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The *Real* Role of Dividends in Building Wealth

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Clearing Up Muddled Thinking about Dividends

These data put the lie to the conventional view that equities derive most of their returns from capital appreciation, that income is far less important, if not irrelevant.

-Robert D. Arnott and Peter L. Bernstein
*What Risk Premium Is "Normal"?*¹

Over the long run [dividends] provide the bulk of equity investors' returns.

-Buttonwood
*The Economist*²

Price Appreciation (Not Dividends) Is the Key to Accumulating Capital

Corporate earnings have rebounded smartly, operating profit margins are high, balance sheets are flush, and equity returns over the past decade have been punk. It's no wonder that investors have zeroed in on dividends as a means to boost shareholder returns. A bird in the hand, the thinking goes, is worth two in the bush.

An investor's goal is to accumulate capital over time. Investing at its core is the act of forgoing current consumption in order to satisfy future liabilities or to consume more down the road. If capital accumulation is the prime objective, investors must think clearly about what builds capital. Unfortunately, there seems to be a great deal of confusion over the topic, much of it surrounding the role of dividends.

If you listen to the press or read missives from investment firms, you might conclude that dividends play a prime role in capital accumulation. In fact, well-known strategists have pointed out that dividends have accounted for 90 percent of equity returns over the past century.³ This statistic is potentially very misleading and warrants further examination. Here's the ending without the plot: *price appreciation is the only source of investment returns that increases accumulated capital over time.*⁴

The cause of the confusion is that analysts do not distinguish between the equity rate of return and the capital accumulation rate. Depending on the choices of the shareholder, the rates can be very different. Understanding the distinction is essential for assessing past results and for thinking about satisfying future financial obligations.

Equity Rate of Return Versus the Capital Accumulation Rate

The equity rate of return is simply price appreciation plus the dividend yield. If you assume capital appreciation of 7 percent and a yield of 3 percent (not too far from the averages for the S&P 500 Index since World War II), the equity rate of return is 10 percent [0.07 + 0.03]. The equity rate of return is an ex-post figure and is conceptually equivalent to the ex-ante cost of equity capital.

However, investors and researchers generally compute equity returns using the concept of total shareholder return (TSR). The simplest calculation of TSR has two components, the annual price appreciation rate (g) and the dividend yield (d).⁵ You can express TSR as follows:

$$\text{TSR} = g + (1 + g) \cdot d$$

For example, if you assume that g is 7 percent and d is 3 percent, then the TSR is 10.21 percent $[0.07 + 1.07 \cdot .03]$. TSR equals the investor's capital accumulation rate only when *all dividends are reinvested back into additional shares of the company*. So the difference between TSR and the equity rate of return is dividend reinvestment. As we will see, this reinvestment makes a meaningful difference in ending capital balances over time. In fact, the capital accumulation rate can be well below the equity rate of return if a shareholder decides to consume rather than reinvest dividends.

The assumption of full dividend reinvestment is rarely valid in practice. Mutual funds collect and reinvest the dividends from the companies that they own, but they have latitude in how they reinvest them. In addition, there is no evidence that dividends from a particular company are reinvested back into that company's stock dollar for dollar. So within a mutual fund portfolio, returns for an individual stock can deviate from TSR because not all dividends are reinvested on a prorated basis.

While most mutual fund investors elect to reinvest their dividends and capital gains back into the fund, they are notorious for buying after a run up in the market (or in the fund) and for selling after a tumble. As a consequence, individual investors do worse than the funds in which they invest despite the fact that most reinvest while they do own the fund.⁶ So a fund's TSR, as well as the TSR's of the stocks within the fund, bear little relation to the rate at which investors actually accumulate capital.

The story is even less optimistic for individual investors. Estimates suggest that investors who directly own individual stocks reinvest less than 10 percent of the dividends they receive. This is in spite of the fact that most companies offer a dividend reinvestment program at little or no cost. As a consequence, individual shareholders rarely earn the TSR for a stock. Even though financial planners widely use past TSR's as a basis for considering future returns, the fact is that very few institutions or individuals actually earn the TSR.

Let's take a step back and analyze a shareholder's choices when a company pays a dividend. We'll assume a \$100 stock price and a 3 percent dividend yield.

