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“Share Repurchases, Equity Issuances, and the Optimal Design of Executive Pay”

Jesse M. Fried

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SHARE REPURCHASES, EQUITY ISSUANCES, AND THE OPTIMAL DESIGN OF EXECUTIVE PAY

Jesse M. Fried*

Abstract

This paper identifies a substantial flaw with standard equity-based pay arrangements: they distort executives' incentives when the firm buys and sells its own shares. In particular, executives are rewarded for engaging in share repurchases and equity issuances that reduce "shareholder value:" the amount of cash flowing to a firm's shareholders over time. The paper also puts forward a new approach to equity-based compensation that completely eliminates the identified distortions and is easy to implement.

Key words: executive compensation, executive pay, equity-based compensation, restricted shares, options, shares, stock, repurchases, buybacks, open market repurchases, repurchase tender offers, secondary offerings, seasoned equity offerings, equity issuances, agency costs, overvalued equity.

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I. Introduction

Public company executives in the U.S. receive an increasingly large amount of their pay in the form of equity compensation – restricted stock, stock options, and other incentives whose value increases with the share price. Among the 200 largest U.S. firms in 2009, on average two-thirds of CEO compensation came in the form of restricted stock and stock option grants.¹ Equity-based compensation is increasingly common in other countries as well.²

The purpose of equity-based compensation is to align executives' interests with those of the firm's shareholders.³ By tying executives' payoffs more closely to the stock price, executives have stronger incentives to generate value for shareholders. Not surprisingly, the use of equity-based pay has long been encouraged by investors, regulators, and academics.⁴

To be sure, the widespread practice of tying equity pay to the *short-term* stock price is increasingly seen as undesirable. As Lucian Bebchuk and I warned in 2004, such arrangements encourage executives to focus on short-term results, even at the

¹ See Equilar, *2009 CEO Benefits and Perquisites Reports* (July 2009).

² See Brian R. Cheffins and Randall S. Thomas, *The Globalization (Americanization?) of Executive Pay*, 1 BERKELEY BUS. L.J. 233, 246 (2004) (describing the increasing use of equity-based pay in Europe and Asia).

³ See Michael C. Jensen & Kevin J. Murphy, *CEO Incentives--It's Not How Much You Pay, But How*, 68 HARV. BUS. REV. 3, 138-149 (May-June 1990).

⁴ See, e.g., Jensen and Murphy, *supra* note x, at 139, 141 (urging boards to use more stock options to better tie equity pay to performance); Jeffrey N. Gordon, *'Say on Pay': Cautionary Notes on the U.K. Experience and the Case for Shareholder Opt-In*, 46 HARV. J. LEGIS. 323, 348 (2010) (explaining that the widespread embrace of stock options in the 1990s resulted, in part, from institutional investor pressure on firms to adopt this method of enhancing managerial incentives).

expense of long-term value.⁵ But this problem with current equity-based pay arrangements has not diminished enthusiasm for the use of equity compensation itself; it has merely led to increasing support for tying equity payoffs to the long-term stock price.⁶

This paper identifies an inherent flaw in standard equity pay arrangements – a flaw that arises whether an executive’s payoff is based on the short-term or long-term stock price. In particular, the paper shows that equity pay fails to tie executives’ payoffs to shareholder value: the amount of cash flowing to all the firm’s shareholders over time. This disconnect undermines executives’ incentives to generate shareholder value. In fact, equity pay perversely rewards executives for taking steps that destroy shareholder value.

The paper identifies and analyzes two distortions caused by standard equity-based pay arrangements. First, equity pay leads executives to engage in excessive share repurchases when the stock price is low. Specifically, executives are rewarded for engaging in bargain-price repurchases, even if the cash used for the repurchases would generate more shareholder value if invested in the firm.

⁵ See Lucian Bebchuk and Jesse Fried, *Pay Without Performance: The Unfulfilled Promise of Executive Compensation* (HARVARD UNIVERSITY PRESS, 2004), chapter 14 (analyzing problems resulting from the broad freedom of executives to unload equity incentives in the short-run and suggesting that executives be required to hold stock for the long term). We recently put forward more detailed recommendations for how such long-term holding requirements should be structured. See Lucian A. Bebchuk and Jesse M. Fried, *Paying for Long-Term Performance*, 158 U. PENN. L. REV. 1915 (2010) (explaining that executives should be allowed to unwind only a small fraction of their equity each year and that these limits should not terminate when the executive retires or shortly thereafter).

⁶ See, e.g., Sanjai Bhagat & Roberta Romano, *Reforming Executive Compensation: Focusing and Committing to the Long-Term*, 26_Yale J. Reg. 359 (2009) (suggesting that executives be paid only with restricted stock and restricted stock options and that such equity cannot be unwound until after retirement).

Second, equity pay can lead executives to engage in “cheap empire building” when the stock price is high. In particular, executives are currently rewarded for issuing inflated-price stock to finance investments that reduce shareholder value.⁷ For example, executives can boost the value of their equity by using inflated-price stock to acquire other firms even when the acquisitions destroy economic value.

The reason for these distortions is not complicated. Standard equity-based compensation ties an executive’s payoff only to the value flowing to a particular group of shareholders, whom I call “non-trading shareholders”: shareholders who neither sell any of their shares nor buy any additional shares until the executive cashes out her equity. Were these “non-trading shareholders” the firm’s only shareholders, equity pay would perfectly align the executive’s payoffs with shareholder value. Thus, executives would be rewarded if and only if they increased shareholder value.

However, there are two other groups of shareholders besides non-trading shareholders whose payoffs also must be taken into account: (1) “redeeming shareholders,” investors who sell shares back to the firm before the executive cashes out his equity, and (2) “investing shareholders,” investors who buy (additional) shares from the firm before the executive’s cash-out date. These shareholders either take money out of or put money into the firm. Thus, their payoffs must be included in calculating shareholder value: the net amount of cash flowing from the firm to shareholders over time.

Standard equity-based pay arrangements fail to take into account the value flowing to redeeming and investing shareholders, and thus fail to align executives’ payoffs with shareholder value.⁸ Instead, equity pay rewards executives

⁷ The sale of overpriced stock to finance value-wasting investments is one of the agency costs of overvalued equity described by Michael Jensen. See Michael Jensen, *Agency Costs of Overvalued Equity*, 34 FIN. MAN. 1, 10 (2005).

⁸ Standard equity-pay arrangements also fail to tie equity payoffs to the value flowing to other groups of shareholders. In particular, these standard arrangements fail to tie equity payoffs to the value flowing to

for transferring value to non-trading shareholders from redeeming shareholders (by buying the latter's shares at a low price) and investing shareholders (by selling them shares at an inflated price). In fact, equity pay rewards executives for engaging in such transactions even when the total value flowing to all three groups of shareholders is diminished.

After showing that standard equity-based pay gives rise to the identified distortions, the paper also puts forward a new "constant-share" approach to equity pay. Under this approach, executives would be required to sell some of their shares (or buy additional shares) whenever the firm repurchases its own stock (or issues new equity) so that executives' proportional ownership in the firm remains constant as the firm transacts in its own equity.

I show that this constant-share approach would perfectly tie equity executives' payoffs to shareholder value when the firm repurchases shares or issues new equity. In essence, executives would be required to be both redeeming shareholders and non-trading shareholders when the firm repurchases shares, and investing and non-trading shareholders when the firm issues shares. The constant-share approach would thus reward executives for engaging in repurchases and equity issuances if and only if they increase shareholder value - the value flowing to all the firm's shareholders over time.

I also explain how the constant-share approach could easily be implemented. Indeed, it would be simple to use even in firms that frequently repurchase shares or issue new equity. Because the constant-share approach could provide substantial

shareholders who buy shares from, and sell shares to, other investors before the executive cashes out her stock.

However, the cash that changes hands when investors buy and sell a firm's shares to each other in the secondary market does not increase shareholder value, the total amount of value flowing to shareholders over time. Rather, trading in the secondary market merely redistributes the same shareholder value among different shareholders. Thus, the payoffs to these shareholders can be ignored when analyzing the extent to which standard equity-based arrangements tie pay to shareholder value.

benefits at a trivial cost, it should be of interest to regulators, investors, and boards seeking to better tie executive pay to shareholder value.

Before proceeding, I would like to make explicit my normative framework. My view is that executive compensation (and corporate governance arrangements more generally) should encourage executives to maximize what I call “shareholder value:” the value flowing to all of the firm’s current and future shareholders.⁹ In particular, executives should seek to maximize the net cash flow to all of the firm’s shareholders over time, where net cash flow is the cash received by shareholders from the firm via dividends and share repurchases less any cash paid by shareholders to the firm for their shares.¹⁰

An alternative view might be that firms should seek to maximize only the value flowing to a particular group of shareholders, such as current shareholders or current long-term shareholders. On this view, it would not be inappropriate to enrich these privileged shareholders at other shareholders’ expense. Indeed, it would be desirable to do so, even if the cost to other shareholders exceeds the benefit to the shareholders whose wealth is supposed to be maximized. However, from a social perspective, a dollar flowing to one shareholder is neither less nor more valuable than a dollar flowing to another shareholder. Thus, privileging current shareholders or current

⁹ In other work, I have described the amount of value flowing to all the firm’s shareholders as “aggregate shareholder value.” See Jesse M. Fried, *Informed Trading and False Signaling with Open Market Repurchases*, 93 CAL. L. REV. 1232, 1331 (2005).

¹⁰ Other commentators share this view. See, e.g., Jensen, *supra* note x, at 16 (arguing that future shareholders count as much as current shareholders). I assume, for purposes of this paper, that shareholders are the exclusive residual claimants of a firm’s cash flow. Thus, maximizing shareholder value is equivalent to maximizing the value of the firm itself. This assumption, made purely for expositional convenience, does not affect the paper’s analysis about the distortions caused by standard equity-based pay arrangements or the desirability of the constant-share proposal this paper puts forward.

long-term shareholders at others' expense, as this alternative view requires, makes little economic sense.

I would also like to note that, in this paper, I abstract from the question of how much (and what elements of) shareholder value should be paid to executives. That is, I do not consider here how much equity executives should receive, whether it should take the form of stock or options, or the extent to which the payoffs from these instruments should be designed to filter out changes in the stock price that are due to market-wide or industry-wide fluctuations. My focus is on ensuring that, whatever equity incentives are used, the payoffs are primarily based on shareholder value – the amount of cash flowing to all shareholders over time -- rather than the payoffs to particular subset of shareholders, such as current shareholders or current long-term shareholders.

Finally, two caveats. First, there may well be substantial obstacles to convincing boards to adopt the constant-share approach. The constant-share approach will make it much more difficult for executives to personally benefit from using inside information to indirectly buy undervalued stock through bargain-price repurchases. It will also make it harder for executives to indirectly sell stock to public shareholders at a high price. Thus, executives can be expected to resist adoption of the constant-share approach.

Second, a board that had adopted the constant-share approach could choose to subtly undermine it. For example, it could promise to boost the amount of an executive's pay for conducting a repurchase or equity issuance that reduces shareholder value but which the board favors.¹¹ The executive would obviously have an incentive to conduct such transactions. The constant-share approach can only ensure that the executive's *existing* equity does not inadvertently create an incentive to engage in value-reducing repurchases and share issuances.

¹¹ There is evidence that boards boost the compensation of acquiring-firm CEOs who engage in acquisitions that hurt their own shareholders. See Jarrad Harford and Kai Li, *Decoupling CEO Wealth and Firm Performance: The Case of Acquiring CEOs*, 62 J. FIN. 917, 919 (2007).

However, the question of how to persuade firms to adopt (and not subvert) the constant-share approach is beyond the scope of this paper. The two main purposes of the paper are as follows: (1) to demonstrate a critical flaw of equity-based pay, that it rewards executives for engaging in excessive repurchases and equity issuances; and (2) to put forward a new approach to equity-based pay that could, at little cost, remedy this flaw by rewarding executives for engaging in repurchases and equity issuances only if the transactions increase shareholder value.

