood that there will be no announcement, and only a 20% likelihood that there will be an announcement. Taking into account these probabilities, the expected increase in price from a repurchase announcement is \$0.20, the same as the expected decrease associated with the lack of an announcement. As a result, ex ante the expected sale price for selling shareholders is \$10.

Compare this situation to one in which XYZ's managers cannot engage in repurchases. In that case, selling shareholders will neither benefit ex post from managers' announcing a repurchase, nor lose ex post from managers' failure to announce a repurchase. They will, in this example, always sell their shares for \$10, which is the expected sales price when managers can announce a repurchase.

To be sure, if the likelihood of a repurchase announcement were very small, say 1%, the price decline caused by the lack of a repurchase announcement would be extremely low, perhaps even barely noticeable, because the market would have already anticipated, on a probabilistic basis, that there would be no announcement. The important point, however, is that if markets efficiently process the information signaled by the presence or

¹⁰⁷ The expected value of XYZ shares, based on the values and probabilities used in this example, equals $(0.30 \times \$12 + 0.10 \times \$8) / (0.40)$.

¹⁰⁸ The expected value of XYZ shares, based on the values and probabilities used in this example, equals $(0.70 \times \$12 + 0.90 \times \$8) / (1.60)$.

absence of a repurchase announcement – the expected benefit ex ante to selling shareholders from a repurchase announcement at most compensates these shareholders from the expected price decline from the lack of an announcement.

The above analysis should make obvious the problem with focusing on information-based repurchases' effect on selling shareholders in only one scenario: that in which managers decide to announce a repurchase. To the extent that a repurchase announcement signals positive information about the value of the firm, boosting the stock price, the lack of such an announcement must, as a matter of logic, communicate negative information about the value of the firm, hurting the stock price. Ex ante, the expected price boosting effect of repurchase announcements does no more than compensate selling shareholders for the expected price reduction when the market learns there is no reaction.

(b) The Bid-Ask Spread

I have assumed so far, both in the analysis and in the numerical example, that the bid-ask spread is zero. Under this assumption, as I have shown, informationally-driven repurchases cannot make selling shareholders better off ex ante – that is, before the market knows whether managers will announce a repurchase. Nevertheless, it does not make them worse off either. When managers use repurchases to buy stock at a low price, however, market makers must widen their bid-ask spread, everything else equal. This effect, I will now explain, leaves selling shareholders worse off on average than they would be in a world of no information-based repurchasing.

The bid-ask spread compensates the market maker for the various costs associated with market making, including inventory-holding costs and what might be called “price risk” -- the risk that the market maker will sell its shares for less than what they are worth or buy shares for more than they are worth. In the absence of better informed counterparties, price risk is relatively low because the market maker will, on average, sell as many shares as it buys. Thus, whether the trades are affected at a time when the stock is underpriced or when the stock is overpriced, the market maker does not expect to systematically lose money.

However, when managers engage in information-based repurchasing, price risk increases; the market maker finds itself selling more shares when they are underpriced than when they are overpriced. On average, the market maker will sell shares for less than they are actually worth, losing value to buyers. Because the cost of market making increases when managers use repurchases to buy stock at a low price, market makers must widen their bid-ask spread to compensate themselves for the extra cost. This effect, called “adverse selection,” leads to a lower bid price, imposing a cost on selling shareholders.¹⁰⁹

As noted in Part II.B.6, one potential benefit of repurchases is that they can reduce the bid-ask spread through a competing market maker effect or an inventory holding cost effect. Indeed, in situations where firms conducting repurchases are highly unlikely to be engaging in informed trading, bid-ask spreads decrease when firms conduct repurchases, perhaps because of the liquidity-boosting effects discussed earlier.¹¹⁰

However, the adverse selection effect caused by information-based repurchasing will tend to offset any such beneficial effects on the bid-ask spread. In fact, there is evidence consistent with adverse selection totally offsetting or even swamping these benefits. For example, while in situations where managers are unlikely to be repurchasing based on inside information bid-ask spreads decrease, in situations where more informed trading is likely the bid-ask spread remains the same or increases.¹¹¹ A study of repurchases

¹⁰⁹ See Barclay & Smith, *supra* note 6, at 66, 71 (1988) (concluding that in OMRs the bid-ask spread widens, liquidity is reduced, and the firm suffers on average a reduction in equity value of 8 percent because managers use OMRs to transfer value from public shareholders).

¹¹⁰ U.S. firms conducting repurchases are not required to provide information on the amount of shares repurchased on any given day and the price at which those shares are acquired. Those responding to requests for such information are likely to be firms that are not using repurchases to engage in insider trading. Cook, Krigman and Leach solicited repurchase data for 478 firms identified as announcing repurchase programs between March 10, 1993 and March 4, 1994. Only sixty-eight responded, and of those four indicated that they were unable, or unwilling to provide the data, leaving only sixty-four firms. In a study of the sixty-four firms voluntarily sharing their repurchase transactions with the researchers, the researchers found that bid-ask spreads decreased when firms repurchased shares as did the price impact of sell orders, another measure of liquidity. This suggests that when repurchases are not used for insider trading, they can in fact improve liquidity. See Cook, Krigman & Leach, *supra* note 32, at 463, 464-66.

¹¹¹ See Singh et al., *supra* note 30 (examining 181 repurchase announcements during

in Hong Kong (where daily repurchase transactions must be reported) finds that the bid-ask spread widens by an average of 10 percent on the days that firms repurchase shares.¹¹² This indicates that not only is there an adverse selection effect on the bid-ask spread but that it is large enough to swamp the otherwise liquidity-enhancing effects of repurchases. Similarly, a recent study of repurchases on the Paris Stock Exchange found that repurchase activity widens bid-ask spreads by 6-15%.¹¹³

As we saw in Part III.D.2.a, assuming that the bid-ask spread is zero informationally-driven repurchases do not enable selling shareholders to sell at a higher price. Although a repurchase announcement boosts the price at which selling shareholders can unload their shares, this price boost can do no more than offset the negative effect on price precipitated by the lack of such an announcement. Ex ante, the expected price at which selling shareholders can unload their shares is neither higher nor lower than when managers cannot engage in informationally-driven repurchases.

However, when the bid-ask spread is nonzero, the price boosting effects of repurchase announcement no longer compensate selling shareholders for the price reductions when the market learns there is no repurchase. When managers fail to announce a repurchase, the stock price falls the same amount as when the bid-ask spread is zero, reducing the price at which selling shareholders can unload stock. However, when managers announce a repurchase, the bid price – the price at which selling shareholders can unload their shares -- rises less than in the zero bid-ask spread scenario because there is now an offsetting effect: market makers must somewhat lower the bid price to compensate for the risk of expropriation by the better informed managers.

Return to the XYZ example. Suppose that the shares of XYZ, currently trading for \$10 per share, are actually worth either \$8 per share or \$12 per share, with equal likelihood. Again, suppose that if the stock is in fact worth

the period between 1983 and 1990 and finding that the bid-ask spread did not change when firms announced repurchases). See also James M. Miller & John M. McConnell, I, 30 *J. FIN. QUANTITATIVE ANALYSIS* 365, 367 (1995).