Before dividend payment: \$100 stock

After dividend payment: \$97 stock + \$3 dividend⁷

Alternatives for the dividend:

- consume (i.e., spend)
- reinvest back into the company's shares
- reinvest in some other investment

A shareholder can select these alternatives individually or in some combination, and what a shareholder does with her dividends reflects her consumption needs (need for money now versus later). If she consumes, it is clear that the price appreciation of the stock is the only source of returns. If she reinvests her dividend, she is maintaining the amount of her capital committed to the stock and behaves as if the stock remains an optimal investment based on anticipated price appreciation. Superior expected price appreciation would be the basis for investing elsewhere.

Not all investors can reinvest 100 percent of their dividends. We can calculate the capital accumulation rate by reflecting the percentage of dividends that shareholders reinvest through the variable, r.

$$\text{Capital accumulation rate} = g + (1+g)^d \cdot r$$

If a shareholder decides to invest 50 percent of her dividends, for example, and we continue with our assumptions that g equals 7 percent and d is 3 percent, we get a capital accumulation rate of 8.61 percent $[\text{.07} + (1 + \text{.07})^3 \cdot \text{.03} \cdot \text{.5}]$. If we set r at zero—our shareholder reinvests none of her dividends—then the capital accumulation rate equals g , or the price appreciation rate. Again, the TSR’s that researchers cite apply only in the case where r is 100 percent. We can also use r to reflect the taxes paid for a taxable account. As an example, for an investor who reinvests all of her after-tax dividends, $r = (1 - t)$, where t is the tax rate on dividends.

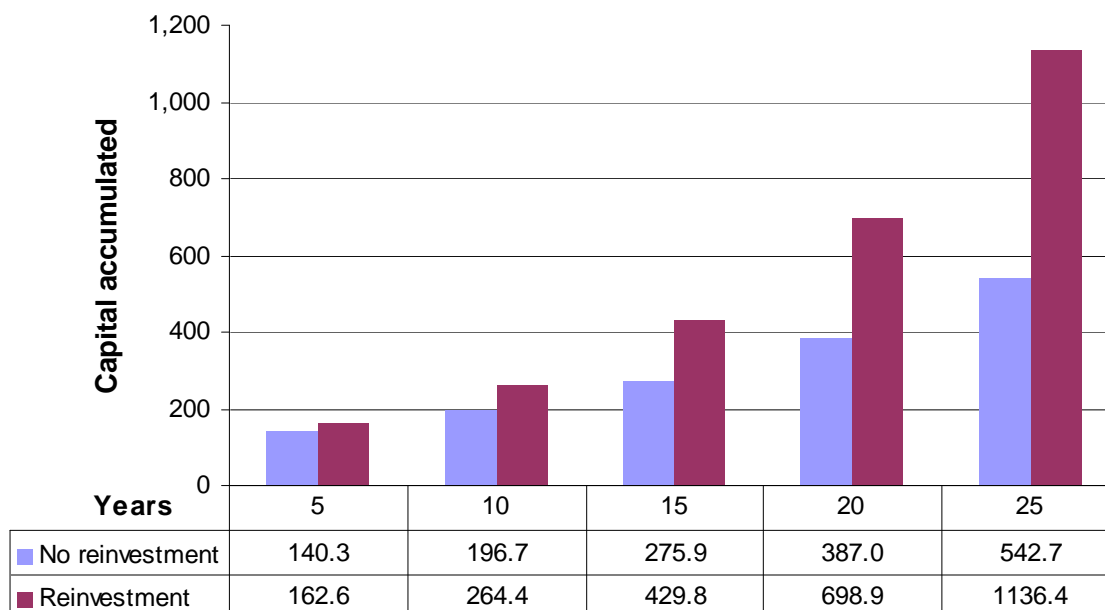
With these pieces in place, we can now see that capital accumulation only comes from three sources:

- How much the shareholder invests
- How long the shareholder invests
- Price appreciation

The percentage of reinvested dividends, r , answers the question of *how much* the shareholder invests. By reinvesting all dividends, an investor is simply maintaining the amount of capital in the investment. The time horizon is the shareholder’s expected holding period, or *how long*. The essential point is that if a shareholder reinvests some or all of her dividends, it is the investment’s price appreciation that determines the rate of capital appreciation.

Exhibit 1 shows how important dividend reinvestment is to capital accumulation. Sticking with our assumptions of 7 percent price appreciation and a 3 percent dividend yield, full reinvestment leads to 16 percent more accumulated capital after 5 years. The impact becomes even more dramatic as time goes on. Twenty-five years later, the accumulated capital under the reinvested dividend assumption is over double that of the no-reinvestment case.