The remainder of the paper is organized as follows. Part II shows that standard equity-based pay arrangements reward executives for engaging in excessive repurchases when the stock price is low. It begins by describing the widespread and increasing use of repurchases to distribute cash. It then shows that executives can boost the value of their equity by causing the firm to buy back shares when the shares are underpriced. Part II next explains how repurchases can reduce shareholder value by distributing cash that should be invested in the firm's own projects. It concludes by demonstrating that executives are currently rewarded for conducting bargain-price repurchases even when they are value reducing.

Part III shows that standard equity-based pay arrangements incentivize executives to engage in cheap empire building when the stock price is high. It explains that firms frequently issue shares to fund various investments. It shows that executives can boost the value of their equity by having the firm issue equity when it is overpriced. Part III then demonstrates that the investments facilitated by equity issuances can reduce shareholder value and concludes by showing that executives are rewarded for inflated-price equity issuances even if the investments destroy shareholder value.

Part IV introduces the constant-share approach to equity pay, under which executives must maintain their proportional ownership as the firm transacts in its own stock. Such an approach, it shows, eliminates the incentive to engage in value-wasting share repurchases and cheap empire building created by standard equity-based pay arrangements. Part IV explains how the constant-share repurchase can be implemented at low

cost even in companies that frequently repurchase shares and issue stock. A conclusion follows.

II. EQUITY PAY AND REPURCHASES

In this Part, I explain why standard equity-based pay arrangements reward executives for engaging in repurchases that reduce shareholder value. Section A briefly discusses the growing use of repurchases as a means to distribute cash to shareholders. Section B shows that executives with equity-based pay arrangements have an incentive to undertake repurchases when the firm's stock price is low. The section then summarizes the considerable amount of evidence that executives frequently conduct such bargain-price repurchases. Section C explains how repurchases can reduce shareholder value by diverting cash from valuable firm projects. The section concludes by demonstrating that executives are rewarded for engaging in bargain-price repurchases even when they reduce shareholder value.

A. Widespread Use of Repurchases

Publicly traded U.S. firms annually generate hundreds of billions of dollars in earnings.¹² Each year, executives must decide how much of their firms' retained earnings should be distributed to shareholders. They must also decide the form that such distribution should take: dividends, repurchases, or a combination of both.

Share repurchases have become increasingly common and are now considered the dominant form of cash payout.¹³ Over 90% of U.S. public firms that distribute cash engage in repurchases.¹⁴ In 2007, S&P 500 firms distributed almost \$600

¹² See Gustavo Grullon & Roni Michaely, *Dividends, Share Repurchases, and the Substitution Hypothesis*, 57 J. FIN. 1649, 1655 (2002).

¹³ See Douglas J. Skinner, *The Evolving Relationship Between Earnings, Dividends, and Stock Repurchases*, 87 J. FIN. ECON. 582, 582 (2008).

¹⁴ See Skinner, *supra* note x, at 590. See also Gustavo Grullon & David L. Ikenberry, *What do We Know about Stock Repurchases?*, 13 J. APPLIED CORP. FIN. 31, 33-34 (2000).

billion through repurchases.¹⁵ Most repurchases take the form of open market repurchases in which the firm buys its own stock on the market through a broker.¹⁶

Repurchases offer a number of possible advantages over dividends.¹⁷ In many cases, they are a more tax efficient

¹⁵ See Standard & Poor's Press Release, "S&P 500 Buybacks Set Record of \$589 Billion in 2007," at www2.standardandpoors.com/.../040708_SP500_BUYBACK_PR.pd See also Paul A. Griffin and Ning Zhu, *Accounting Rules? Stock Buybacks and Stock Options: Additional Evidence* (working paper, December 15, 2008), at 1 (reporting \$1 trillion of repurchases market-wide in 2007).

¹⁶ See Grullon & Ikenberry, *supra* note X, at 33-34 (reporting that between 1980 and 1999, open-market programs comprised about 92% of the total share repurchase announcements and 91% of the total value of all repurchase announcements); Monica L. Banyai et al, *Errors in Estimating Share Repurchases*, 14 J. CORP. FIN. 460, 460 (2008) (finding that 84% of the 15,496 share repurchases announced in the Securities Data Company's database between 1985 and 2004 were open market purchases). The other form of repurchase is a repurchase tender offer (RTO), in which the firm offers to buy back its own stock directly from shareholders, usually at a premium over the market price. See Jesse M. Fried, *Insider Signaling and Insider Trading with Repurchase Tender Offers*, 67 U. CHI. L. REV. 421 (2000).

A small number of open market repurchases now take the form of accelerated share repurchase (ASR) programs. In an ASR, an investment bank sells short to a firm a large block of the firm's stock and then covers its short position through open-market purchases, usually within a year. See Thomas J. Chemmanur, Yingmei Cheng, Tiamning Zhang, *Why do Firms Undertake Accelerated Share Repurchases Programs?* (working paper, 2010) (reporting that there were \$77 billion of ASRs in 2007). Essentially, in an ASR, the firm hires an agent (an investment bank) to conduct the open market repurchase on the firm's behalf.

Because over 90% of share repurchases take the form of traditional OMRs, the discussion in the text will tend to focus on OMRs. However, for purposes of this paper, the mechanism by which firms repurchase stock -- traditional OMR, ASR, or RTO -- is irrelevant. Regardless of the repurchase mechanism used, executives with standard equity-based pay arrangements are rewarded for engaging in value-wasting repurchases.

¹⁷ See Fried, *Informed Trading*, *supra* note x, at 1336-1340 (describing the possible advantages of repurchases over dividends and explaining why many of them are likely to be quite modest).

mechanism than dividends for distributing cash. Repurchases also may enable firms to provide shares for increasingly popular stock option plans; dividends do not. Repurchases can also provide liquidity to a firm's shareholders, while dividends cannot. However, it is not clear whether these advantages can fully account for the increasing use of repurchases over time.¹⁸

A more promising explanation for the increasing use of repurchases is the growing use of equity to compensate executives. Under current stock option plans, the exercise price is generally not reduced to reflect the payment of dividends.¹⁹ As a result, executives' payoffs are reduced when they distribute cash via a dividend. A repurchase does not have this effect. Not surprisingly, executives with large option packages tend to pay lower dividends and distribute more cash through share repurchases.²⁰

However, even if the exercise price of stock options were adjusted for dividends, executives paid with stock options (or any other form of equity) would still often have an incentive to prefer repurchases to dividends. As will be seen shortly, an executive can benefit by having the firm repurchase

¹⁸ Id.

¹⁹ See Jeffrey R. Brown, Nellie Liang, and Scott Weisbrenner, *Executive Financial Incentives and Payout Policy: Firm Responses to the 2003 Dividend Tax Cut*, 62 J. FIN. 1935, 1936 (2007).

²⁰ See Christine Jolls, *Stock Repurchases and Incentive Compensation* (NAT'L BUREAU OF ECON. RESEARCH, Working Paper No. 6467, 1998), available at <http://www.nber.org/papers/w6467>; George Fenn & Nellie Liang, *Corporate Payout Policy and Managerial Stock Incentives*, 60 J. FIN. ECON. 45 (2001) (confirming Jolls' findings).

Executives paid with restricted stock will also have an incentive to repurchase shares rather than issue dividends if they are not entitled to receive the value of any dividends paid while the restricted stock is vesting. However, most executives compensated with restricted stock appear to be entitled to receive dividends while the stock is still vesting. See Phyllis Plitch, *Moving the Market: Executives Find Restricted Stock Pays Dividends From the Get-Go*, WALL STREET JOURNAL, 28 Feb 2005, C3 (reporting an estimate that 90% of U.S. publicly traded companies award dividends on unvested restricted stock).

shares when the stock is underpriced. In particular, such a repurchase is economically equivalent to the executive indirectly purchasing stock at a bargain price. A dividend would not have this effect.

B. Using Repurchases to Buy Low

Standard equity-based pay arrangements give executives a strong incentive to repurchase stock when the price is low. Indeed, there is substantial evidence that executives frequently engage in bargain-price repurchases. I also explain why bargain pricing persists after repurchase announcements are made.

1. Executives' Payoffs

When a firm's stock price exceeds or is less than its actual value, a repurchase effects a transfer among a firm's shareholders.²¹ As I have shown elsewhere, a repurchase is economically equivalent to the following two-step transaction.²² First, continuing (non-redeeming) shareholders directly purchase shares from redeeming shareholders at the repurchase price. Second, the firm issues a dividend equal to the dollar amount of the repurchase. Thus, conducting a stock buyback when the stock is underpriced transfers value from redeeming shareholders to continuing shareholders. Among these continuing shareholders are executives holding equity.²³

²¹ See Fried, *Informed Trading*, *supra* note x, at 1344-46.

²² *Id.*

²³ When a firm buys stock at a low price, the precise distributional effects depend on whether the redeeming shareholders would have otherwise sold their shares to new investors for the same price. If so, the redeeming shareholder cannot be said to "lose" any value as a result of the bargain-price repurchase. Instead, the repurchase deprives would-be new investors of a gain. For simplicity, however, I will assume that it is the redeeming shareholders that lose money as the result of the bargain-price repurchase. This assumption, made purely for expositional convenience, does not affect any of the paper's analysis.

A simple example can be used to illustrate how a bargain-price repurchase transfers value to executives holding equity in the firm. Consider ABC Corporation (“ABC”) that has two shares outstanding. One share is held by its CEO (“CEO”). The other share is held by public shareholders.

Suppose that if ABC does not repurchase any of its equity, it would distribute \$20 to shareholders upon liquidation (at “Liquidation Date”). ABC’s shareholder value – the net amount of cash flowing to ABC’s shareholders – would thus be \$20. The holder of each share, including CEO, would receive \$10 ($\$20/2$).

Now assume that ABC can conduct a bargain repurchase before Liquidation Date. Suppose that before Liquidation Date the stock trades at \$8 (\$2 less than its actual value of \$10) and ABC repurchases one share (the public shareholders’) at that price.²⁴ Assume that shareholder value is neither created nor destroyed as a result of the repurchase: the \$8 spent on the repurchase reduces ABC’s value by \$8, no more and no less.

What is CEO’s payoff in the event of a bargain price repurchase? At Liquidation Date, the CEO holding ABC’s remaining share receives \$12: the \$20 that would have otherwise been distributed to shareholders, less the \$8 spent on the repurchase. By conducting this bargain-price repurchase, CEO is \$2 better off.

Note that ABC’s shareholder value is not affected by this repurchase. In the event of a repurchase, ABC’s shareholder value is \$20, the same as it would have been absent the repurchase: the \$8 distributed through the repurchase, plus the \$12 distributed when the firm is sold.²⁵

²⁴ I assume that ABC does not make any other distributions (or sell any equity) before Liquidation Date.

²⁵ Because I assume that the repurchase does not destroy or create any value, it should not be surprising that shareholder value is the same. The repurchase affects only the way in which the value flows to shareholders. While absent a repurchase all the value would flow to shareholders when ABC is liquidated, now some of the value flows to shareholders through the repurchase before Liquidation Date. Obviously, I am ignoring the time value of money (or alternatively, assuming it is zero). This assumption, made purely for convenience, does not affect the analysis.

Thus, the bargain-price repurchase increases CEO's equity payoff without increasing shareholder value.

2. Evidence of Bargain Repurchases

Having seen that executives compensated with equity have an incentive to conduct bargain repurchases, I now turn to the considerable empirical evidence that they do so. This evidence includes (a) executives' own statements and behavior and (b) stock price movements following repurchase announcements.

a. Executives' Own Statements and Behavior

Executives themselves report that they use repurchases to buy stock when it is cheap. According to the authors of a major 2005 survey of financial executives regarding their firms' payout policies, "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."²⁶ According to the survey's organizers, "executives tell us that they accelerate (or initiate) share repurchases when their stock price is low."²⁷ There is also evidence that the desire to buy stock at a low price is driven by executives' equity compensation. In particular, executives are more likely to

²⁶ Alon Brav, Campbell R. Harvey, John R. Graham, John R. & Roni Michaely, *Payout Policy in the 21st Century*, 77 J. FIN. ECON. 483, 514 (2005).