¹¹² Trading depth (the number of shares offered or sought at the ask and bid prices, respectively) also drops significantly on the day of the repurchase. Brockman & Chung, *supra* note 75, at 441.

¹¹³ See Edith Ginglinger and Jacques Hamon, *Actual Share Repurchases and Corporate Liquidity*, working paper (2003), 19.

\$12 per share, there is a 30 percent likelihood that XYZ's managers will tomorrow announce a repurchase and then repurchase shares. If the stock is worth \$8 per share, there is a 10 percent chance that XYZ's managers will announce a repurchase tomorrow for the purpose of boosting its stock price so that they can sell their shares at a higher price.

However, now assume that there is a nonzero bid-ask spread. Suppose that in the absence of information-based repurchasing, the bid ask spread is \$0.05 and in the presence of such repurchasing the bid ask spread widens to \$0.10. Finally, suppose that the ask price is set to the expected value of the stock.

Again, if XYZ announces a repurchase, the market will infer that the expected value of the stock is \$11. However, given the \$0.10 bid-ask spread, selling shareholders will be able to sell the stock only for \$10.90. The day before the announcement, in contrast, selling shareholders could have sold their stock for only \$9.95, \$10 less the \$0.05 bid-ask spread. Given that XYZ's managers can engage in information-based repurchases, in this example the repurchase announcement still benefits selling shareholders *ex post*.

If XYZ fails to announce a repurchase tomorrow, the market will infer that the expected value of the stock is only \$9.75. Because in the absence of an announcement there cannot be a bargain repurchase, the bid price will be \$0.05 less, or \$9.70, \$0.25 less than the \$9.95 bid price the day before. *Ex ante*, selling shareholders can expect to sell their shares for \$9.94 ($80\% \times \$9.70 + 20\% \times \10.90). Note that if XYZ's managers could not engage in informationally-driven repurchases, selling shareholders could expect to sell their shares for \$9.95. Thus, taking into account the effect of informed repurchasing on the bid-ask spread, selling shareholders are systematically worse off when managers can use inside information in deciding when to repurchase shares.

3. The Effect on Public Shareholders as a Group

Having seen that informationally-based repurchases systematically make selling shareholders worse off, we are now ready to consider the effect of such repurchases on public shareholders as a group. When managers can engage in information-based repurchases, market makers must widen the bid

ask spread to compensate themselves for the risk of trading with better informed parties, in particular the firm itself. In an efficient market, the bid ask spread would widen so that, ex ante, market makers “charge” selling shareholders the amount that market makers expect to lose to the repurchasing firm, that is, to the managers and other remaining shareholders. Thus, everything else equal, selling shareholders’ loss should equal the gains to managers and other remaining shareholders from informationally-driven repurchases. Ignoring efficiency effects, information-based repurchases should be zero sum, consistent with the analysis in Part III.A.

However, informed repurchasing is not sum zero as between managers and public shareholders. When managers repurchase shares because they know the stock is underpriced, they have an incentive to refrain from selling their own shares. Indeed, managers tend to buy shares for their personal accounts around the time they announce repurchases, presumably because they have information indicating that the stock is underpriced.¹¹⁴ To be sure, liquidity needs may force managers to sell shares even when they know the stock is underpriced, and thus there may be situations in which managers both sell their own shares and repurchase shares at a low price. But knowing that the stock is underpriced, managers will sell their shares at the same time as they are engaging in a bargain repurchase only if they have no other choice. Thus, on balance, managers are more likely than any given public shareholder to be remaining rather than selling shareholders when the firm conducts bargain repurchases. As a result, managers systematically gain from informationally-based repurchases, while public shareholders, on balance, lose.

IV. ADDITIONAL COSTS TO SHAREHOLDERS

Part III explained that managers can and do use repurchases for information-based trading and that such repurchases systematically transfer value from public shareholders to managers. This Part shows that the use of repurchases to buy stock at a low price can further hurt shareholders by distorting managers’ decision-making in ways that reduce aggregate shareholder value. Section A describes how repurchases, by tying the timing

¹¹⁴ See Raad & Wu, *supra* note 6.

and amount of cash distributions to the gap between the price of the stock and its actual value can distort managers' payout decisions. It also considers the possibility that informationally-motivated repurchases might actually increase shareholder value by mitigating managers' well-known tendency to retain excess cash. Section B examines the other perverse incentives that can be created by informationally-motivated repurchases. Managers can profit from information-based repurchases only if there is a gap between the price of the stock and its actual value. Thus, such repurchases may cause managers to delay the release of good news, reduce the overall level of disclosure, and to pursue strategies and investments that reduce transparency, even when they do not maximize shareholder value. Section C explains why, in light of the analysis offered in Sections A and B, repurchases' effect on aggregate shareholder value cannot be inferred from the market's generally positive reaction to share repurchase announcements. It shows that repurchase announcements might boost the price of the stock even in a world where the use of informationally-driven repurchases is known to destroy shareholder value.

A. Payout Distortions

This Section shows that repurchases, by linking cash distributions to the gap between the price of the stock and its actual value, can lead managers to make payout decisions that do not increase aggregate shareholder value. In particular, it shows that informationally-based repurchases can lead to two types of payout distortions: (1) "cash-hoarding" and (2) "cash squandering." I discuss each of these distortions in turn. I then consider the possibility that informationally-driven repurchases might actually improve payout policy by causing managers to distribute cash they would otherwise inefficiently retain.

1. Cash Hoarding

From the perspective of shareholders as a group, the firm should distribute cash – whether through a repurchase or dividend -- if and only if the funds can earn higher returns for shareholders outside the firm. Whether the firm should distribute cash thus depends only on (a) the marginal return

from investing in the firm's projects and operations and (b) the marginal return from investing in projects available to shareholders outside the firm. Distributing cash increases the size of shareholders' pie if and only if (b) exceeds (a).

Suppose a firm were to use a repurchase to distribute the cash. The repurchase would not only move cash from firm projects to investments outside the firm but also transfer value *among* shareholders whenever the stock price does not reflect the shares' actual value. If the stock is overpriced, the repurchase will transfer value to selling shareholders from remaining shareholders. If the stock is underpriced, the repurchase transfers value from selling shareholders to remaining shareholders. However, such redistribution is zero-sum and does not affect total shareholder value. From an aggregate shareholder perspective, such transfers should be completely disregarded in determining the optimal use of the firm's funds.

However, in making payout decisions managers naturally can be expected not to focus on aggregate shareholder value but rather on what makes them personally better off. And, as we saw in Part III, managers can use the firm's cash to benefit themselves and other remaining shareholders by buying selling shareholders' stock at a low price. Thus, managers' inside information affects the timing and amount of cash distributions, moving payout decisions away from what would be best for shareholders as a group.