Exhibit 1: Capital Accumulation: No Dividend Reinvestment Versus Full Dividend Reinvestment



Source: LMCM analysis. **For illustrative purposes only and not representative of any investment or product.** Dividends are not guaranteed, and a company may reduce or eliminate its dividend at any time. There is no guarantee that the reinvestment of dividends will ensure a profit.

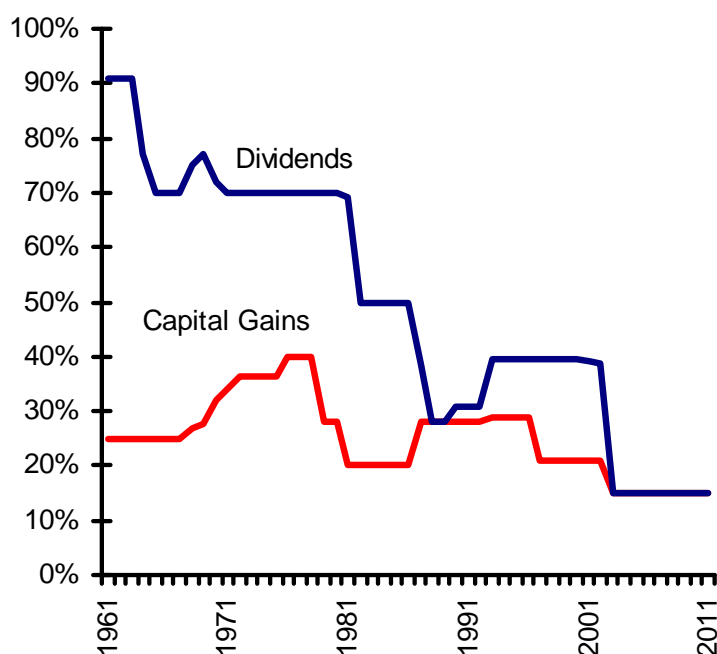
Commentary suggesting that equity returns largely come from dividends neglects the central role of dividend reinvestment and the subsequent price appreciation from those invested dividends. For example, a recent article claimed “investors made the lion’s share of their returns from the dividend yield.”⁸ This statement is simply not true if you focus on capital accumulation. Dividends are not extra (using our example, \$100 = \$97 + \$3) and reinvesting dividends is equivalent to preventing a withdrawal from the capital account. With the account whole, *capital accumulation relies solely on the rate of price appreciation.*

Sometimes analysts argue that dividends are attractive because a dividend today is more certain than a capital gain tomorrow. This is wrong. The correct comparison is between dividends today and price appreciation today.⁹ A company that pays a dividend is returning part of your capital stake and with it introduces an opportunity cost. What you do with the dividend plays a central role in determining your ultimate accumulated capital.

Taxes also have a meaningful effect on the capital accumulation rate. In his paper, “Dividend Reinvestment, Price Appreciation and Capital Accumulation,” Al Rappaport, a professor emeritus at Northwestern University’s Kellogg School of Management, shows the enormous role of taxes by looking at the TSR’s of IBM and Standard Oil of New Jersey (now Exxon Mobil) from 1950-2003 before and after taxes.¹⁰ Rappaport selected those two companies to challenge the claim by Jeremy Siegel, a professor of finance at the Wharton School of the University of Pennsylvania, that newer firms in the S&P 500 had delivered worse returns than older ones.¹¹ For example, Siegel shows that the lower-yielding IBM had a TSR of 13.83 percent [$.1141 + (1 + .1141)^*.0218$] versus 14.42 [$.0877 + (1 + .0877)^*.0519$] for the higher-yielding Standard Oil.

Siegel’s TSR calculations, however, did not consider taxes. Given that individual investors collected approximately one-half of all dividends during this period, the omission of taxes is material.¹² Further, the tax rate for that time averaged close to 50 percent (see Exhibit 2). Getting taxed at 50 percent is equivalent to reinvesting only one-half of all dividends. Following that adjustment, IBM’s returns of 12.62 percent [$.1141 + (1 + .1141)^*.0218*.5$] beat Standard Oil’s returns of 11.59 percent [$.0877 + (1 + .0877)^*.0519*.5$].

Exhibit 2: Tax Rates on Dividends and Capital Gains in the U.S. (1961 – 2011)



Source: HOLT, American Council for Capital Formation, and LMCM analysis.