²⁷ *Id.* at 514. Earlier studies yielded similar responses. When asked in a 1988 survey what was the most important circumstance precipitating a repurchase, 66% of the surveyed executives responded "low stock price," six times as many as the next most popular answer, "need for treasury stock." George P. Tsetsekos et al., *A Survey of Stock Repurchase Motivations and Practices of Major U.S. Corporations*, 7 J. APPLIED BUS. RES. 15, 17-18, tbl.2 (1991).

engage in bargain-price repurchases when they hold more equity.²⁸

Since late 2003, the SEC has required firms to disclose monthly volume and price data for repurchase activity in their quarterly filings. One study found that heavy repurchases are preceded by negative market-adjusted price movements and followed by positive market-adjusted price movements.²⁹ It also found that the average price paid for repurchased shares is less than the average price that month. Both of these findings provide further evidence that executives attempt to use repurchases to buy at a low price.³⁰

When conducting repurchases, executives do not appear content to exploit whatever underpricing may arise spontaneously in the market. Executives actively manipulate earnings and drive the stock price down around repurchases to increase the amount of value transferred to themselves and other continuing shareholders.³¹ Such earnings manipulation is more aggressive when the CEO's equity ownership is higher,

²⁸ See Raad & Wu, *supra* note x, at 57 (1995) (finding that abnormal returns following repurchase announcements, which are associated with pre-repurchase underpricing, are positively correlated with pre-buyback executive stock ownership). Moreover, infrequent repurchase announcers—those more likely to be engaged in bargain repurchasing than repurchasing to acquire stock for option programs—also tend to have higher levels of executive ownership. See Murali Jagannathan & Clifford Stephens, *Motives for Multiple Open-Market Repurchase Programs*, 32 FIN. MGMT. 71, 71-72 (2003).

²⁹ See Admedeo De Cesari, Susanne Espenlaub, Arif Khurshed, and Michael Simkovic, *Insider Ownership, Institutional Ownership, and the Timing of Open Market Stock Repurchases* (working paper, 2009), at 3.

³⁰ Insider trading restrictions are unable to prevent executives who know the stock is underpriced from having their firms purchase bargain-price stock. See Fried, *Informed Trading*, *supra* note x, at ____

³¹ See Guojin Gong, Louis Henock, and Amy Sun, *Earnings Management and Firm Performance Following Open-Market Repurchases*, 63 J. FIN. 947 (2008) (reporting that firms adjust accruals to decrease their reported earnings before stock repurchases).

thus providing additional evidence that executives conduct repurchases to boost the value of their equity.³²

b. Stock-Price Movements

Stock price movements after repurchase announcements also suggest that inside information drives many repurchases. If executives use repurchases to buy stock at a low price, then the stock prices of firms announcing repurchases should, on average, outperform those of firms not announcing repurchases in the post-announcement period. Indeed, stock prices of repurchasing firms increase faster than stock prices of similar firms not conducting repurchases. One study found that shares of firms announcing repurchases earn abnormal returns of 6.7% in the first year following the announcement and 23.6% over the subsequent four years.³³ These post-announcement returns strongly suggest that, as a group, firms announcing repurchases are underpriced at the time repurchase programs are announced.

Post-announcement returns are even higher in those firms in which executives actually choose to repurchase shares after making the announcement.³⁴ Focusing on “value firms”

³² The fact that managers have inside information that they can use in repurchasing shares does not mean that every repurchase will, ex post, transfer value from sellers to non-selling shareholders. Executives with firm-specific inside information suggesting that the stock is underpriced may buy stock shortly before an unexpected large interest rate increase, a slowdown in the economy, or an adverse change in the firm’s industry that causes the stock price to fall. However, executives repurchasing shares on inside information can realistically expect to transfer value from redeeming shareholders and, on average, will do so.

³³ See Konan Chan et al., *Economic Sources of Gains in Stock Repurchases*, 39 J. FIN. QUANT. ANALYSIS 461 (2004). See also Urs Peyer and Theo Vermaelen, *The Nature and Persistence of Buyback Anomalies*, 22 REV. FIN. STUD. 1693, 1701 (2009) (finding, in large sample of firms announcing OMRs, a 24.25% cumulative market-adjusted return over 48 months following OMR announcements).

³⁴ After making a repurchase announcement, which is not binding, executives can choose how much equity to repurchase. See Fried, *Informed*

(firms with a high book-to-market ratio) that had announced repurchases, one study found that among the firms in which managers subsequently repurchased more than 4% of the firm's shares in the year following the repurchase announcement, four-year post-announcement abnormal returns were 57%, compared to 0% for firms that did not subsequently repurchase any shares.³⁵

To be sure, each of these stock price patterns could have an explanation other than executives' use of repurchases to boost the value of their equity. However, the overall pattern of stock price movements around repurchases, along with executives' behavior and their own accounts of why they repurchase shares, provides extremely strong evidence that executives often use repurchases to indirectly buy underpriced stock.

3. Why Bargain Pricing Persists

Because executives often use repurchases to buy stock at a low price, a repurchase announcement will tend to signal that the expected value of the stock is higher than the current market price.³⁶ This signal, in turn, can be expected to boost

Trading, supra note x, at 1335 (explaining that firms announcing authorization of open market repurchases, the most common form of repurchases, are not required to indicate the number of shares they intend to repurchase or commit to repurchasing any shares).

³⁵ See Konan Chan et al., *Do Managers Time the Market? Evidence from Open-Market Share Repurchases*, 31 J. BANK. FIN. 2673, 2688 (2007). Other studies indicating that executives in the U.S. and elsewhere tend to repurchase stock when it is underpriced include Clifford P. Stephens & Michael S. Weisbach, *Actual Share Acquisitions in Open Market Repurchase Programs*, 53 J. FIN. 313 (1998) (finding that executives are more likely to follow up a repurchase program announcement with actual repurchases if the stock subsequently performs poorly); Paul Brockman & Dennis Y. Chung, *Managerial Timing and Corporate Liquidity: Evidence from Actual Share Repurchases*, 61 J. FIN. ECON. 417, 418 (2001) (reporting that executives of firms on the Hong Kong Stock Exchange use inside information to repurchase stock at a low price).

³⁶ See, e.g., David Ikenberry et al., *Market Underreaction to Open Market Share Repurchases*, 39 J. FIN. ECON. 181, 190 (1995). A stock's value depends

the stock price, reducing the amount of underpricing and the executives' ability to profit from a bargain-price repurchase. If a repurchase announcement clearly signaled a certain amount of underpricing, then one would expect the announcement to eliminate the underpricing.

However, investors do not appear to immediately impart the information contained in repurchase announcements into the stock price, just as they do not immediately impart other types of information into the stock price.³⁷ Their failure to do so has contributed to the development of the well-established and well-documented phenomenon of investor "underreaction."³⁸

Even if investors immediately responded to the information contained in repurchase announcements, the stock price increase following a repurchase announcement would be unlikely to close, or even substantially reduce, the underpricing gap in any given case. The market understands that boards may authorize a buyback even when the stock is not underpriced. The board might approve a repurchase so that managers can acquire shares for an employee stock option program. Or, executives might announce a repurchase program that they have no plan to conduct simply to boost the stock price so they can unload their own shares at a higher

on the expected value of its future cash flows, which in turn is a function of the amount and timing of those cash flows as well as the interest rate appropriate for discounting the cash flows. The higher the volatility, the higher the discount rate. Thus, managers can reap profits by trading based on private information about the amount, timing, or volatility of future cash flows. Indeed, there is substantial evidence that repurchasing firms have much lower future volatility than the market had assumed. See Gustavo Grullon & Roni Michaely, *The Information Content of Share Repurchase Programs*, 59 J. FIN. 651, 678 (2004).

³⁷ See Ikenberry et. al., *supra* note x, at ____.

³⁸ See, e.g., Harrison Hong & Jeremy C. Stein, *A Unified Theory of Underreaction, Momentum Trading, and Overreaction in Asset Markets*, 54 J. FIN. 2143 (1999).

price.³⁹ Thus, a repurchase announcement does not unambiguously signal an underpriced stock.⁴⁰

Because of the underreaction problem and the fact that some repurchases are not driven by the desire to buy stock at a low price, the market response to repurchase announcements is, on average, rather muted. Repurchase announcements are associated with short-term abnormal price increases averaging 3% to 4% in the 1980s⁴¹ and approximately 2% in the 1990s.⁴² The more muted the market's response, the more profits executives can make repurchasing underpriced stock.⁴³

³⁹ See Jesse M. Fried, *Open Market Repurchases: Signaling or Managerial Opportunism?*, 2 THEORETICAL INQUIRIES IN LAW 865, 879-81 (2001) (explaining that executives can use repurchase announcements to boost the stock price before selling their shares); Fried, *Informed Trading*, *supra* note x, at 1351-56 (further developing the argument that executives can use repurchase announcements for false signaling and providing anecdotal accounts of such false signaling). Recent work has provided additional empirical confirmation that many repurchase announcements are used for false signaling. See Konan Chan, David L. Ikenberry, Imoo Lee, and Yanzhi Wang, *Share Repurchases: a Potential Tool to Mislead Investors*, 16 J. CORP. FIN. 137 (2010) (finding evidence consistent with executives of poorly performing firms making share repurchase announcements without an intention to repurchase shares).

⁴⁰ I have thus suggested that firms be required to disclose not only their intention to repurchase shares but also the exact details of any buy orders given to brokers shortly before the orders are made. See Fried, *Informed Trading*, *supra* note x, at ____.

⁴¹ See Ikenberry et al., *Market Underreaction*, *supra* note x, at 190 (reporting that the average market reaction to OMR announcements for all of the OMRs announced between January 1980 and December 1990 by firms listed on the ASE, NYSE, and NASDAQ was 3.54%).

⁴² See Peyer and Vermaelen, *supra* note x, at 1697 (finding that, in a sample of OMR announcements from 1991-2001, there were average abnormal stock price reactions of 2.39% in the three days around the announcement).

⁴³ Not surprisingly, stock price movements are more extreme around announcements that likely reflect information-based trading. Firms that repurchase shares consistently – and are therefore likely to be buying shares for ongoing employee stock option programs rather than engaging in informed trading – experience much lower announcement returns than firms that announce a repurchase for the first time or are infrequent

C. Incentive for Value-Reducing Repurchases

We have just seen that executives have incentives to engage in bargain repurchases, even if those repurchases do not increase shareholder value. In addition, there is considerable evidence that executives do engage in such bargain repurchases. I will now explain that executives have powerful incentives to engage in bargain repurchases even if they reduce shareholder value.

1. How Repurchases Can Reduce Shareholder Value

A repurchase can reduce shareholder value by distributing cash that should be invested in the firm's own projects. Suppose, for example, that \$100 left in the firm would generate a return of 15% (\$15). Suppose that if instead the \$100 was distributed to shareholders, the shareholders receiving the cash could generate returns of only 10% (\$10). Distributing the \$100 through a repurchase would thus destroy \$5 of shareholder value.

In a world of perfect capital markets, of course, there would be no need to sacrifice the 15% project to fund the \$100 repurchase. Corporations would obtain financing for any project with a positive net present value. Thus, a firm's ability to invest in desirable projects would not depend on having cash on hand. A firm could both repurchase \$100 worth of shares and invest \$100 in the desirable project simply by borrowing another \$100 for the project.

However, there are a number of reasons why a firm may not borrow enough money to fully fund the desirable project. First, information asymmetry may prevent a firm from borrowing money on cost-effective terms. While the firm's executives may know that the firm's prospects are good, the less-informed outside lenders asked to provide capital may

repurchasers. See Jagannathan & Stephens, *supra* note x, at 71-72. Announcement returns for ASRs – where the firm has committed to purchase a certain amount of shares – are also higher than in regular OMRs. See Chemmanur et. al., *supra* note x, at 27.

have a different view. Outside lenders may thus demand terms that make the financing of the desirable project too costly, leading executives not to undertake the project.⁴⁴

Second, even if a firm could borrow on reasonable terms from a lender, the borrowing may not be permitted by the firm's existing arrangements. For example, loan covenants with existing lenders might bar the firm from borrowing additional funds. Covenants are inevitably both underinclusive and overinclusive: they fail to prevent some value-decreasing activities and prevent some value-increasing activities.⁴⁵ In this case, a loan covenant would be over-inclusive: it would prevent the firm from financing a desirable project with additional debt.