The first potential distortion to payout policy is that informationally-driven repurchases might lead managers to retain too much cash. By retaining cash, managers give themselves the ability to repurchase shares in the future should the stock become underpriced. Thus, in deciding whether paying out cash makes them better off, managers will take the possible gains from future bargain repurchases into account. This, in turn, can bias managers in favor of retaining excess cash rather than paying it out currently.

To be sure, the potential benefit of future bargain repurchases will not always be sufficient to induce managers to retain cash. If the cash would generate sufficiently low returns while sitting in the firm, if the prospects for information-based repurchases are not great, or if the returns from investing the cash outside the firm are sufficiently high, managers will distribute the cash even though doing so reduces their ability to engage in information-based repurchases in the future. However, on the margin, retaining the

ability to buy the stock at a bargain price may cause managers to distribute less cash than they would otherwise.

A simple numerical example can be used to illustrate this point. Suppose that managers own 20% of ABC's shares. ABC has \$100 million in idle cash that earns the firm 5% annually in a money market account. If the cash were distributed, shareholders would have opportunities to invest the cash in projects that would earn 10% per year. The managers must decide whether to distribute the \$100 million on January 1st or at the end of the year, on December 31st. Thus, shareholders would enjoy an aggregate benefit of \$5 million annually were the money distributed on January 1st. However, suppose further that, on December 31st, the stock might be underpriced or overpriced. If ABC were to keep the \$100 million in cash, there would a 40% chance that it could buy back \$100 million of stock that is actually worth \$125 million.

From the point of view of shareholders as a group, the ability of the firm to buy \$125 million of stock from selling shareholders for \$100 million has an expected value of \$0. It represents a mere transfer of value among shareholders that selling shareholders will pay for through a reduced bid price. From an aggregate shareholder perspective, the value-maximizing strategy would be to distribute the cash on January 1st so that it could earn shareholders an extra \$5 million annually.

Now consider managers' incentive. If ABC issues a \$100 million dividend on January 1st, managers will receive \$20 million (20% of \$100 million) and invest it at 10% during the year, earning \$2 million by the end of the year and leaving them with \$22 million on December 31st. If ABC retains the cash, the firm will earn \$5 million of interest on the funds, of which managers' pro rata share is \$1 million. There are two possible outcomes. With 40% probability, in addition, managers and remaining shareholders can use the \$100 million to purchase \$125 million in stock from selling shareholders, yielding \$25 million (20% of \$125 million) for managers. With 60% probability, the firm will simply retain the \$100 million, of which managers' pro rata share is \$20 million. Thus, the expected value to managers of retaining the \$100 million of cash is \$23 million ($\$1 \text{ million} + 40\% \times \$25 \text{ million} + 60\% \times \20 million), which exceeds by \$1 million the value to them of distributing the cash on January 1st.

To be sure, if capital markets were perfect, this payout distortion would not arise. If the capital markets were frictionless, ABC's managers could distribute the \$100 million on January 1st, enabling shareholders to earn higher returns on the cash outside the firm, and then – if the stock were underpriced -- borrow \$100 million on December 31st to fund a repurchase. However, as economists have long understood, capital markets do not work perfectly. Borrowing takes time, involves transaction costs, and is not always feasible. For example, ABC might be barred by its loan covenants with existing lenders from borrowing additional \$100 million. In addition, risk-averse managers may prefer not to increase the firm's debt burden in order to reduce the risk and personal cost of financial distress. Thus, managers wishing to preserve the ability to engage in bargain repurchases cannot count on being able to borrow the necessary funds should the opportunity arise. As a result, they will have an incentive to retain excess cash – even when shareholder value would be increased by distributing the cash to shareholders.

2. Cash Squandering

In the same way that the prospect of future bargain repurchases can cause managers to retain cash that from shareholders' perspective should be distributed immediately, the possibility of immediate profits from informed repurchasing can cause managers to distribute cash that should be invested in the firm's own projects. Thus, the second problem with linking payout policy to the stock price is that it might sometimes encourage managers to “squander cash”—that is, to pay out too much.

Again, from the perspective of shareholders as a group, the firm should distribute cash if and only if the cash can earn higher returns for shareholders outside than firm. Whether the firm should distribute cash thus depends only on (a) the marginal return from investing in the firm's projects and operations and (b) the marginal return from investing in projects available to shareholders outside the firm. From an aggregate shareholder perspective, remaining shareholders' profits from bargain repurchases should be ignored because they are offset by the resulting losses to selling shareholders.

However, in making payout decisions managers naturally can be expected to focus on what makes them better off – not on what makes all shareholders best off. And in deciding whether to pay out cash currently, managers will consider whether their private information indicates the stock is underpriced. If their inside information suggests the stock can be repurchased at a bargain price, this may lead them to buy back stock even when the cash would generate more value for shareholders if left in the firm.

Suppose, as in Diagram 3 below, that A and B each own 50 percent of XYZ Corporation. The market values XYZ at \$200, or \$100 per share. However, the manager (A) knows that XYZ is actually worth \$300. In the absence of a repurchase, A’s 50 percent interest is worth \$150 (50% x \$300). However, A contemplates having XYZ Corporation repurchase B’s share for \$100, \$50 less than it is actually worth. In the absence of an efficiency effect, such a repurchase would transfer \$50 to A (by leaving him with 100 percent of a firm worth \$200).

However, suppose there would be some costs to such a repurchase. Specifically, suppose that such a repurchase would reduce XYZ’s value by an extra \$25 (beyond the \$100 paid out to B) because XYZ would need to forego certain high value projects in order to “finance” the repurchase. Nevertheless, A decides to go forward with the repurchase, because at the end of the repurchase he will own 100 percent of a firm worth \$175, while in the absence of a repurchase he would own 50 percent of a firm worth \$300.

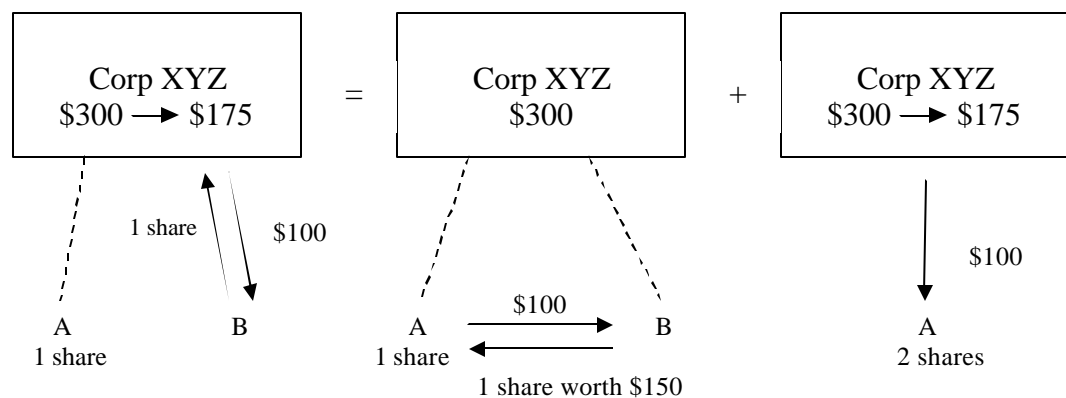


Diagram 3

To be sure, a firm might be able to borrow money to fund the repurchase, which would reduce the problem of distributing cash better invested in the corporation. However, borrowing might be difficult, either because bond covenants prohibit it or because it takes too much time, during which the underpricing might disappear. Even if borrowing were possible, managers might personally prefer not to increase the firm's debt burden and the likelihood of financial distress, which can be personally costly for them.