Ex-post TSR's are used frequently as the basis for estimating the ex-ante equity risk premium and, accordingly, expected returns for equities. Further, a number of prominent analysts have claimed that dividends, not price appreciation, are the most important source of investment returns. However, we can now say the following:

- Almost no investor earns the TSR because of fees, taxes, or poor timing.
- Mutual funds, in the aggregate, don't earn the TSR for their asset class because they charge fees.¹³
- Individuals who own stock directly rarely earn TSR's because the vast majority of them do not reinvest their dividends. Further, many of those who do reinvest are subject to taxes, preventing them from reinvesting 100 percent.
- Individuals invested in mutual funds typically do reinvest their dividends, but earn returns lower than the average mutual fund return as a consequence of bad timing (i.e., they buy when prices are high and sell when they are low).
- Price appreciation is the only source of investment returns that increases accumulated capital.

Dividends and Share Buybacks – Some Quick Thoughts

I recently had a conversation with the chief financial officer of one of America's largest companies during which he lamented buying back stock in 2006 and 2007 at levels much higher than today, and suggested that the buyback was the biggest mistake he had ever made. I assured him that if he followed a sensible process in evaluating the buybacks, there was no need to deem the decision wrong just because the stock subsequently declined.

But his comment prompted me to consider a counterfactual: Would the CFO feel the same way if the company had paid out that cash in the form of dividends instead of share buybacks? I suspect strongly that neither he, nor any shareholders disgruntled by the buyback, would feel bad about the company having paid a dividend.

Academics have done a great deal of work on share buybacks from the company's point of view. We will consider the investor's point of view.¹⁴ The first issue is about theory versus practice. Dividends and buybacks are equivalent assuming no taxes, no transaction costs, and an efficient stock market. In practice, none of those assumptions hold. If anything, more realistic assumptions—most notably tax issues—make share buybacks more attractive than dividends to shareholders.

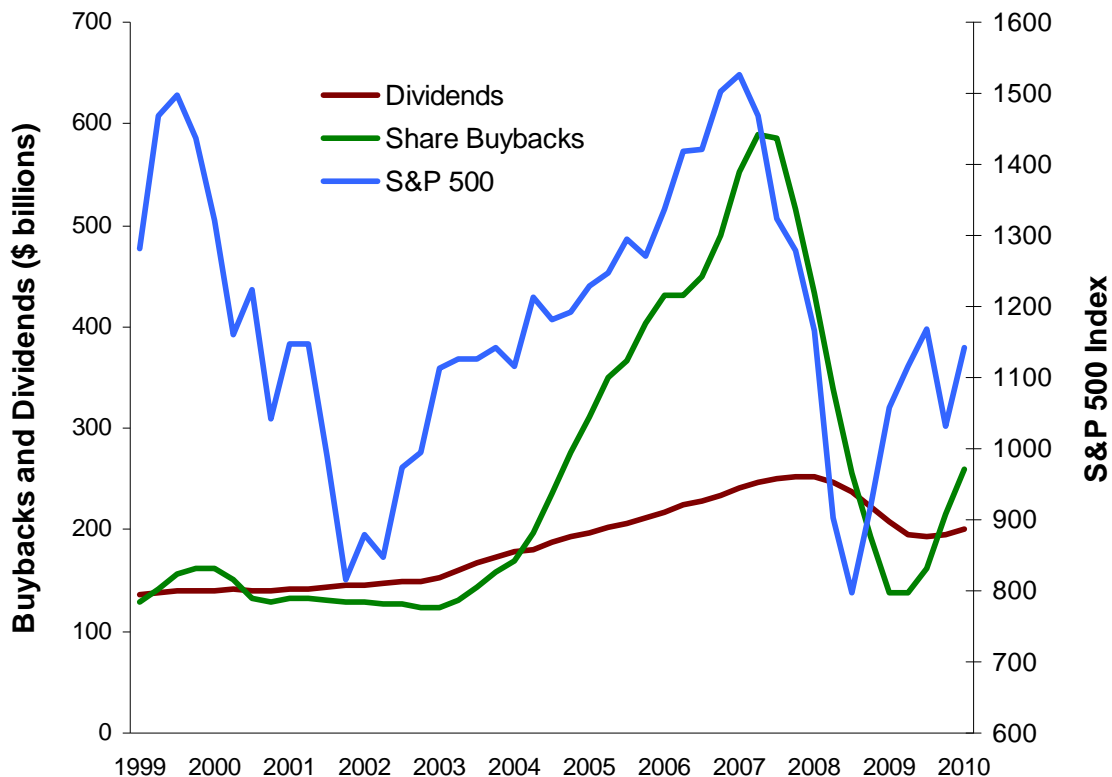
But there's a more basic reason why dividends and buybacks aren't equivalent, and it has to do with mental accounting. Executives consider dividends on par with investment decisions like capital spending. As a result, they are loath to cut a dividend once they've initiated one and do what they can to preserve or increase the level of dividends. This means that dividends are sticky: they move around less than earnings or the stock price.