Third, executives who are risk-averse may wish to avoid the additional discipline imposed by more debt. Even if credit could be obtained on reasonable terms and the firm's existing arrangements would permit such a borrowing, the executives might personally be better off foregoing the valuable project than having the firm take on more debt. For any or all three of these reasons, a repurchase may reduce shareholder value by squandering cash that would generate more shareholder value if left in the firm.

In fact, there is evidence consistent with repurchases diverting cash that would otherwise be used in the firm. A recent study finds that repurchases, especially those that appear driven by executive stock ownership, have a significantly negative effect on a firm's short-term investments and R&D.⁴⁶ The study found that, everything else equal,

⁴⁴ See generally Stewart Myers & Nicholas S. Majluf, *Corporate Financing and Investment Decisions when Firms have Information that Investors Do Not Have*, 13 J. FIN. ECON. 187 (1984).

⁴⁵ See Lucian A. Bebchuk and Jesse M. Fried, *The Uneasy Case for the Priority of Secured Claims in Bankruptcy*, 105 YALE L.J. 857, 879 (1996); Marcel Kahan and David Yermack, *Investment Opportunities and the Design of Debt Securities*, 14 J. L. ECON. ORG. 136 (1998).

⁴⁶ See Alok Bhargava, *Executive Compensation, Share Repurchases, and Investment Expenditures: Econometric Evidence from US. Firms* (working paper, 2010).

doubling repurchases led to an 8% reduction in R&D expenditures.⁴⁷ Thus, cash used in repurchases may well be diverted from other activities in the firm, even if those activities would generate more shareholder value.⁴⁸

2. Rewards for Value-Reducing Repurchases

Having seen that repurchases can reduce shareholder value, I will now show that executives compensated with standard equity-based pay arrangements can be rewarded for engaging in value-wasting repurchases. I will then explain that other components of executives' pay packages fail to mitigate this distortion.

a. Equity Pay and Value-Reducing Repurchases

To see why executives compensated with standard equity-based pay arrangements are rewarded for engaging in bargain repurchases that reduce shareholder value, let us return to the example of ABC Corporation ("ABC"). Recall that ABC has two shares outstanding. CEO owns one share; public shareholders hold the other. Suppose that, as before, ABC's value at Liquidation Date absent a repurchase would be \$20. Thus, absent a repurchase, shareholder value would be \$20, and the holder of each share would receive \$10.

⁴⁷ Another study came to similar conclusions. See Daniel Bens et al, *Real Investment Implications of Employee Stock Option Exercises*, 40 J. ACCT. RESEARCH 359, 359 (2002) (finding some evidence that firms repurchasing shares to satisfy option exercises exhibit subsequent poor performance because the repurchases divert cash from productive investments).

⁴⁸ Such bargain-price repurchases can also reduce shareholder value in two other ways. First, share repurchases can reduce shareholder value by causing executives to hoard excessive cash. In particular, the prospect of future bargain repurchase opportunities might lead managers to retain rather than distribute excess cash, cash that could be better used outside of the firm. See Fried, *Informed Trading* *supra* note x, at 1365-67. Second, it may lead executives to use repurchases to distribute cash rather than dividends even when dividends are a more efficient payout mechanism. See *id* at 1369-1370.

Suppose that ABC's CEO is considering repurchasing one share before Liquidation Date when ABC's shares are trading at \$8 per share, \$2 less than their actual value. Such a repurchase would leave one share - that held by CEO - outstanding. Finally, suppose that the repurchase would destroy \$1 of shareholder value by squandering cash that could be used to exploit valuable opportunities.

How would the repurchase affect shareholder value? The repurchase of a share for \$8 would reduce ABC's value not just by \$8, but also by an additional \$1, for a total of \$9. Shareholder value would thus be \$19: \$8 distributed in the repurchase plus \$11 (\$20-\$9) distributed to the remaining shareholder (CEO) when ABC is liquidated.

What are CEO's incentives? If there is no repurchase, CEO will be paid \$10 for his share. If there is a repurchase of one share, CEO will receive \$11 for his share. The effect of the repurchase on shareholder value and CEO's payoff can be summarized in the following table:

Table 1. Rewards for Value-Reducing Repurchase

	Shareholder Value	CEO's Payoff
No Repurchase	\$20	\$10
Repurchase	\$19	\$11

As one can see, standard equity-based pay arrangements reward CEO for repurchasing shares even when the transaction destroys shareholder value. The problem is that these arrangements align CEO's interests with non-trading shareholders but not with redeeming shareholders. Thus, CEO has an incentive to take steps that transfer value from redeeming shareholders to non-trading shareholders even when those steps destroy shareholder value.

b. Do Other Pay Components Mitigate?

We just saw that an executive holding equity can be rewarded for engaging in a repurchase that reduces shareholder value. But, executives are typically free to sell much of their equity in the short-term.⁴⁹ One might think that having stock that could be sold in the short-term would tie the executive's payout to that of short-term shareholders, including redeeming shareholders, those who sell stock back to the corporation when the firm conducts a repurchase.

However, the fact that executives *can* sell stock in the short term does not mean that they *will* sell stock in the short term. When executives know that the stock is underpriced and conduct a repurchase in order to indirectly buy stock at a low price, they can be expected to hold onto their personal shares until the stock price rises. In fact, executives buy more shares for their personal accounts before and during bargain repurchases.⁵⁰ Thus, other components of executives' compensation arrangements will not mitigate equity-driven incentives to engage in value-wasting repurchases.

⁴⁹ See Bebchuk and Fried (2004), *supra* note x, at 174-179.

⁵⁰ See Elias Raad and H.K. Wu, *Insider Trading Effect on Stock Returns Around Open-Market Stock Repurchase Announcements: An Empirical Study*, 18 J. FIN. RES. 45, 57 (1995).

III. EQUITY PAY AND SHARE ISSUANCES

Part II demonstrated that standard equity-based pay arrangements reward executives for conducting bargain-price repurchases, even when the repurchases reduce shareholder value. This Part shows that arrangements also reward executives for raising cash through inflated-price equity offerings, even when the cash is invested in ways that reduce shareholder value.

Section A discusses the widespread use of equity issuances by firms. Section B explains that executives holding equity in their firms benefit when the firms sell overpriced stock. It also provides evidence that such inflated-price issuances are common. Section C explains why equity issuances can reduce shareholder value. It then shows that executives can benefit even if inflated-price share issuances lead to a reduction in shareholder value.

A. The Use of Share Issuances

After undergoing an IPO, a publicly-traded firm usually continues to issue shares throughout its life.⁵¹ Such issuances typically serve one of three purposes. First, these issuances supply shares for equity-based pay plans used to compensate employees.⁵² Second, they raise cash for operations and

⁵¹ See Eugene F. Fama and Kenneth R. French, *Financing Decisions: Who Issues Stock?*, J. FIN. ECON. (2005) (reporting that 86% of the firms in their sample issued stock between 1992-2003).

⁵² Most publicly traded companies issue shares to give executives and lower level employees either restricted stock or stock options as part of their compensation packages. Among the largest 200 firms in 2007, the range of shares allocated to equity compensation plans ranged from .02% of outstanding shares to 62.6% of outstanding shares, with the median around 10.5%. See Pearl Meyer's 2008 Equity Stake Study, at 2.

strategic investments or to pay down debt.⁵³ Third, issuances create a means of payment in acquisitions where target shareholders receive acquirer stock in exchange for giving up claims on the target company's assets.

Although equity issuances have different purposes, all have the same economic consequence: they directly or indirectly move cash or other assets into the firm.⁵⁴ Equity issuances thus have the opposite effect of repurchases. While repurchases take value out of the firm and put it in the hands of shareholders, equity issuances take value from shareholders and put it into the firm's hands.

B. Using Share Issuances to Sell High

1. Executives' Payoffs

An equity issuance has similar distributional effects to a share repurchase. In particular, it is economically equivalent to the following two-part transaction. First, non-trading shareholders personally sell shares to investing shareholders at the offering price. Second, all shareholders (non-trading and investing shareholders) buy stock from the firm pro rata at the offering price.

An equity offering thus transfers value from investing shareholders to non-trading shareholders when the sale price exceeds the value of the stock.⁵⁵ To the extent executives hold

⁵³ These cash-raising issuances may take the form of seasoned equity offerings, private placements, convertible debt, warrants, or rights issues. See Fama and French, *supra* note x, at ____.

⁵⁴ The issuance of equity for compensation indirectly moves cash into the firm. The firm gives equity to executives and other employees, who eventually sell the equity for cash on the open market to investors. This practice has the same economic effect as a transaction in which the investors buy stock from the firm for cash, and the firm then uses the cash to compensate executives and other employees.

⁵⁵ Cf. Andrei Shleifer and Robert W. Vishny, *Stock Market Driven Acquisitions*, 70 J. FIN. ECON. 295 (2003) (proposing that overvalued firms engage in stock-financed acquisitions so that the overvalued firms' shareholders can benefit from obtaining hard assets at a discount); Matthew

equity in the firm, they profit when the firm issues overpriced stock, along with all the other non-trading shareholders. Executives holding stock thus have an incentive to conduct inflated-price offerings.

To illustrate, consider again ABC Corporation. As before, it has two shares outstanding, one held by CEO and one held by public shareholders. If there were no transactions in its equity, ABC would distribute \$20 to its shareholders at Liquidation Date. A holder of a single share would thus receive \$10.

Assume that before Liquidation Date, ABC engages in an inflated-price issuance. In particular, suppose that ABC sells one new share (its third share) for \$13, \$3 more than it is worth. Assume further that no value is created or destroyed as a result of the issuance. Thus, at Liquidation Date, the parties then holding ABC's 3 shares receive a total of \$33 (\$20+\$13), or \$11 per share.

It should be easy to see that CEO benefits from the inflated-price equity issuance. Absent the issuance, CEO will receive \$10 at Liquidation Date. If ABC issues a share for \$13, CEO will receive \$11 at Liquidation Date. CEO is thus \$1 better off if ABC engages in an inflated-price issuance before Liquidation Date.

Note, however, that the inflated-price issuance in this example does not increase shareholder value. If ABC issues a share for \$13, shareholder value is still \$20: \$33 distributed to shareholders at Liquidation Date, less the \$13 received from shareholders when it issued shares.⁵⁶ Thus, the inflated-price issuance rewards CEO without increasing shareholder value.

Rhodes-Kropf and S. Viswanathan, *Market Valuation and Merger Waves*, 59 J. FIN. 2685 (2004) (similar).

⁵⁶ I continue to ignore the time value of money (or alternatively, assume it is zero). This assumption, made purely for convenience, does not affect the analysis.

2. Evidence of Inflated-Price Issuances

There is considerable evidence that firms tend to conduct seasoned equity offerings (“SEOs”) – transactions in which cash is raised from new and existing shareholders -- when the stock is overpriced. For example, one well-known study found that firms undertaking SEOs systematically underperform benchmark stocks over a five-year post-offering period.⁵⁷ This pattern of underperformance indicates that the shares sold were on average overvalued at the time of the SEO.⁵⁸ The cash raised by these offerings is then used to increase investment.⁵⁹

When a firm’s shares are overpriced, it is also more likely to acquire other companies and use its shares as consideration in the merger.⁶⁰ Acquisitions generally hurt

⁵⁷ See T. Loughran and J. Ritter, *The New Issues Puzzle*, 50 J. FIN. 1, (1995) (examining thousands of IPOs and SEOs between 1970-1990). See also Jeffrey Pontiff and Artemiza Woodgate, *Share Issuance and Cross-sectional Returns*, 63 J. FIN. 921, 943-44 (2008) (finding evidence of post-SEO stock underperformance in a more recent sample of U.S. SEOs). For evidence that SEOs are used in other countries to sell stock at an inflated price, see Brian J. Henderson, Narasimhan Jegadeesh, and Michael S. Weisbach, *World markets for raising new capital*, 82 J. FIN. ECON. 63, 66 (2006) (reporting that stock market returns are abnormally low following periods of high equity issues).