There is some evidence consistent with at least some repurchases reducing firm value. After repurchases, operating profits tend to decline – and the operating profits of firms more likely to be engaged in information-based trading– those that repurchase infrequently, have greater information asymmetry, and have more managerial ownership– tend to decline more than others.¹¹⁵ Economists have found it to be “surprising” that there is no evidence of improved operating performance following repurchases.¹¹⁶ The analysis I offer suggests, however, that such decline could be the consequence of cash squandering.

3. Do Repurchases Induce Managers to Distribute Excess Cash?

It is well known that managers generally have an excessive incentive to retain cash rather than distribute it to shareholders. Managers benefit from retaining cash in two ways. First, the cash enables them to expand the corporate empire and thereby increase their perks and prestige. Second, the cash provides a cushion in the event of a downturn, reducing managers' cost of performing badly.

Repurchases might appear useful in counteracting managers' tendency to retain too much cash. In particular, the profits generated by bargain-price repurchases might encourage managers to distribute cash that, from the shareholders' perspective, should be paid out but managers might not otherwise distribute. To be sure, the distribution of such cash would reduce managers' ability to build empires and to cushion themselves from poor

¹¹⁵ Murali Jagannathan and Clifford Stephens, *Motives for Multiple Open-Market Repurchase Programs*, 32 FIN. MAN. 71, 83 (2003).

¹¹⁶ Murali Jagannathan and Clifford Stephens, *Motives for Multiple Open-Market Repurchase Programs*, 32 FIN. MAN. 71, 90 (2003).

performance. However, in some cases managers' profits from repurchasing at a low price might be sufficiently high to offset these personal costs and thereby motivate managers to distribute the cash.

While one cannot rule out the possibility that informationally-driven repurchases mitigate the problem of excessive cash retention, both theory and the limited available empirical data suggest that this is not the case. As a matter of theory, tying payout policy to managers' inside information about the stock can lead both to cash squandering—the problem of overpayout—and cash hoarding—the problem of underpayout. To the extent that informationally-based repurchases leads to reduced payouts, repurchases cannot mitigate the problem of managers hoarding free cash. Indeed, in many cases, bargain repurchases – or, more specifically, the prospect of future profits from such repurchases – will exacerbate the problem.

Moreover, even if the cash-squandering effect of informationally-driven repurchases mitigated the problem of excessive cash retention, it would do so at a cost. While managers might in aggregate distribute too little cash, this does not mean that at any given moment all firms have cash that should be distributed. Rather, it is likely that there are firms where the distribution of additional cash to shareholders would make shareholders worse off as a group. In these situations, the cash-squandering effect of informationally-driven repurchases would make shareholders worse off. In other words, such repurchases might cause managers to increase cash distributions both in firms with excess cash and those without, and the cost associated with the latter could outweigh the benefit associated with the former.

Empirically, there is little evidence that the increasing use of repurchases has led to a reduction in free cash. If the use of repurchases caused managers to distribute more free cash, one would expect, everything else equal, that payout rates would increase as managers substituted repurchases for dividends. However, aggregate payout data suggest that the increasing use of share repurchases is not boosting payouts.¹¹⁷ During the period between 1974 and 1998, the average repurchase-payout to earnings ratio (the amount of cash distributed through share repurchases, divided by

¹¹⁷ See, e.g., Gustavo Grullon & Roni Michaely, *Dividends, Share Repurchases, and the Substitution Hypothesis* (2001) (working paper, 1); Dittmar & Dittmar, *supra* note 24.

earnings) increased from 3.7 percent to 13.6 percent, and the average dividend-payout to earnings ratio declined from 22.3 percent to 13.8 percent.¹¹⁸ However, the average payout to earnings ratio for publicly traded U.S. firms has remained fairly constant during the period between 1974 and 1998, at around 26 to 28 percent.¹¹⁹

To be sure, the fact that the payout to earnings ratio has remained stable for twenty-five years does not necessarily mean that managers' tendency to hoard excess cash remains unchanged. It is possible that during this period managers have been able to find more productive uses for their firms' cash. If so, the amount of excess cash at managers' disposal might have declined even as payout rates remained the same. This would mean that more excess cash is being distributed now than before. Such a story would be consistent with repurchases boosting payouts.

However, the opposite story could be true. It is possible that during this twenty-five-year period excess cash flow increased rather than decreased. If so, the fact that payout rates stayed the same would be consistent with the use of bargain repurchases reducing payouts. In any event, my main point here is that there is no evidence that the increasing use of repurchases has reduced the problem of excessive cash retention.

Finally, even if informationally-driven repurchases mitigate excessive cash retention, there is a much more straightforward way to addressing the problem: shifting some of the decision-making power over cash flows to shareholders. Indeed, a number of commentators have proposed mechanisms that would allow shareholders collectively to force managers to distribute excess cash.¹²⁰ Preserving managers' ability to use inside information in

¹¹⁸ See Grullon & Ikenberry, *supra* note 3 at 41. Not all of the reduction in dividends is caused by the increasing use of repurchases. See Fama & French, *supra* note 10 (attributing some of the reduction in dividends to changes in the mix of publicly traded firms (more small firms with low earnings and high growth rates, which tend not to distribute cash)); Yakov Amihud & Kefei Li, *The Declining Information Content of Dividend Announcements and the Effect of Institutional Holdings*, working paper (2002) (reporting that firms issue fewer dividends because they convey less information than previously).

¹¹⁹ See Grullon & Ikenberry, *supra* note 3, at 41.

¹²⁰ See Merritt B. Fox, FINANCE AND INDUSTRIAL PERFORMANCE IN A DYNAMIC ECONOMY (1987); Lucian Arye Bebchuk, *Empowering Shareholders*, working paper (2003); Zohar Goshen, *Shareholder Dividend Options*, 104 Yale L.J. 881 (1995).

making repurchase decisions would appear to be at best an unreliable --- and at worst costly and counterproductive --- way of achieving the same result.

B. Managers' Other Perverse Incentives

In Part IV.A we saw that informationally-driven repurchases can distort payout policy by causing manager to pay out too much or too little. Such repurchases can also adversely affect other managerial decisions. First, managers able to use repurchases to buy stock at a low price have an incentive to delay disclosure of inside information and to reduce overall corporate transparency. Second, the use of share repurchases for such purposes encourages managers to invest in projects that are difficult for outsiders to assess, whether or not these projects are value-maximizing for shareholders as a group, in order to increase information asymmetry between themselves and public shareholders so they can make more profits from repurchases.