Executives think of buybacks as one of the alternative ways to spend residual cash. If a company has money left over after paying all of its bills and making all of its investments, its managers will consider a buyback. Because buybacks are viewed as a residual, they are much more volatile than dividends (the standard deviation of the growth rate of rolling four-quarter buybacks for the S&P 500 is almost five times that of dividends). This is important for investors because it suggests that executives—no matter what they say—aren't always rigorous in how they execute buybacks.¹⁵ This does not mean that investors should necessarily prefer dividends to share buybacks, but it does urge shareholders to be vigilant.

When considering dividends versus buybacks, it would stand to reason that shareholders would favor buybacks for the stocks they own and intend to hold in their portfolio. Investors presumably own stocks they believe to be undervalued, and repurchasing shares is one of the surest ways to add per-share value for continuing shareholders.¹⁶ Shareholders who don't sell any stock effectively reinvest their share of the cash disbursements into an undervalued asset. Shareholders who receive dividends must pay taxes (if applicable) and then reinvest 100 percent of the proceeds in order to replicate the buyback.

Buybacks, similar to M&A activity, are cyclical. They occur when times are good and dry up when times are bad. Since the stock market tends to reflect the economy's general conditions and outlook, buybacks correlate with the levels of the market. (See Exhibit 3.) So, in general, executives are more apt to buy back shares when their stock price is high than when it is low. This has an important implication for investors: You are making an *active* decision if you do not sell any shares while a company is buying back stock. Doing nothing is doing something—increasing your proportionate stake in the company by effectively reinvesting.

Exhibit 3: Share Buybacks Vary More Than Dividends (Rolling Four-Quarter Totals)



Source: Standard and Poor's.

From the company's point of view, paying a dividend or buying back stock when the shares are overvalued does not make that much of a difference. But there is an important difference from the investor's standpoint. With a dividend, all investors are treated equally. When a company buys back its shares when they are overvalued, on the other hand, there is a wealth transfer from the continuing shareholders to the selling shareholders. Symmetrically, when a company buys back undervalued shares there's a wealth transfer from the selling shareholders to the ongoing shareholders. While the company may return the same amount of cash to shareholders through a buyback or a dividend, how value is distributed can be very different.

When considering dividends and buybacks, we can say:

- The calculation of equity returns is unaffected by buybacks. But whether a company consistently buys its shares when they are undervalued or overvalued can influence the price appreciation rate, g , for continuing shareholders.¹⁷
- A shareholder who sells a partial stake will lower his or her capital accumulation rate unless the proceeds are reinvested into an asset that will deliver equivalent, or higher, price appreciation, g .
- Shareholders who sell a fraction of their shares, f , of a company that doesn't pay a dividend will have a capital accumulation rate of $g - g*f$. Investors in the stocks of companies that pay a dividend and buy back stock have two choices: the dividend reinvestment rate, r , and the fraction of shares they sell. So:

$$\text{Capital accumulation rate} = \{g + (1+g)*d*r\}*(1-f)$$

In the end, a company's capital allocation choices and the stock market's pricing of a stock determine g and d . Shareholders control how much they invest through r and f . So investors must assess a company's capital allocation and the stock's potential mispricing and manage r and f to suit their personal needs.

Investors who seek to accumulate capital over time should have a clear sense of what contributes to the capital appreciation rate. Thoughtful investors recognize that past TSR's include a strong assumption that has limited relevance to the real world and that price appreciation is the only source of investment returns.

This piece was inspired by Al Rappaport's paper, "Dividend Reinvestment, Price Appreciation and Capital Accumulation," which appeared in *The Journal of Portfolio Management* in Spring 2006. I have also benefitted from many discussions with him and he provided valuable feedback on this piece. Thanks, too, to Dan Callahan, CFA, for his contributions.

All investments involve risk, including possible loss of principal. Dividends are not guaranteed, and a company may reduce or eliminate its dividend at any time. There is no guarantee that the reinvestment of dividends will insure a profit.

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Any statistics have been obtained from sources the author believed to be reliable, but the accuracy and completeness of the information cannot be guaranteed. The information provided in this commentary should not be considered a recommendation by LMCM or any of its affiliates to purchase or sell any security.