⁵⁸ The failure of investors to immediately impart all of the information signaled by these transactions into the stock price is another example of investor under-reaction. See, e.g., Loughran and Ritter (1995), *supra* note x; at ___; Hong & Stein, *supra* note x, at ____.

⁵⁹ See Ming Dong, David Hirshleifer, and Siew Hong Teoh, *Stock Market Misvaluation and Corporate Investment* (working paper, 2007) (finding that cash raised by overpriced firms issuing equity is used to increase investment).

⁶⁰ See, e.g., Ming Dong, David Hirshleifer, S. Richardson, and S.H. Teoh, *Does Investor Misvaluation Drive the Takeover Market?*, 61 J. FIN. 725 (2006) (finding that overpriced firms are more likely to try to acquire other firms that are less overpriced); Rhodes-Kropf, Robinson, and Viswanathan, *Valuation Waves and Merger Activity: The Empirical Evidence*, 77 JFE 561 (2005).

acquiring-firm shareholders because executives tend to overpay for the target or conduct transactions that destroy value.⁶¹ But one study found that shareholders of acquiring firms that were able to use their own stock to effect the merger earned significantly greater returns than shareholders of a similar group of firms that, for unrelated reasons, were unable to effect acquisitions.⁶² This finding provides strong evidence that shareholders of acquiring firms benefit from using overvalued stock to acquire target assets at a discount.⁶³

There is also evidence that executives manipulate the stock price up around equity offerings in order to increase the amount transferred from new investors. One study found that seasoned equity issuers are more likely to manipulate earnings than non-issuers and that such manipulations boost the price

⁶¹ See Sara B. Moeller, Frederik P. Schlingemann, and Rene M. Stulz, *Wealth Destruction on a Massive Scale? A Study of Acquiring-firm Returns in the Recent Merger Wave*, 60 J. FIN. 757 (2005).

⁶² See Pavel G. Savor & Qi Lu, *Do Stock Mergers Create Value for Acquirers?* 64 J. FIN. 1061, ___ (2009). (finding that the shares of a sample of stock-financed acquirers that complete their acquisition outperform a control sample of stock-finance acquirers that fail to complete their acquisition by 25-30% over a three-year horizon). See also Tim Loughran and Anand Vijh, *Do Long-Term Shareholders Benefit From Corporate Acquisitions?* 52 J. FIN. 1765, 1775 (1997) (finding that managers of acquiring firms maximize the welfare of their existing shareholders by paying with stock when their stock is likely to be overvalued and by paying with cash when their stock is likely to be undervalued).

⁶³ Other evidence that acquiring firms' stock is overpriced comes from insiders' trading decisions and short-selling activity around announcements of stock-financed acquisitions. See Daniel Bradley, Brandon Cline, and Qin Lian, *Do Insiders Practice What they Preach? Informed Option Exercises Around Acquisitions* (working paper, 2009) (finding that around the announcement of stock-financed acquisitions insiders of the acquiring firm exercise stock options and sell the underlying shares, which is consistent with the acquirer stock being over-priced); Itzhak Ben-David, *Are Stock-Acquirers Overvalued? Evidence from Short-Selling Activity* (working paper, March 2010) (determining that short-selling activity is consistent with acquirers using overvalued stock to buy other companies)

around the equity offering.⁶⁴ Such earnings manipulations also occur when the stock is being used to acquire another company.⁶⁵

C. The Problem of Cheap Empire Building

As we have seen, equity-based pay rewards executives for conducting inflated-price issuances, and there is considerable evidence that such issuances are common. This Section shows that equity-based pay rewards executives for engaging in cheap empire building: inflated-price issuances that raise money for investments that reduce shareholder value.

⁶⁴ See S. Teoh, Ivo Welch, and T.J Wong, *Earnings Management and the Underperformance of Seasoned Equity Offerings*, 50 J. FIN. ECON. 1935 (1998) (reporting that secondary equity issuers raise reported earnings by altering discretionary accruals and that this manipulation lowers post-offering returns). See also Daniel A. Cohen and Paul Zarowin, *Accrual-Based and Real Earnings Management Activities Around Seasoned Equity Offerings* (working paper, 2008) (finding use of both accrual-based and real earnings management in a sample of 1500 seasoned equity offerings between 1987-2006).

⁶⁵ See Merle Erickson & Shiing-Wu Wang, *Earnings Management by Acquiring Firms in Stock for Stock Mergers*, 27 J. ACCT. & ECON. 149 (1999) (finding, in a sample of stock-financed mergers between 1985-1990, that acquirers managed earnings upward before announcing the merger); Henock Louis, *Earnings Management and the Market Performance of Acquiring Firms*, 74 J. FIN. ECON. 121 (2004) (similar); Bok Baik, Jun-Koo Kang, and Richard Morton, *Earnings Management in Takeovers of Privately Held Targets* (2007) (working paper) available at <http://ssrn.com/abstract=1013639> (finding that an acquiring firm is more likely to report income-increasing abnormal accruals when it uses stock to acquire a privately held target); Antonia Botsari & Geoff Meeks, *Do Acquirers Manage Earnings Prior to Share for Share Bid?*, 35 J. BUS. FIN. & ACCT. 633 (2008) (finding evidence of earnings management by stock-financed acquirers in the UK during 1997-2001).

1. *How Share Issuances Can Reduce Shareholder Value*

Just as a share repurchase can reduce shareholder value by distributing cash that should be invested in the firm's own projects, an equity issuance can reduce shareholder value by enabling the firm to engage in projects that yield a lower return than projects outside the firm. Suppose, for example, that the \$100 raised by an equity issuance would generate a return of 10% outside the firm. Suppose further that, if invested in the firm, the \$100 would generate returns of 5%. The \$100 equity issuance will thus destroy \$5 of shareholder value.

Substantial evidence demonstrates that expansions facilitated by equity issuances often reduce shareholder value. For example, acquisitions – many of which are financed by the acquirer issuing stock – frequently reduce the aggregate wealth of acquirer and target shareholders. One study found that during the period 1998-2001 the combined value of acquirer and target stock fell over \$100 billion following acquisition announcements.⁶⁶

Of course, equity issuances could also increase shareholder value. Suppose, for example, that a dollar would generate 15% in the firm and 10% outside the firm. Moving the dollar from shareholders to the firm makes shareholders as a group better off, not worse off. Thus, I do not claim that equity issuances always or even generally reduce shareholder value.

My point is that equity issuances can reduce shareholder value if the assets absorbed by the firm would generate higher returns outside the firm. And, as seen in the next Section, when the stock is overpriced an executive compensated with standard equity-based pay may be rewarded for engaging in cheap empire building.

2. *Rewards for Cheap Empire Building*

Having seen that equity issuances can reduce shareholder value, I will now show that executives

⁶⁶ See Moeller, *supra* note x, at ____.

compensated with standard equity-based pay arrangements have an incentive to engage in “cheap empire building” using inflated-price equity issuances to finance value-reducing investments. I will then explain that other components of executives’ pay packages do not mitigate this distortion.

a. Equity Pay and Cheap Empire Building

Executives compensated with standard equity-based pay arrangements are rewarded for engaging in inflated-price equity issuances, even if they reduce shareholder value.

Return to our example involving ABC Corporation. Recall that ABC has two shares outstanding. One share is held by CEO, the other by public shareholders. Absent any transactions in its stock, ABC would be liquidated at Liquidation Date for \$20. Thus, each share would receive \$10.

Suppose that ABC’s CEO is considering selling another share, before Liquidation Date, when the stock is trading at \$14 per share (\$4 more than it is worth). The amount raised will be used to expand ABC. There would accordingly be three shares outstanding at Liquidation Date. Finally, suppose that the expansion financed by the stock issuance would destroy \$1 of shareholder value.

If CEO expands ABC via an equity offering, \$14 will be raised from shareholders in the offering. When ABC is liquidated, its value will be the no-transaction value (\$20) increased by the proceeds of the equity issuance (\$14) and reduced by the amount of value destroyed (\$1), or \$33. Each of the three shares, including that held by CEO, will be worth \$11. ABC’s shareholder value will be the amount distributed to shareholders on Liquidation Date (\$33) less the amount raised from investing shareholders (\$14), or \$19.

The net effect of the inflated-price equity sale on shareholder value and CEO’s payoff can be summarized in the following table:

Table 2. Rewards for Value-Reducing Equity Issuance

	Shareholder Value	CEO's Payoff
No Equity Issuance	\$20	\$10
Equity Issuance	\$19	\$11

As one can see, the inflated-price equity issuance rewards the CEO even though shareholder value is reduced. Thus, standard equity-based pay arrangements can induce the CEO to direct the firm to sell shares even when the transaction destroys shareholder value.

The problem is that standard equity-based pay arrangements align executives' interest with non-trading shareholders but not with investing shareholders who buy additional stock from the firm. Thus, the executive has an incentive to take steps that transfer value from investing shareholders to non-trading shareholders even when such steps would destroy shareholder value.

A well-known example of an overpriced equity offering that destroyed value is America Online's (AOL) stock-financed acquisition of Time Warner. Despite the fact that AOL paid a high premium for Time Warner (48% based on the announcement day closing price), and at this point there appear to have been no synergy gains, AOL's shareholders benefited from the equity-finance acquisition because AOL's equity was so overpriced at the time.⁶⁷

AOL's executives may or may not have known that they were paying for Time Warner with overpriced stock and that the merger would destroy value. The important point,

⁶⁷ See Savor and Lu, *supra* note x, at _____. Combining AOL and Time Warner proved so unsuccessful that Time Warner eventually spun off AOL at a valuation of about \$3.5 billion. See Reuters, AOL Spin-Off is Set for Dec. 9, (November 16, 2009), available at <http://www.nytimes.com/2009/11/17/technology/companies/17aol.html>. AOL's peak market cap was over \$220 billion. See Meet the Market's Biggest Losers, CNN Money, available at http://money.cnn.com/galleries/2010/fortune/1002/gallery.biggest_losers.fortune/8.html.

however, is that even if the AOL executives knew the merger would destroy value, their equity-based pay would still give them an incentive to effect this value-destroying transaction.

One might wonder why the CEO in our example does not issue a share for \$14 and then have ABC hold the \$14 in cash (or distribute it as a dividend) rather than make an investment that will destroy \$1 and leave ABC with only \$13 of additional value. Such a move would make CEO, holder of one of ABC's three shares, better off by \$0.33. Similarly, one might wonder why AOL did not issue shares for cash and distribute the cash to shareholders, which would have made its shareholders better off.

The reason is simple. ABC (or AOL) must inform investors what it is going to do with the money it raises by selling shares. If it announces that it will take all the funds raised and hold it in cash or distribute it to shareholders, investors will immediately recognize that the firm is issuing stock merely to take advantage of the high price. Investors will thus refuse to purchase shares, preventing the firm from selling overpriced equity. As a result, firms selling equity generally use most of the funds for some other purpose, such as paying down debt or increasing investment.⁶⁸

b. Do Other Pay Components Mitigate?

As we have seen, an executive compensated with standard equity-based pay arrangements can be rewarded for engaging in value-wasting equity issuances when the stock is overpriced. However, equity comprises only part of an executive's compensation. The executive likely also receives a cash salary and bonus. In addition, the executive may hold stock that she is unloading currently. Do these other forms of compensation mitigate the adverse incentives created by standard equity-based pay arrangements?

⁶⁸ See Woojin Kim and Michael S. Weisbach, *Motivations for public equity offers: An international perspective*, 87 J. FIN. ECON. 281, — (2008) (finding that over 99% of funds raised in equity offerings are used for R&D and capital expenditures over the next four years).

Unfortunately, none of these other components of the executive's pay package dilutes executives' incentive to engage in cheap empire building when the stock is overpriced. Salary will not be reduced by such empire building. Indeed, given the well-known correlation between market capitalization and executive pay, salary and other forms of compensation may well be increased if executives expand the firm.⁶⁹ To the extent that the executive owns stock that can be sold in the short-term, when the stock price is high, the sale of additional equity by the firm will not prevent her from unloading her stock at a high price. Indeed, there is evidence that executives whose firms are selling overpriced stock simultaneously unload their own shares.⁷⁰ In short, the perverse incentives caused by standard equity-based pay arrangements are not mitigated by other components of executives' pay packages.