1. Reduced and Delayed Disclosure

Insiders cannot profit from their access to nonpublic information unless the stock price does not reflect that information. As soon as the information becomes public and incorporated in the stock price, insiders' ability to profit from their access to private information vanishes. Thus, it is well understood that managers who can trade on inside information have an incentive to delay disclosure of nonpublic information to the market, or even misreport such information (e.g., through fictitious earnings) in order to profit from their access to inside information.¹²¹ The use of share repurchases for informed trading exacerbates this problem by providing managers additional incentive to maintain or increase information asymmetry.

¹²¹ See Fried, *supra* note x, at n.54.

2. Distorted Choice of Projects

Informationally-driven repurchases can also distort managers' choice of projects. From shareholders' perspective, managers should choose those projects that create the most expected value for shareholders. If Project A has an expected value of \$1 million, and Project B has an expected value of \$X, and managers must choose between Project A and Project B, shareholders would prefer managers to choose Project B if and only if \$X is greater than \$ 1 million.

Managers able to use inside information in their repurchase decisions, however, will consider not only the expected value of Project B relative to Project A but also their ability under each project to profit from their access to inside information. And their ability to profit from their access to inside information will in turn depend on the expected difference between the trading price of the stock and the actual value of the stock during the life of the project – that is, until its final payouts are realized. As a result, managers may have an incentive to prefer projects that are more opaque to the market and harder for investors to value. Managers might also have an incentive to choose projects with great variance in payoffs, even if they generate less value for shareholders as a group.

C. Inferring the Desirability of Information-Based Repurchases from Announcement Returns

Managers tend to announce repurchases when the stock is underpriced. Thus the announcement signals that the stock, in expected value terms, is underpriced, boosting the stock price. However, one cannot infer the desirability of repurchases for shareholders based on the stock market's reaction to their announcement. Indeed, as I explain, repurchase announcements could boost stock prices even in a world where everyone knows that repurchases reduce aggregate shareholder value.

The analysis in Part III focused solely on the distributional effects of repurchases, putting aside their potential efficiency effects. It showed that when managers are able to use repurchases to buy stock at a low price an announcement will tend to boost the stock price by signaling that the stock is,

in expected value terms, likely to be underpriced. Importantly, this price rise occurs even when the repurchase has no effect on ex ante aggregate shareholder value.

If the stock price rises in response to a repurchase announcement even when the repurchase does not create aggregate shareholder value, the stock price can also rise when informationally-driven repurchases destroy value. First, information-based repurchasing can impose costs on shareholders even before a repurchase occurs – such as distorted investment decisions. Those ex ante costs will not be reflected in the market's reaction to the repurchase announcement. Second, even if informationally-driven repurchases only impose costs on shareholders at the time of the repurchase, the information effects of the repurchase announcement may well exceed these cost effects, generating a net increase in the stock price. Each of these points is addressed in turn.

1. Ex Ante Costs

The stock price reaction to a repurchase announcement reflects the information transmitted by the announcement. To the extent that repurchases impose costs on shareholders even before the announcement, those costs will not be reflected in the market's response to the announcement.

Suppose for example, that informationally-based repurchases exacerbate inefficient cash hoarding: managers retain cash to preserve the option of engaging in bargain repurchases, even when from an aggregate shareholder perspective the cash would generate higher returns outside the firm. The cash hoarding costs imposed by such repurchases are incurred before the repurchase announcement. During this period, the return on the funds is lower than it would have been outside the firm. Should the firm announce a repurchase, signaling that the stock is underpriced, this cost will not be reflected in the market's reaction. Indeed, the higher is this ex ante cost, the greater will be the stock market's reaction to the announcement -- because the announcement will not only signal that the stock is, in expected value terms, underpriced, but also that the excess cash sitting idle in the firm will finally be distributed to investors. Paradoxically then, the greater the

cash-hoarding cost informationally-driven repurchases impose on shareholders, the more positive will be the stock market's reaction to a repurchase. As a result, the price reaction fails to capture the overall effect of informationally-driven repurchases on shareholders.

Bargain repurchases can impose another ex ante cost on shareholders by distorting managers' investment decisions. As discussed above, opaque investments increase informational asymmetry between managers and public shareholders, enabling managers to profit more from informationally-driven repurchases. Thus, managers able to use inside information in repurchasing shares have an incentive to favor opaque investments over transparent investments even when the latter maximize aggregate shareholder value. To the extent that managers choose investments that do not generate the most value for shareholders, this cost will also not be reflected in the stock market's reaction to a repurchase announcement.

2. Ex Post Costs

Having seen that the stock market is likely to react positively to repurchase announcements even when informationally-based repurchases are likely to destroy shareholder value ex ante, let us now consider the inferences one can draw about repurchases' ex post effect. As Part IV.A.2 explained, informationally-driven repurchases can cause managers to squander cash that, from an aggregate shareholder perspective, should be retained by the firm. As we will see, even in a world in which all repurchases waste shareholder value ex post, a share repurchase announcement could cause the price of the stock to increase. As long as the informational effect on the share price exceeds the reduction in the share price caused by the cash squandering, the market will appear to "greet" the repurchase announcement by boosting the price of the stock.

Returning to the example used in Part III.D., again suppose that the shares of ABC are actually worth either \$8/share or \$12/share, with equal probability. If the stock is worth \$12/share, there is a 30% likelihood that ABC will tomorrow announce a repurchase and then repurchase shares. If the stock is worth \$8/share, there is a 10% chance that ABC will announce a

repurchase tomorrow for the purpose of boosting its stock price so that managers can sell their shares.

But suppose now that if ABC actually *conducts* a repurchase, it will reduce the value of each share from \$12 to \$11 by squandering needed cash. Still, if the firm announces a repurchase, the market will infer that the expected value of the stock is \$10.75,¹²² boosting the stock price. Whether the stock is in fact worth \$12 or \$8 (pre-repurchase), selling shareholders will be able to sell their stock for more. If the firm fails to announce a repurchase, the stock price will drop to \$9.75, and selling shareholders will receive less for their shares. There is an 80% likelihood of no repurchase announcement and a 20% likelihood of a repurchase announcement. Thus, ex ante, the stock will trade at \$9.95 per share rather than \$10 because of the possibility that cash will be squandered in the event of a repurchase. Still the stock price will increase when a repurchase is announced, because the informational effect of the announcement (suggesting that the stock is, before repurchase, worth an expected value of \$11 per share) exceeds the expected loss of \$.75.

It is important to emphasize that I am not claiming that all repurchases waste value—or even that most repurchases waste value. Rather, my claim is that when repurchases can be used to buy stock at a low price, managers may have an incentive to squander cash, and that even in a hypothetical world in which all repurchases squander cash, reducing aggregate shareholder value, repurchase announcements might elicit a positive reaction from investors. Thus, the fact that repurchase announcements are often greeted by stock price increases does not demonstrate that the repurchases that are announced actually benefit shareholders.