Endnotes

¹ Robert D. Arnott and Peter L. Bernstein, "What Risk Premium Is 'Normal'?" *Financial Analysts Journal*, Vol. 58, No. 2, March/April 2002, 64-85. Along the same lines, see Robert D. Arnott, "Dividends and the Three Dwarfs," *Financial Analysts Journal*, Vol. 59, No. 2, March/April 2003, 4-5.

² Buttonwood, "Divvying Up Returns: Investors Should Pay More Attention to Dividends," *The Economist*, September 10, 2010.

³ Richard Turnill and Stuart Reeve, "Why Dividends Make a Difference," *Blackrock: Point of View with Richard Turnill and Stuart Reeve*, December 2010; also James Montier, "A Man from a Different Time," *GMO White Paper*, August 2010.

⁴ This point, as well as the intellectual framework for this discussion, come from Alfred Rappaport, "Dividend Reinvestment, Price Appreciation and Capital Accumulation," *The Journal of Portfolio Management*, Vol. 32, No. 3, Spring 2006, 119-123.

⁵ Please note that the discussion here uses nominal, not real, figures. Researchers almost always represent TSR's using nominal and real figures. For more detailed approaches, see Roger G. Ibbotson and Peng Chen, "Long-Run Stock Returns: Participating in the Real Economy," in *The Equity Risk Premium: Essays and Explorations*, William N. Goetzmann and Roger G. Ibbotson, eds. (Oxford: Oxford University Press, 2006), 214-232. For a corporate finance point of view, see Tim Koller, Marc Goedhart, and David Wessels, *Valuation: Measuring and Managing the Value of Companies, Fifth edition* (New York: John Wiley & Sons, 2010), 48-52.

⁶ Michael Mauboussin, "Where Fools Rush In," *Time*, October 29, 2006.

⁷ As an empirical matter, the stock price doesn't go down by the exact amount of the dividend, largely because of taxes. The basic equation to determine how much a stock will drop when it goes ex-dividend is as follows:

$$\frac{P_b - P_a}{D} = \frac{(1-t_d)}{(1-t_{cg})}$$

Where P_b is the stock price before the ex-dividend date, P_a is the price after the ex-dividend date, t_d is the tax rate on dividend income and t_{cg} is the tax rate on capital gains. So if the tax rate on dividends and capital gains are the same (as they are today), then the decline in the stock price is roughly equivalent to the dividend. If the tax rate on dividends is higher than capital gains, which has been true for most of the last half century, then the decline in stock price will be less than the dividend. See Aswath Damodaran, "Returning Cash to the Owners: Dividend Policy," available at <http://pages.stern.nyu.edu/~adamodar/pdf/ovhds/ch10.pdf>.

⁸ Brett Arends, "ROI: The War on Dividend Yields," *The Wall Street Journal*, January 7, 2011.

⁹ Damodaran.

¹⁰ Rappaport.

¹¹ Jeremy J. Siegel, *The Future for Investors: Why the Tried and True Triumph Over the Bold and New* (New York: Crown Business, 2005), 7-9.

¹² Franklin Allen and Roni Michaely, "Payout Policy," in *The Handbook of the Economics of Finance, Volume 1A*, George M. Constantinides, Milton Harris, and Rene Stulz, eds. (Amsterdam: Elsevier, 2003), 337-429.

¹³ Kenneth R. French, "Presidential Address: The Cost of Active Investing," *Journal of Finance*, Vol. 63, No. 4, August 2008, 1537-1573.

¹⁴ For a discussion that reflects this literature, see Michael J. Mauboussin, "Clear Thinking About Share Repurchase: Capital Allocation, Dividends, and Share Repurchase," *Mauboussin on Strategy*, January 10, 2006.

¹⁵ Alon Brav, John R. Graham, Campbell R. Harvey, and Roni Michaely, "Payout Policy in the 21st Century," *Journal of Financial Economics*, Vol. 77, No. 3, September 2005, 483-527.

¹⁶ Warren Buffett said it well, "When companies with outstanding businesses and comfortable financial positions find their shares selling far below intrinsic value in the marketplace, no alternative action can benefit shareholders as surely as repurchases." From the Berkshire Hathaway annual report, 1984.

¹⁷ For a discussion of the rate of return for continuing shareholders of a company buying back stock, see Alfred Rappaport and Michael J. Mauboussin, *Expectations Investing: Reading Stock Prices for Better Returns* (Boston, MA: Harvard Business School Press, 2001), 173-175.

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