⁶⁹ See Lucian A. Bebchuk and Yaniv Grinstein, *Firm Expansion and CEO Pay* (working paper, 2005), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=838245 (finding that firm expansion, including by equity-financed acquisitions, boosts CEO compensation).

⁷⁰ See Daniel Bradley, Brandon Cline, and Qin Lian, *Do Insiders Practice What they Preach? Informed Option Exercises Around Acquisitions* (working paper, 2009) (finding that, around the announcement of stock-financed acquisitions, insiders of the acquiring firm exercise stock options and sell the underlying shares, which is consistent with the acquirer stock being over-priced).

IV. CONSTANT-SHARE APPROACH

In this Part, I put forward a new “constant-share” approach to equity-based pay. This approach, I show, eliminates executives’ equity-driven incentives to engage in excessive bargain-price repurchases and cheap empire building. The approach does so by tying equity payoffs to shareholder value – the value flowing from the firm to all of its shareholders over time.

Section A describes the mechanics of the constant-share approach. Section B shows how this approach, by tying executives’ equity payoffs to shareholder value, would remove executives’ equity-driven incentives to engage in value-wasting repurchases. It also demonstrates that the approach preserves executives’ incentives to engage in value-increasing repurchases. Section C demonstrates that the constant-share approach would ensure that executives’ equity rewards them for value-increasing equity-financed expansion but not cheap empire building. Section D explains that the constant-share approach could be easily implemented, even in firms that frequently repurchase and issue stock.

A. Overview

Parts II and III demonstrated that standard equity-based arrangements reward executives for engaging in stock repurchases and equity issuances that reduce shareholder value. This problem arises because such equity arrangements tie executives’ payoffs not to shareholder value but rather to the value flowing to only one group of shareholders, non-trading shareholders who neither sell stock to nor buy stock from the firm before the executives sell their stock.

The constant-share approach I put forward would solve this problem by tying executives’ equity payoffs to the value flowing to all the firm’s shareholders over time. Under the constant-share approach, executives would be required to adjust their equity positions whenever the firm repurchases or issues shares so that executives’ fractional ownership in the

firm would remain constant through the transaction.⁷¹ The executive would be required to transact on the same terms as the firm transacts with its own investors. Thus, when the firm repurchases shares, the executive must sell some shares at the repurchase price. Similarly, the executive must buy shares at the issue price when the firm sells shares.⁷²

For example, suppose that an executive (“CEO”) holds a certain fraction of the firm’s equity at a particular point in time (say 2%). If the firm repurchases 1,000,000 shares, CEO would be required to sell to the firm, at the same price the firm was paying for the repurchased shares, 20,000 shares (2% of one million shares). Alternatively, if the firm issues 1,000,000 new shares in a secondary offering, CEO would be required to buy, at the same prices the firm was receiving for the newly issued stock, 20,000 of the 1,000,000 shares. The effect of CEO’s transactions would be to leave CEO with the same fraction of the firm’s outstanding shares after the repurchase or share issuance as before: in this case, 2%.

As I will explain in more detail in Sections B and C, requiring the executive to participate in repurchases as a redeeming shareholder and in equity issuances as an investing shareholder in the same proportion as she owns stock in the company ensures that the executive’s equity payoff is tied to the value flowing to all the firm’s shareholders. Essentially, the constant-share approach would make the CEO both a non-trading and redeeming shareholder in the case of repurchases, and both a non-trading and investing shareholder in the case of equity issuances. Thus, the executive no longer financially benefits from repurchases and stock issuances that merely

⁷¹ In calculating executives’ pre-transaction ownership interest, one would need to take into account all of the executives’ equity and equity-like incentives. However, unvested equity incentives and vested, out-of-the-money options might be given less weight than a vested share of restricted stock.

⁷² The proceeds of any sale of shares back to the firm should be held in an escrow account until the executive’s equity is cashed out. Similarly, any equity purchased by the executive should be held, ideally for the long-term.

transfer wealth from one set of shareholders to another without generating any value. Instead, the executive has an incentive to engage in repurchases and equity issuances only if they increase shareholder value.⁷³

The constant-share approach also provides another benefit. As Parts II and III explained, executives frequently manipulate the stock price around repurchases and equity issuances. They engage in such manipulation because it boosts the value of their standard equity arrangements. Once executives have decided to conduct a repurchase, driving down the stock price before the firm starts buying back stock increases the value of executives' equity, because the executives are indirect buyers. Similarly, assuming an equity issuance will occur, driving up the stock price makes executives holding stock better off, because they are indirect sellers. The constant-share approach would eliminate executives' equity-driven incentive to engage in such manipulation by ensuring that they are neither indirect buyers nor indirect sellers in these transactions.

B. Constant-Share Approach in a Repurchasing Firm

When a firm repurchases shares, the constant-share approach ties an executive's equity payoff to the total amount of value flowing to both non-trading and redeeming shareholders. This mechanism eliminates the executive's equity-driven incentive to engage in a repurchase merely because it transfers value from redeeming shareholders. Instead, the executive is rewarded for engaging in any repurchase if and only if it increases shareholder value.

⁷³ As Section D explains, the constant-share approach could be implemented through financial contracts that do not involve the purchase or sale of actual shares. However, for ease of exposition, I will describe the mechanism as one in which actual shares are purchased or sold by the executive.

1. *Tying Equity Pay to Shareholder Value*

The constant-share approach ties executives' equity payoffs to shareholder value whenever they conduct share repurchases. To see why this is the case, suppose that an executive (CEO), at the time of a possible repurchase, owns 10% of the firm's stock. Suppose that the firm is considering purchasing 20% of the outstanding shares at the current trading price.

Under standard equity-based pay arrangements, CEO would own 12.5% of the firm's shares after the repurchase.⁷⁴ Thus, CEO would receive 12.5% of the value flowing to non-trading shareholders, the shareholders who do not redeem their shares in the repurchase, and 0% of the value flowing to redeeming shareholders. CEO's equity payoffs would thus reflect the value flowing to non-trading shareholders rather than all the firm's shareholders. As we saw in Part II, CEO would be rewarded for engaging in bargain-price repurchases even if they reduce shareholder value.

Under the constant-share approach, CEO would be required to participate in the 20% repurchase in an amount proportionate to her pre-transaction ownership interest of the firm (10%). Thus, shares sold by CEO to the firm would constitute 10% of the 20% block acquired by the firm (or 2% of the firm's outstanding stock). Another way to put it: because the firm is repurchasing 20% of all its shares, CEO is required to sell to the firm 20% of her 10% interest during the repurchase.⁷⁵

After the repurchase, CEO would continue to own 10% of the firm's equity. Thus, CEO would receive 10% of the value flowing to non-trading shareholders. But, because CEO also

⁷⁴ Because the firm is repurchasing 20% of its stock, the proportional interest of each remaining shareholder, including CEO, will increase by 25%.

⁷⁵ A tax liability may be triggered when CEO is required to sell shares to the repurchasing firm. Absent the constant-share approach, CEO would pay tax in the future when selling those shares. Paying tax now rather than in the future is likely to make CEO worse off. To the extent CEO anticipates this liability when contracting with the firm, CEO may depend additional shares (or salary) to compensate her for the extra tax costs.

held 10% of the equity repurchased by the firm, CEO would receive 10% of the value flowing to redeeming shareholders. As a result, CEO's payoffs would equal 10% of the value flowing to all the firm's shareholders. Thus, CEO has an incentive to conduct repurchases if and only if they increase shareholder value.

2. *No Reward for Bargain-Price Repurchases*

The constant-share approach eliminates executives' distributional incentives to conduct share repurchases. To see why this is the case, let us continue with the example of CEO, who owns 10% of the firm's stock at the time of a possible repurchase of 20% of the firm's shares. Suppose that the repurchase would be at a bargain price: the current trading price is less than the shares' actual value.

As I explained earlier, a share repurchase has the same distributional effects as a transaction in which non-trading shareholders directly purchase shares from redeeming shareholders at the repurchase price.⁷⁶ Absent the constant-share approach, the bargain repurchase would transfer value from redeeming shareholders to CEO. In particular, CEO would capture 12.5% of the value transferred from redeeming shareholders to non-trading shareholders as result of the bargain repurchase.

Under the constant-share approach, however, CEO would end up gaining 10% of the value flowing to non-trading shareholders as a non-trading shareholder but would also lose 10% of that same value as a redeeming shareholder. Her gain as a non-trading shareholder would be precisely offset by her loss as a redeeming shareholder.⁷⁷ The constant-share

⁷⁶ See Part II.A.1 *supra*.

⁷⁷ Suppose, for example, that ABC's equity is worth \$100 but is trading for \$60. ABC is contemplating a repurchase of 20% of the equity. Such a repurchase would transfer \$8 (20% x \$40) to remaining shareholders from selling shareholders. If CEO owns 10% of ABC's equity prior to the repurchase, CEO will own 12.5% of ABC's equity post-repurchase. CEO will thus capture \$1 (12.5% of \$8) of the value transferred to remaining shareholders from selling shareholders.

approach thus eliminates any distributional benefit to CEO from a bargain-price repurchase. As a result, CEO will not have any incentive to conduct a repurchase merely to distribute value from redeeming shareholders.

Now consider CEO's position under the constant-share approach. If CEO must sell 10% of her holdings in the repurchase (or 2% of ABC's outstanding shares), CEO will lose \$0.80 in the sale ($2\% \times \40) and be left with 10% of the ABC's post-repurchase equity. Holding 10% of ABC's post-repurchase equity will allow CEO to capture 10% of the \$8 transferred from selling shareholders to non-selling shareholders, or \$0.80, precisely the amount CEO loses on the sale. CEO thus does not personally benefit from the bargain repurchase. The model in the Appendix provides a more general illustration of this point.

3. Numerical Example

I have shown how the constant-share approach ties an executive's equity payoffs to shareholder value in the context of a repurchase and eliminates gains from bargain-price buybacks. I now return to the example of ABC Corporation to show how the approach deters CEO from engaging in a value-wasting bargain repurchase that CEO would undertake under standard equity-based pay arrangements.

Recall that ABC has two shares outstanding. CEO owns one share; public shareholders hold the other. Suppose that, as before, ABC's value at Liquidation Date absent a repurchase would be \$20. Thus, absent a repurchase, shareholder value would be \$20 and each share would receive \$10.

Suppose that ABC's CEO is considering repurchasing one share at \$8 before Liquidation Date. This price is \$2 less than the stock's actual value. Suppose that the repurchase would destroy \$1 of shareholder value by squandering cash that could be used to exploit valuable opportunities. Thus, the repurchase of a share for \$8 would reduce ABC's value by \$9.

As demonstrated earlier, CEO will nevertheless have an incentive to repurchase. If there is no repurchase, CEO will be paid \$10 for his share. If there is a repurchase of one share, CEO will receive \$11 for her share. CEO thus has an incentive to engage in the repurchase even though it reduces shareholder value from \$20 to \$19.

Now suppose that the constant-share approach is implemented. Because ABC is repurchasing 50% of its shares, CEO must sell 50% of her shares (or 0.5 shares) to ABC in the repurchase. This sale will leave her with 0.5 shares that will be cashed out at Liquidation Date. The payoff to CEO from the repurchase would thus be \$9.50: \$4 received in the repurchase plus \$5.50 received at Liquidation Date. CEO would be made worse off by the value-reducing repurchase and would not conduct it.⁷⁸

⁷⁸ We can also use this example to confirm that if the repurchase would increase shareholder value, the constant-share approach would not deter CEO from conducting the repurchase. The benefit to the executive as a non-trading shareholder would exceed the cost to her as a redeeming

4. Overpriced Repurchases?

By tying executives' equity payoffs to shareholder value, the constant-share approach rewards executives for a repurchase if and only if it increases shareholder value. Thus, an executive will be rewarded for a value-increasing repurchase even if the stock is currently overpriced. One might be concerned that executives will conduct a repurchase that is value increasing but hurt non-trading shareholders because the stock was overpriced.