V. USING ADVANCE DISCLOSURE TO REDUCE INFORMATION-BASED REPURCHASING

This Part proposes advance disclosure as a means of reducing managers' ability to use inside information in repurchasing shares and the resulting distortions. Under this approach, repurchasing firms would be required to provide specific information about their repurchase orders before

¹²² The expected value of ABC's stock, given the repurchase announcement, is $(30\% \times \$11 + 10\% \times \$8) / (40\%)$.

their brokers execute them. Part V.A presents and describes the pre-repurchase disclosure rule. Part V.B explains how pre-repurchase disclosure reduces managers' ability to profit from informed repurchasing through its effects on the trading decisions of both managers and investors. Part V.C describes its benefits: reduced cash hoarding and cash squandering, and improved disclosure and investment incentives. Part V.D considers the potential costs of the proposed approach. I explain why pre-repurchase disclosure would not reduce or undermine the potential benefits of share repurchases that have been identified: shareholder-level tax and transaction-cost savings, increased financial flexibility for the firm, and a means for signaling underpricing, improving liquidity, and funding employee stock option plans. I also explain why advance disclosure will not deter managers from undertaking value-increasing repurchases.

A. The Advance Disclosure Rule

As Part II.C explained, currently managers must announce their repurchases only when they initiate a buyback program, which might be well before the firm repurchases its first share. These announcements are intentionally vague, so as to leave managers maximum discretion. They *might* indicate the maximum number of shares to be acquired, or the maximum amount to be spent on repurchases. They *might* indicate the time period over which managers expect to repurchase shares. They never commit managers to repurchase a single share, let alone indicate the prices at which those repurchases would be conducted. Indeed, many firms announcing repurchases never repurchase a single share.

Under the proposal I present, managers would be required to provide specific, detailed information about their repurchases as they actually conduct them. In particular, managers would be required to announce the specific purchase instructions being given to the firm's broker before those orders could be executed. For example, if the firm wishes to instruct the broker to "buy up to 200,000 shares over the next five trading days, at a price of \$25 or better," it must first disclose to the market that it will issue that particular instruction. When disclosing its purchase orders, the firm could include any other information that it wishes to communicate to the market. Thus, for

example, if the firm knew that it would not be buying more than 5,000 shares over the next month, it could choose to share that information as well. The firm would also be required to report, in its quarterly filings with the SEC, all executed transactions.

For purposes of illustration, I will assume that firms must disclose their buy orders the day before the broker is permitted to execute them. However, it is not my intention here to specify precisely how far in advance of trading such an announcement should be made. The optimal notice period would depend on a number of factors, especially the market's ability to absorb the information contained in the repurchase announcement.

The disclosure would be made through the same business news channels that firms use to release inside information they believe to be "material." In addition, firms would be required to file the announcement with the SEC's Electronic Data Gathering and Retrieval system ("EDGAR"), which can make the information available to the market upon its arrival at the SEC. As is the case with managers' own trading, firms might also be required to post the information on their corporate websites.

Although Part V.B describes in more detail how pre-repurchase disclosure will reduce the profits from informed repurchasing and the resulting distortions, it is worth providing a brief overview of how the rule would work. Following the disclosure of an intended repurchase, market participants could adjust the price at which they are willing to trade to reflect the likelihood of underpricing signaled by the firm's order. Suppose, for example, that on Monday, when ABC stock is trading for \$10, the firm announces that, on Tuesday, it will submit an order to buy 20,000 shares at a price of \$11 or lower. Knowing that there is a possibility that the firm is buying now because the managers believe, based on inside information, that the stock is underpriced, market participants who had been considering trading ABC stock on Tuesday and Wednesday might choose to modify or abandon their planned trades. Market participants who were considering selling shares of ABC stock might not go forward with these sales, or might increase the price at which they are willing to sell the stock. Market participants who were considering buying ABC stock might increase the price at which they are willing to buy it. Market participants who, prior to the firm's announcement, were not considering buying the stock might decide to

buy shares. The information provided by the announcement would, everything else being equal, increase the price at which those making a market in the stock are willing to buy and sell the stock. When the firm's repurchases are executed on Wednesday, it is likely to be executed at a higher price than if the firm had not disclosed the order in advance—to the extent that market participants believe that the managers are using the repurchase to trade on inside information.

The pre-repurchase disclosure requirement would not be difficult to enforce. As explained, the firm would be required to report to the SEC the details of actual trades after they are executed. Shareholders could easily learn whether the announced trades were in fact executed. Reported repurchases and announcements could also be matched to determine whether any trades had not been preceded by an announcement. Because the likelihood of detection would be so high, even the threat of very modest penalties should deter executives from deliberately seeking to evade the rule.

As Part III.C demonstrated, managers currently have an incentive to announce repurchases they have no intention of carrying out in order to boost the stock price before selling their own shares. To the extent advance disclosure of buy orders signals that the stock is underpriced, managers intending to sell shares might be tempted to repurchase shares in order to positively influence the stock price. For example, if managers owning 5 percent of the firm's shares announce that the firm will buy back 100,000 shares at \$10 or less, investors will understand that, in effect, managers are putting in a buy order for 5000 shares at \$10 or less. If the stock is trading at, say, \$8, such information might cause investors to bid up the price of the stock, allowing managers to sell their shares at a higher price than might have been possible. This, in turn, might lead to the very type of payout distortion advance disclosure is intended to address.

To prevent managers from using advance repurchase announcements to boost the price of the stock as they (secretly) sold their own shares, managers would also be required to disclose in advance their own intended trades—both purchases and sales—a proposal that I had made in earlier work.¹²³ Such advance disclosure would reveal to the market the net direction

¹²³ See Jesse M. Fried, *Reducing the Profitability of Corporate Insider Trading Through Pretrading Disclosure*, 71 S. CAL. L. REV. 303 (1998).

of managers' direct and indirect trades, allowing the market to draw the appropriate inferences about the actual value of the stock, and reducing managers' ability to manipulate the stock price by announcing buy orders.

In 2000, the SEC issued Rule 10b5-1, which creates a safe harbor from Rule 10b-5 liability for a repurchasing firm that delegates purchase decisions to a third party that does not have access to material inside information regarding the firm. The safe harbor also extends to trades conducted according to a pre-arranged plan, a binding contract, or irrevocable instructions that were not created at a time when the firm's management had material nonpublic information. Thus, a firm that delegates repurchase decisions to an uninformed third party or repurchases its own shares under a pre-arranged plan, contract, or irrevocable instructions would be insulated from Rule 10b-5 liability, even if the repurchase takes place at a time when the managers know material nonpublic information indicating that the stock price will increase.