However, an executive of a firm with overpriced stock could simply choose to distribute cash via a dividend, which has no distributional effects on shareholders and is often a more efficient means of distributing cash than a share repurchase.⁷⁹ Thus, the constant-share approach is unlikely to make non-trading shareholders worse off in any situation in which the firm ends up distributing cash.

Moreover, if an inflated-price repurchase were the only mechanism for distributing cash that would be better invested outside the firm, executives *should* engage in the repurchase. The repurchase might make non-trading shareholders worse off, but it would make redeeming shareholders better off by a greater amount. From a shareholder-value perspective, it would thus be desirable to conduct the repurchase.

C. Constant-Share Approach in a Share-Issuing Firm

I now turn to consider how the constant-share approach operates when a firm issues equity. As I will show, the constant-share approach ties an executive's payoff to the total

shareholder. Suppose that the repurchase would increase shareholder value by \$1: distributing \$8 to repurchase one share would reduce ABC's value by only \$7. CEO would receive \$4 via the repurchase plus \$6.50 when ABC is liquidated for a total of \$10.50, \$0.50 more than absent the repurchase. As a result, CEO would have an incentive to conduct the repurchase. For a general model illustrating that the constant-share approach rewards executives for engaging in repurchases if and only if they increase value, see the Appendix.

⁷⁹ See Fried, *Informed Trading*, *supra* note x, at 1369-1370.

amount of value flowing to both non-trading and investing shareholders. This mechanism eliminates the executive's incentive to engage in an equity issuance merely because it transfers value from investing shareholders. Instead, the executive will be rewarded for engaging in any equity issuance that actually increases shareholder value.

1. Tying Equity Pay to Shareholder Value

The constant-share approach ties executives' equity payoffs to shareholder value whenever the firm issues equity. To see why this is the case, suppose that an executive (CEO), at the time of a possible equity issuance, owns 10% of the firm's stock. Suppose that the firm is considering issuing an amount of stock equal to 25% of the outstanding shares at the current trading price.

Under standard equity-based pay arrangements, CEO would own 8% of the firm's stock after the transaction.⁸⁰ Thus, CEO would receive 8% of the value flowing to non-trading shareholders, the shareholders who do not invest in the equity issuance, and 0% of the value flowing to investing shareholders. CEO's equity payoffs would thus reflect the value flowing to non-trading shareholders rather than all the firm's shareholders. As seen in Part III, CEO would be rewarded for engaging in inflated-price issuances even if they reduce shareholder value.

Under the constant-share approach, CEO would be required to buy 10% of the shares sold by the firm. Because the firm is selling an amount of shares equal to 25% of its pre-sale outstanding equity, CEO would be required to buy 2.5% of the pre-sale equity. That is, CEO would be required to increase her 10% stock ownership by 25%, the proportion by which the equity offering increases the firm's shares.

After the equity issuance, CEO would continue to own 10% of the firm's equity. Thus, CEO would receive 10% of the

⁸⁰ Because the firm is issuing an amount of equity equal to 25% of its pre-transaction outstanding shares, the proportional interest of each remaining shareholder, including the executive, will drop by 20%.

value flowing to non-trading shareholders. But, because CEO also buys 10% of the equity issued by the firm, CEO receives 10% of the value flowing to investing shareholders. As a result, CEO's payoff equals 10% of the value flowing to all the firm's shareholders. Thus, CEO has an incentive to conduct the equity issuance if and only if the issuance increases shareholder value.

2. *No Reward for Inflated-Price Equity Issuances*

The constant-share approach eliminates executives' distributional incentives to conduct equity issuances. To see why this is the case, let us continue with the example of CEO, who, at the time of a possible equity issuance equal to 25% of the firm's outstanding shares, owns 10% of the firm's stock. Suppose that the equity issuance would be at an inflated price – an amount greater than the shares' actual value.

As I explained earlier, an equity issuance has the same distributional effects as a transaction in which non-trading shareholders directly sell shares to investing shareholders at the issuance price.⁸¹ Absent the constant-share approach, the inflated-price equity issuance would transfer value from investing shareholders to CEO. CEO would capture 8% of the value transferred from investing shareholders to non-trading shareholders.

Under the constant-share approach, however, CEO would gain 10% of the value flowing to non-trading shareholders as a non-trading shareholder but lose 10% of that same value as an investing shareholder. For CEO, it would be a wash: her gain as a non-trading shareholder would be precisely offset by her loss as an investing shareholder. The constant-share approach thus eliminates any distributional benefit to CEO from an inflated-price equity issuance. CEO would not have any incentive to conduct an equity issuance merely to transfer value from investing to non-trading shareholders.

⁸¹ See Part III.A.1 *supra*.

3. Numerical Example

We have seen why the constant-share approach ties an executive's equity payoffs to shareholder value in the context of an equity issuance and eliminates gains that would arise from inflated-price equity issuances. I now return to the example of ABC corporation to show how the approach deters CEO from engaging in a value-wasting equity issuance that CEO would undertake under standard equity-based pay arrangements.

Again, ABC has two shares outstanding. CEO owns one share; public shareholders hold the other. Suppose that, as before, ABC's value at Liquidation Date absent an equity issuance would be \$20. Thus, absent a repurchase, shareholder value would be \$20 and each share would receive \$10.

Suppose that ABC's CEO is considering issuing one share before Liquidation Date for \$14 per share, \$4 more than its actual value. Suppose that the equity issuance would destroy \$1 of shareholder value. Thus, the equity issuance would increase ABC's value by \$13 (rather than \$14).

We saw that CEO will nevertheless have an incentive to conduct the equity issuance. Absent an equity issuance, CEO will be paid \$10 for his share. If there is an equity issuance, CEO will receive \$11 for his share. CEO thus has an incentive to engage in the equity issuance even though it reduces shareholder value from \$20 to \$19.

Now suppose that the constant-share approach is implemented. Because ABC is increasing its outstanding shares by 50%, CEO must increase the number of shares she owns by 50% by buying 0.5 shares in the equity issuance. This purchase will leave her with 1.5 shares that will be cashed out at Liquidation Date. The payoff to CEO from the equity issuance would thus be \$9.50: \$16.50 received upon liquidation less \$7 paid for the 0.5 share in the equity issuance. CEO would thus be made worse off by the value-reducing equity issuance and not have an incentive to conduct it.⁸²

⁸² For a general model illustrating that the constant-share approach rewards executives for engaging in equity issuances if and only if they increase value, see the Appendix.

4. Sale of Underpriced Stock?

By tying executives' equity payoffs to shareholder value, the constant-share approach rewards executives for an equity issuance if and only if it increases shareholder value. Thus, an executive will be rewarded for a value-increasing equity issuance even if the stock is currently underpriced. One might be concerned that executives might conduct an equity issuance that is value-increasing but nevertheless hurts non-trading shareholders because the stock is underpriced.

Executives, however, may be able to finance expansion through retained earnings or debt. Indeed, executives generally prefer to use retained earnings or debt rather than equity issuances to fund investments. Thus, executives will generally not use equity issuances unless these other financing mechanisms prove insufficient.⁸³

In any event, from an economic perspective, executives *should* engage in a value-increasing equity-financed expansion when the stock is underpriced. Even if non-trading shareholders are made worse off, investing shareholders will be better off by a greater amount and shareholder value thus will be greater. To the extent the constant-share approach leads to more of such underpriced equity issuances, this will be a desirable outcome of the approach.

D. Transaction Costs

This section considers the transaction costs associated with the constant-share approach. Could such an arrangement be put in place at low cost? Yes. The constant-share approach can be implemented easily even if a firm conducts hundreds of transactions in its own equity each year.

The constant-share approach, if implemented in the manner I have until now assumed, would require that an executive sell shares every time the firm repurchases shares

⁸³ See Myers & Majluf, *supra* note x, at ____.

and buy shares every time the firm issues equity. Share repurchases and equity issuances are quite common. A firm may enter a share repurchase program and buy stock almost every week over a period of months or years.⁸⁴ Implementation of this approach every time the firm engages in a stock transaction would require the executive to frequently rebalance her holdings. This frequent rebalancing would give rise to transaction costs.

Fortunately, there is a very simple method of implementing the constant-share approach. The firm could track its repurchases and equity offerings each year. At the end of the year, the firm could require the executive to engage in a single transaction with the firm that rebalances her equity positions.

For example, suppose a firm repurchases 3% of its stock at an average price of \$100 in January-July and sells 1% of its stock for an average price of \$110 in August-December. On December 31st, the executive could be required to sell 3% of her stock to the firm for \$100 and then buy an amount of stock equal to 1% of her remaining stock from the firm at \$110 per share.⁸⁵ The purchases and sales could be netted so that there is one transaction in which the executive buys (or sells) a certain number of shares for a certain amount of money.⁸⁶

⁸⁴ See Fried, *Informed Trading*, *supra* note x, at 1335.

⁸⁵ Because the firm will end up repurchasing slightly more than 3% of its stock after the end-of-year adjustment, the actual amount of stock the executive must sell back to the firm for \$100 per share is slightly greater than 3%. In particular, if a firm repurchases 3% of its stock while an executive owns 2% of the stock, after the repurchase the executive would be required to sell 3/98 of her stock back to the company to maintain her 2% ownership. Similarly, the executive would be required to buy slightly more than 1% for \$110. See the Appendix for more details on how a firm could make such post transaction adjustments.

⁸⁶ If the firm required the executive to buy or sell actual shares, one might be concerned that such an end-of-year adjustment would cause the firm to distribute or take in more cash than it intended. The CEO, however, typically owns less than 2% of a firm's stock, and the top-5 executives typically own less than 6% of a firm's stock. Thus, depending on how widely the constant-share approach is applied, the incremental effect on the firm's cash position is likely to be small.

Importantly, CEO's transactions could be effected without the purchase or sale of actual shares. For example, if CEO owns 2% of the firm's shares and the firm repurchases 1,000,000 shares, CEO could enter into an agreement with the firm to swap, at some point in the future, the then-current value of 20,000 of her shares to the firm for their value at the time of the repurchase price plus an amount accounting for the time value of the money.⁸⁷ Similarly, if the firm issues 1,000,000 new shares, CEO could be required to swap the value of 20,000 shares at the issuance price plus interest (or something analogous) for the then-current value of the shares.⁸⁸

One might argue that the constant-share approach is still too complicated, even if the adjustment in the executive's equity holdings occurs only once per year. But the constant-share approach is no more complex than commonly used

More importantly, the firm could easily anticipate the end-of-year adjustment when conducting its transactions. For example, if the firm wishes to distribute \$500 million during the year through a repurchase and it knows the executives subject to the constant-share approach own 4% of the firm's stock, it can distribute \$480 million throughout the year. After the repurchase is completed, the firm can buy \$20 million of stock from the executives at the average price paid to public shareholders for the repurchased stock. As I explained in Section A, the constant-share approach could always be implemented with the use of swap agreements that are settled when the executive is allowed to unwind her shares rather than the purchase or sale of actual shares in the short-term.

⁸⁷ This extra amount could be interest or the change in the value of an investment index. I ignore, for purposes of this illustration, the potentially different tax consequences that would result from the use of such a swap arrangement.

⁸⁸ One could limit application of the constant-share approach to repurchases and equity issuances that lead to "material" changes in the firm's capital structure. For example, executives might not be subject to a constant-share adjustment at the end of the year if during that year the firm repurchases less than (say) 1% of its shares outstanding at the beginning of the year, and total issuances are less than (say) 1% of its outstanding shares at the beginning of the year. Because such de minimis equity transactions are unlikely substantially affect shareholder value, the benefit of applying the constant-share approach to these transactions will be small. I thank Robert Jackson for this suggestion.

bonus arrangements, long-term incentive plans, deferred compensation arrangements, and pension plans.⁸⁹ And part of the complexity of these arrangements is driven by executives' and directors' interest in "camouflaging" the extent to which executive pay arrangements deviate from what is optimal for shareholders.⁹⁰ The constant-share approach, which actually improves executives' incentives, is no more complicated than many other features of existing executive compensation arrangements, including those that worsen these incentives. Indeed, it is far less complex. It would be ironic to reject the constant-share approach, which simply aligns executives' interests with those of all the firm's shareholders, on the grounds that it is too complicated.