Under my proposal, a firm entering into a Rule 10b5-1 arrangement would be required to announce the arrangement at the time it enters into it. Trades pursuant to the arrangement would also require pre-repurchase disclosure. Should the firm later decide to abandon a repurchase plan, it would be required to disclose that abandonment as well.¹²⁴

B. The Benefits of Advance Disclosure

This section first explains how pre-repurchase reduces managers' ability to use repurchases to make profits trading on their inside information and then explains how this will reduce the distortions to the firm's payout policy described in Part IV.

1. How Advance Disclosure Reduces Information-based Repurchase Profits

In earlier work, I showed that requiring insiders to disclose their intended own trades in advance would substantially reduce insiders' ability

¹²⁴ For an explanation of insiders' ability to exploit inside information using Rule 10b5-1 plans, see Jesse M. Fried, *Insider Abstention*, 113 YALE L.J. 455 (2003).

to use inside information in their own trading.¹²⁵ As I will explain, requiring firms to disclose in advance every intended repurchase would also reduce managers' ability to use such information in indirectly repurchasing shares.

Pre-repurchase disclosure reduces managers' ability to use repurchases to profit from their inside information through its effect on the trading decisions of market participants. To understand how investors are likely to react to pre-repurchase announcements, it is worth considering how they currently react to managers' currently required post-trading reports. Section 16(a) of the 1934 Act requires insiders to report their trades by the end of the second business day after the trade-date. Reporting services (e.g., the Insider Indicator, Invest/Net: Insider Trading Monitor, and Vickers On-Line) retrieve this information when it arrives at the SEC, analyze it, and distribute the information through on-line services and newsletters to market participants who use the information to determine whether there has been a pattern of trading activity suggesting that a company's insiders believe (based on their inside information) that the stock is over- or undervalued. Heavy net buying activity is often taken to indicate that the stock is undervalued; similarly, heavy net selling activity is often taken to mean the opposite. Among the factors investors take into account in "decoding" a particular trade are the size of that trade, the size of the trade relative to the insider's holdings and previous trades, whether the insider's previous trades have correlated with subsequent stock price movements, and recent trades by other company insiders. These market participants tend to increase their purchases whenever insiders' purchases are believed to signal the possibility that the stock is undervalued and increase their sales when insiders' sales are believed to signal the opposite.

Similarly, investors and market makers will follow the repurchase announcements of firms and attempt to interpret them in light of, among other things, the firm's repurchase history. Has the firm tended to repurchase shares in the past prior to periods in which there were abnormal positive stock returns? Or have the firm's previous repurchases not correlated with future price movements? Is the repurchase pursuant to a Rule 10b5-1 plan that was entered into years ago and is thus unlikely to be based on inside

¹²⁵ See Jesse M. Fried, *Reducing the Profitability of Corporate Insider Trading Through Pretrading Disclosure*, 71 S. CAL. L. REV. 303 (1998).

information? Has the firm been repurchasing unusually heavily recently? Using this information, as well as information market participants obtain about the trades of the managers themselves, investors will adjust the terms on which they are willing to buy and sell shares.

Market participants about to trade against the firm by selling shares on the day that the firm is buying may abandon their trades or seek a better limit order price. Market participants who find themselves trading in the same direction as the firm (that is, buying stock) may increase the size of their trades or accept a higher price on their limit orders. These adjustments, to the extent that they occur, would force the firm to trade at a less favorable price.

Of course, the market participants cannot know the exact motives for the repurchase. Thus, the adjustment in price caused by their trading would never, in any given case, precisely reflect the inside information, if any, behind a repurchase. Instead, the adjustment would at best reflect the expected value of the inside information communicated by the announcement. Nevertheless, the adjustment caused by the reactions of investors and market makers to the announcement should, in principle, systematically eliminate the profits that managers can make indirectly repurchasing on inside information, as the following simple example illustrates.

Suppose that ABC's announcement that it intends to buy 20,000 shares at \$11 or higher could mean either that its managers have inside information indicating that the stock, currently trading at \$10, is underpriced by \$2, or that managers have no particular inside information suggesting that the stock is underpriced but still wish to distribute cash other than through a dividend. Suppose that, based on ABC's previous repurchase history and other relevant information, traders believe there is a 75 percent chance that it is repurchasing to distribute cash and a 25 percent chance that ABC's managers know the stock is worth \$12. In that case, buyers may now be willing to pay \$10.50 ($75\% \times \$10 + 25\% \times \12) for the stock, and some sellers who otherwise would have sold for \$10 may now not sell for less than \$10.50. ABC must thus repurchase shares for \$10.50 instead of for the price that would have prevailed in the absence of pre-repurchase disclosure, \$10. On one hand, if ABC's managers are buying on inside information indicating that the stock is worth \$12, they and other remaining shareholders will make a profit of \$1.50

per share buying on inside information. On the other hand, if ABC is simply repurchasing to distribute cash, it will pay fifty cents more for shares than what they are worth.¹²⁶ In neither case will the adjustment reflect precisely the inside information, if any, behind the repurchase.

Over time, however, ABC's managers will not be able to use repurchases to transfer value from selling shareholders to managers and remaining shareholders, if the adjustment reflects the average value of the inside information on which ABC trades. For example, suppose that the stock is underpriced by \$2 one out of every four times ABC decides to repurchase stock and that it is priced properly the other three times. Suppose further that ABC buys 20,000 shares each time it repurchases. ABC should face a \$0.50 (25% x \$2) per share adjustment each time it trades, for a total adjustment on each trade of \$10,000 (\$0.50 x 20,000 shares). Over the course of the three non-information based repurchases, ABC will therefore face aggregate total adjustments of \$30,000, which is precisely the amount of profits (\$1.5 x 20,000 shares) that it makes on the one purchase based on inside information.

Of course, in reality, markets may not be completely efficient in absorbing information of the type transmitted by advance disclosure.¹²⁷ In such a case, adjustments will be smaller than they would be in a world of perfectly efficient markets. When firms announce their intention to repurchase, investors may not, on average, increase the price sufficiently to reflect the information transmitted by the pre-repurchase disclosure. These adjustments are likely to be substantial, especially in the case of firm with a history of well timed buybacks. As a result, they will significantly reduce the value that managers can transfer from public shareholders through the use of repurchases, over time.¹²⁸

¹²⁶ ABC could indicate that it is buying stock solely to distribute cash in its pre-trading disclosure to the SEC. However, market participants would understand that, regardless of its reason for the buyback, ABC's managers will have an incentive to give the impression that the sale is not information driven in order to minimize the adjustment. Thus, any such announcement is likely to be ignored. Instead, market participants will examine ABC's repurchase history and other pertinent information in order to assess the likelihood that the repurchase is information driven.

¹²⁷ See Ikenberry & Vermaelen, *supra* note 39; Wesley S. Chan, *Stock Price Reaction to News and No-news: Drift and Reversal after Headlines*, 70 J. FIN. ECON. 223, 224 (2003) (summarizing studies suggesting that markets sometimes under-react to news).