⁸⁹ See, e.g., John M. Abowd and David Kaplan, *Executive Compensation: Six Questions that Need Answering*, 13 J. ECON. PERSP. 145, 148 (1999) (describing U.S. CEO compensation as composed of "complex" instruments). The complexity of executive compensation arrangements is immediately apparent to anyone who reads executive compensation disclosures in annual proxy statements.

⁹⁰ See Bebchuk and Fried, *Pay Without Performance*, *supra* note x, at 67-68, 105-07.

V. Conclusion

This paper has identified a substantial flaw with standard equity-based pay arrangements, even if they require the executive to hold stock for the long-term: they distort executives' incentives when the firm buys and sells its own shares. In particular, standard compensation arrangements reward executives for engaging in share repurchases and equity issuances that reduce shareholder value, the amount of cash flowing to a firm's shareholders over time.

The core problem with standard equity-based pay arrangements is that they tie executives' payoffs only to the value flowing to what I call "non-trading shareholders" - shareholders who neither buy stock from nor sell stock to the firm before the executive cashes out her equity. Current arrangements fail to tie the executives' payoffs to the value flowing to redeeming shareholders, those who sell stock to the firm, or to the value flowing to investing shareholders, those who buy stock from the firm. Thus, these arrangements reward executives for transferring value from redeeming and investing shareholders to non-trading shareholders, even if the total amount of cash flowing to shareholders over time is diminished.

The paper has also put forward a new "constant-share" approach to equity-based compensation that completely eliminates these distortions by tying executives' equity payoffs to shareholder value. Under this approach, executives would be required to sell some of these shares (or buy additional shares) whenever the firm repurchases its own stock (or issues new equity) so that the executives' proportional ownership in the firm remains constant as the firm transacts in its own stock. The paper also explained that such an approach could easily be implemented.

I hope that the analysis I have offered will sharpen understanding of the potentially deleterious effects of tying executive pay to the stock price, even the long-term stock price, and assist regulators, directors, and shareholders in improving executive compensation and corporate governance in public companies.

APPENDIX

The Appendix introduces an analytical framework for examining the effect of equity-based pay on executives' incentives to engage in repurchases and equity issuances and the operation of the constant-share approach.

A. Analytical Framework

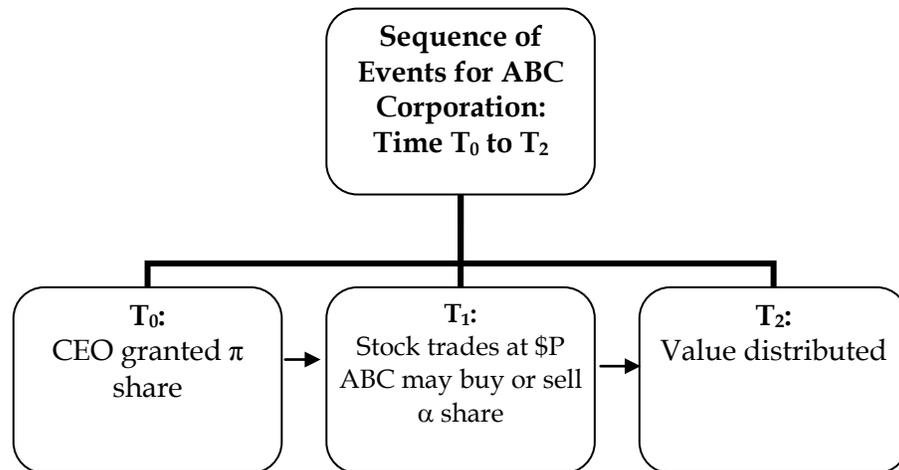
Consider a Corporation ("ABC") that initially has a single share outstanding and exists in three sequential periods: (a) Time $T=0$; (b) Time $T=1$, and (c) Time $T=2$.

- At $T=0$, ABC has a single manager ("CEO") who is granted a fraction π of ABC's equity, which she must hold until $T=2$.
- At $T=1$, ABC's share (or a fraction of it) can be traded for a price P_1 per share. At $T=1$, ABC may or may not repurchase or issue an additional amount of equity equal to a fraction α of its single share.
- At $T=2$, ABC is liquidated and its value is distributed pro rata to its shareholders.

ABC's $T=2$ value will depend on whether there has been a transaction in ABC's stock at $T=1$. In the absence of any transactions in the firm's stock (such as a repurchase or sale of equity), ABC's $T=2$ value is V .

If there is a repurchase (or sale) of equity, ABC's $T=2$ value will be reduced (increased) by the amount paid (received) for any stock repurchased (sold) at $T=1$ plus an amount X representing the other effects of the transaction on ABC's value. From the perspective of shareholder value, ABC should repurchase equity or issue equity if and only if (iff) $X > 0$.

Figure 1. Sequence of Events for ABC Corporation



B. Shareholder Value and Final-Period Stock Price

Shareholder value (SV) is the net amount of value flowing from ABC to its shareholders between T=0 and T=2. The final-period stock price is ABC's T=2 value, divided by the number of shares outstanding at T=2.

1. No-Transaction Scenario

Denote SV_n as the shareholder value when ABC neither repurchases nor issues equity at T=1. It should be easy to see that:

(1a) $SV_n = V$.

Denote P_{2N} as the final-period stock price if there is no repurchase or equity issuance. It should also be easy to see that:

$$(2a) P_{2n} = V.$$

2. Repurchase Scenario

Denote SV_r as the shareholder value when ABC repurchases α share at $T=1$ for a price P_1 , and the repurchase changes ABC's value by X . It follows that:

$$(1b) SV_r = \alpha P_1 + (V - \alpha P_1 + X) = (V + X).$$

Denote P_{2R} as the final-period stock price if there is a repurchase.

$$(2b) P_{2r} = (V - \alpha P_1 + X) / (1 - \alpha).$$

3. Equity-Issuance Scenario

Denote SV_i as the shareholder value when ABC issues α share at $T=1$ for a price P_1 that changes ABC's value by X .

$$(1c) SV_i = (V + \alpha P_1 + X) - \alpha P_1 = (V + X).$$

Denote P_{2i} as the final period stock price if there is an equity issuance.

$$(2c) P_{2i} = (V + \alpha P_1 + X) / (1 + \alpha).$$

SV and the final-period stock price for each scenario are summarized in the table below.

Table 3. Shareholder Value and Stock Price

	Shareholder Value	Stock Price
No transaction	V	V
Repurchase	V+X	$(V-\alpha P_1+X)/(1-\alpha)$
Equity issuance	V+X	$(V+\alpha P_1+X)/(1+\alpha)$

C. CEO's Incentive to Engage in Value-Wasting Repurchases

Consider CEO's incentive to repurchase at T=1 when, as assumed previously, her payoff is tied to the T=2 stock price.

Given CEO's incentive to maximize the T=2 stock price, it follows from (2a) and (2b) that CEO will repurchase at T=1 iff

$$(3) (V-\alpha P_1+X)/(1-\alpha) > V.$$

Simplifying (3) yields

$$(4) V-P_1 > -X/\alpha.$$

It follows from (4) that CEO has an incentive to engage in a value-wasting repurchase when

$$(5) 0 > X > \alpha(P_1-V).$$

Remark. It should be easy to see from (5) that if $P_1 \geq V$ (the stock is properly or overpriced at T=1), CEO does not have an incentive to conduct a value-wasting repurchase. However, if $P_1 < V$ (the stock is underpriced at T=1), CEO may have an interest in conducting a value-wasting repurchase.

D. CEO's Incentive to Engage in Cheap Empire Building

Now consider CEO's incentive to issue equity at T=1 when, as assumed previously, her payoff is tied to the T=2 stock price.

Given CEO's incentive to maximize the T=2 stock price, it follows from (2a) and (2c) that CEO will issue equity at T=1 iff

$$(6) (V + \alpha P_1 + X) / (1 + \alpha) > V.$$

Simplifying (6) yields

$$(7) P_1 - V > -X / \alpha.$$

It follows from (7) that CEO has an incentive to engage in a value-wasting equity issuance when

$$(8) 0 > X > \alpha(V - P_1).$$

Remark. It should be easy to see from (8) that if $P_1 \leq V$ (the stock is properly or underpriced in the short-term), CEO does not have an incentive to conduct a value-wasting issuance. However, if $P_1 > V$ (the stock is overpriced in the short-term), CEO may benefit from conducting a value-wasting issuance.

E. Constant-Share Approach

Under the constant-share approach, CEO must participate in a repurchase (issuance) by selling (buying) a fraction of the shares purchased (sold) by the company equal to his pre-transaction percentage interest in ABC, π . This approach incentivizes CEO to conduct a repurchase or equity issuance if and only if it increases shareholder value.

1. Aligning CEO's Payoff with Shareholder Value

Denote the CEO's payoff if there is no repurchase as W_n , if there is a repurchase as W_r , and if there is a stock issuance as W_i .

If there is no repurchase or equity issuance, it should be easy to see from (2a) that

$$(9a) W_n = \pi V.$$

If there is a repurchase of α share at $T=1$ for price P_1 , CEO will be required to sell $\pi\alpha$ share at price P_1 to ABC. CEO will receive $\pi\alpha P_1$ at $T=1$ and be left with $\pi(1-\alpha)$ shares at $T=2$. It follows from this and (2a) that

$$(9b) W_r = \pi\alpha P_1 + \pi(1-\alpha)(V-\alpha P_1+X)/(1-\alpha) = \pi(V+X).$$

If there is an issuance of equity at $T=1$, CEO will pay $\pi\alpha P$ and be left with $\pi(1+\alpha)$ shares at $T=2$. It follows from this and (2c) that

$$(9c) W_i = -\pi\alpha P_1 + \pi(1+\alpha)(V+\alpha P_1+X)/(1+\alpha) = \pi(V+X).$$

The CEO's payoff under each scenario can be summarized in the following table.

Table 4: Shareholder Value and CEO Payoff under Constant-Share Approach

	Shareholder Value	CEO Payoff
No transaction	V	πV
Repurchase	$V+X$	$\pi(V+X)$
Equity issuance	$V+X$	$\pi(V+X)$

Thus, CEO has an incentive to undertake a repurchase or equity issuance iff $X > 0$. That is, CEO should undertake the transaction if and only if it increases shareholder value.

2. Ex Post Implementation

Above, it was assumed that the CEO would participate pro rata in any equity transaction at $T=1$. Thus, because CEO owns π of ABC's equity, she would sell or buy $\alpha\pi$ shares when ABC buys or sells α of its equity. Under this constant-share approach, CEO's payoff is tied to shareholder value.

However, CEO's payoff could be tied to shareholder value through the use of an ex post adjustment made to CEO's position *after* the equity transaction took place. Denote as $\beta\pi$ the amount of shares CEO must sell (or buy) after ABC's repurchase (or equity offering) in order to tie CEO's payoff to shareholder value. Such an adjustment would change the amount of equity outstanding and ABC's value.

Suppose ABC repurchases α share at $T=1$ for price P_1 , and then CEO sells $\beta\pi$ shares for price P_1 .

ABC's $T=2$ value will be $V - [\alpha + \beta\pi]P_1 + X$, and it will have $1 - \alpha - \beta\pi$ outstanding shares.

Denote CEO's payoff in a repurchase when there is an ex post adjustment as W_r' . It follows that

$$(10) W_r' = \beta\pi P_1 + \pi(V - [\alpha + \beta\pi]P_1 + X) / (1 - \alpha - \beta\pi).$$

Aligning CEO's payoff with shareholder value requires that $W_r' = W_r$ which in turn implies that

$$(11) W_r' = \pi(V + X).$$

From (10) and (11), it follows that

$$(12) \beta = \alpha / (1 - \pi).$$

It can easily be shown that the post-transaction adjustment in the case of an equity issuance is the same. CEO must buy $\beta\pi$ shares at P_1 , where $\beta = \alpha / (1-\pi)$.