¹²⁸ It should be noted that to the extent markets under-react to public information,

2. Advance Disclosure's Effect on Payout, Disclosure and Investment Distortions

Part IV identified two types of payout distortions associated with the use of inside information in repurchasing shares: (1) cash-hoarding and (2) cash squandering. Managers anticipating the possibility of being able to use a repurchase to buy stock at a low price may have an incentive to hoard cash for that purpose even though, from the perspective of shareholders as a group, it would be better to distribute the cash immediately. Additionally, managers who know that the stock is underpriced might have an incentive to use cash that is better invested in the firm in order to repurchase shares at a low price. In both cases, the prospect of using the firm's cash for bargain repurchases distorts the managers' payout decisions.

As explained earlier, pre-repurchase disclosure causes market participants to bid up the stock price before the repurchase is effected. This, in turn, reduces managers' ability to use repurchases to buy stock at a low price and, on the margin, should reduce the distortion to payout policies. Managers will have less incentive to hoard cash inefficiently if they know that, should they wish to engage in bargain repurchases, the profits will be lower. Similarly, managers will have less incentive to squander cash by trying to buy back stock at a low price if the profits from doing so are lower.

Indeed, if the market were perfectly efficient in decoding and responding to repurchase announcements—and bidding up the price of the stock by the expected value of the information communicated by the announcement—these distortions would be completely eliminated. Managers would know that if they engage in information-based repurchasing today, they will simply give back the profits later because stock price adjustments to future repurchase announcements would be higher. As a result, managers would not hoard cash because of the possibility of buying back stock in the future at a low price. Nor would they have any incentive to

the problem of insider trading repurchases will be exacerbated because managers can use repurchases to trade not only on nonpublic information but also on public information that has not been fully compounded into the stock price.

take into account the price of the stock in deciding whether to distribute cash now through a repurchase.

C. The Costs of Advance Disclosure

The costs of pre-repurchase disclosure are low. The transaction costs associated with publicizing the firm's orders to its broker are trivial. Pre-repurchase disclosure would not reduce any of the potential benefits that have been attributed to repurchases. Such a rule would not affect the tax consequences of repurchases for shareholders or the shareholder-level transactions cost savings repurchases may provide by not requiring non-liquidity seeking shareholders to re-invest dividends. If in fact repurchases provide firms with more financial flexibility than dividends, that flexibility benefit would not be undermined. Firms could still use repurchases to provide stock for employee stock option programs. Pre-repurchase would not undermine the potential signaling benefit of repurchases, either. Indeed, any signaling benefit of open market repurchases would be enhanced by a requirement that the firm announce its specific repurchase plans, rather than merely issue a vague statement regarding its intent to possibly buy shares in the future. The detailed information conveyed by the proposed rule would indicate clearly to shareholders the prices at which managers believe a repurchase will make themselves and other remaining shareholders better off.

One might be concerned that pre-repurchase disclosure would discourage managers from distributing cash through repurchases, leading managers either (1) to hoard more cash or (2) distribute the cash through less tax-efficient dividends. However, it is important to keep in mind that the market will adjust in response to a repurchase announcement only to the extent market participants believe that managers have inside information indicating that the stock is underpriced. To the extent that the market does not believe that the repurchase announcement reflects the existence of such information, it will not bid up the price of the stock. Thus, managers can avoid adjustments by not using repurchases to engage in informed trading. For example, managers could enter into Rule 10b5-1 repurchase programs that commit the firm to repurchase a certain number of shares every period, regardless of the stock price. When such automatic trades are disclosed the

day before, investors will not infer that they are motivated by inside information, and accordingly will not bid up the stock price. On average, such a program should repurchase shares at a “fair” price and have the same inter-shareholder distributional consequences as a dividend.

VI. CONCLUSION

Public companies in the United States and elsewhere are increasingly using open market repurchases, rather than dividends, to distribute cash to shareholders. Academic commentators have generally viewed the growing use of repurchases as desirable for shareholders. These commentators have focused on the possible benefits of repurchases, which include shareholder-level tax savings, lower shareholder transaction costs, and greater financial flexibility for the firm. Such commentators, however, have paid little attention to the potential problems associated with repurchases.

This paper has shown that a share repurchase is economically equivalent to (1) the firm’s managers causing non-selling shareholders to buy shares directly from selling shareholders at the repurchase price, and (2) managers causing the firm to issue a dividend. Managers with inside information indicating that the stock is underpriced can thus use a repurchase to transfer value from selling shareholders to themselves and other remaining shareholders. Indeed, there is substantial evidence that managers frequently engage in such information-based repurchasing.

From the perspective of shareholders as a group, it would be desirable for managers to distribute cash—whether through a dividend or repurchase—if, and only if, distributing the cash increases aggregate shareholder returns. Managers seeking to maximize shareholder returns would thus distribute cash if and only if doing so would increase the value of shareholders’ non-firm investments by more than it reduces the firm’s equity value.

By tying the firm’s payout policy to the stock price, repurchases can distort managers’ payout decisions, reducing aggregate shareholder returns. When the stock is not underpriced, managers able to use repurchases to trade against public shareholders may have an incentive to delay paying out cash that could earn higher returns outside the firm. Likewise, when the stock is

underpriced, managers may have an incentive to pay out cash that should be invested in the firm. In both cases, managers' desire to maximize the value of their own shares can lead them to act in ways that reduce the value available to shareholders as a group.

Because managers can use repurchases for information-based trading only if there is a gap between the price of the stock and its actual value, informationally-driven repurchases increase managers' incentive to create information asymmetry between themselves and public shareholders. As a result, managers able to engage in bargain repurchases can be expected to reduce overall corporate transparency and delay the disclosure of good news. Informationally-driven repurchases can therefore distort not only payout policy but also disclosure. In addition, the prospect of such repurchases can distort ex ante investment decisions, leading managers to prefer projects that have more volatile payoffs or are more opaque to investors, even when these projects do not maximize total shareholder value.

The key to curbing informationally-driven repurchases and the resulting distortions is to reduce managers' ability to use inside information in repurchasing shares. To that end, this paper has proposed requiring a repurchasing firm to disclose the details of its buy orders before the broker executes them. Market participants could use the disclosed repurchase orders to update their assessment of the stock's actual value, taking into account the firm's repurchase history, its financial condition, and managers' contemporaneous trading. To the extent the disclosure signals the possibility that the stock is underpriced, market participants will bid up the price of the stock before the repurchase order is executed, reducing managers' ability to profit from the stock being underpriced. Over time, as the paper has explained, these price adjustments will discourage managers from engaging in information-based repurchasing, and thereby reduce the resulting payout, disclosure, and investment distortions. Importantly, requiring firms to disclose in advance their repurchase orders would not undermine the potential benefits of repurchases, including their ability to lower shareholders' tax liability and transaction costs, provide greater financial flexibility for the firm, serve as a signaling mechanism, create additional liquidity, or acquire shares for employee stock option plans. Regulators interested in improving

corporate payout decisions should therefore consider imposing a pre-repurchase disclosure requirement on publicly traded companies.