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Equity Payouts: Dividends and Share Repurchases

Does Payout Policy Matter?

As a CFO, you can do four things with the money the corporation has earned: You can keep it in the company (spend or reinvest it), pay off liabilities, pay dividends, or repurchase shares. The latter two courses of action increase the debt-equity ratio and send money from inside of the firm to the outside, thereby shrinking firm size. They are the primary mechanisms by which equity shareholders receive a payback on their investment, and thus they are of interest in themselves. In addition, they are under the regular and easy discretion of management. The board can decide on these payouts almost every quarter. This is why they warrant their own chapter—although a short one.

20.1 Background

You have already seen cash dividends in previous chapters. Let me recap for you.

A short retrospective on where you have seen dividends before.

➤ Separation of consumption and investment choices, Sect. 4.1, Pg.56.

➤ Tax clienteles and dividends, Sect. 18.6, Pg.506.

In the context of perfect markets, you learned that as an investor, you can always sell your shares, thereby breaking the link between when the project generates cash and when you need it. Cash dividends do not destroy or generate value, because they do not fall like manna from heaven.

In the context of imperfect markets, you learned that dividends are not a tax-efficient way to distribute cash, because investors cannot shelter dividend payments from the IRS as easily as they can shelter repurchase payouts or capital gains. However, in terms of managers spending money on themselves, a dividend payout can reduce agency conflicts.

You can also think of equity payouts as the opposite of equity share issuing activity. In this sense, the arguments from all previous capital-structure-related chapters apply just as well to equity payouts. An equity issue increases the firm size and decreases the debt-equity ratio. Both cash dividends and share repurchases reduce the firm size and increase the debt-equity ratio. However, the empirical evidence suggests that dividends and share repurchases are not very important in actively changing the debt-equity ratio in the typical publicly traded U.S. company.

Dividend Mechanics

The institutional basics of ordinary and special dividends.

A **dividend** is a distribution from the firm to its investors. If not qualified, this usually means a **cash dividend**. There are also regular and special dividends. At least since the 1970s, about 2,000 to 3,000 publicly traded stocks (out of 8,000 to 12,000) have been paying regular cash dividends, typically once per quarter. Special dividends are designated to be one-time payouts and can be considerably larger than ordinary dividends. Although the whole point of a special dividend is that investors should not expect it to be repeated, many companies repeat special dividends over and over anyway.

The two important dates: the announcement and the cum-/ex-dividend date.

There are two important dates when it comes to the execution of a dividend:

1. On the **declaration date**, the board of directors votes to pay a dividend on a particular date—usually a couple of weeks later. This is usually when the market first learns of the payment, although many dividends are so regular that investors practically know it in advance.
2. The **cum-dividend date** is the last date on which a share still has the right to receive the dividend. Shares traded the following day, the **ex-dividend date**, are without the payment of the dividend.

There are also two administrative bookkeeping dates: The *record date*, on which share ownership is ascertained (to determine where to send the check), and the *payment date* on which the firm actually sends the money.

DRIPs—a tax liability in the mail?!

One odd creature is the **dividend reinvestment plan** (**DRIP**). In a DRIP, participating shareholders agree to reinvest automatically any dividend payments into more shares of the company. Consequently, investors do not receive any cash. All that they receive is a tax obligation at the end of the year for the dividends that they presumably received. If the company had just kept all the money, its investors would not have received this obligation to pay personal income taxes on the dividend. To complicate matters further, if set up with the corporation itself rather than through a brokerage firm, many DRIPs reimburse investors with shares at a discount or at a rate that is not the current market value. (The average value over the most recent quarter is common.) In this case, the company effectively hands its investors a personal income tax liability, but compensates them for it. Thus, the firm pays much of the tax penalty itself (with the shareholders' money, of course).

Stock dividends and splits are not payouts, but changes in numeraire.

A rarer type of dividend is the **stock dividend**. In truth, it does not even deserve the moniker "dividend." See, a stock dividend is not an equity payout at all—no cash is involved. Instead, each share owner receives more shares. For example, if a $1 billion company whose shares are trading for $100 per share issues a 1-share stock dividend for every 10 outstanding shares, then its 10 million shares would just become 11 million shares. In a perfect market, each share would be worth $90.91. No money has changed hands, and all shareholders own the same fraction of the firm as they did before. A stock dividend is really more like a small **stock split**. An example of a 2-for-1 stock split is when the firm converts its 10 million shares, each worth $100, into 20 million shares, each worth $50. Again, there is no cash changing hands. Every shareholder owns exactly the same fraction of the company before and after. A **reverse stock split** is a similar exchange, but the number of shares declines and the price of the shares increases.

Q 20.1. What are the two important dates when it comes to dividends?

Q 20.2. What should be the stock market reaction to the announcement of a split in a perfect market?

Share Repurchase Mechanics

Share repurchases allow corporations to buy back their own stock. You can think of them as the opposite of equity issues. Like dividends, share repurchases are simply mechanisms to return cash to shareholders.

There are two main ways to repurchase stock:

The institutional basics of auction-based and open-market share repurchases.

Auction-based repurchase: In a typical auction-based repurchase program, shareholders receive an offer by the firm wanting to purchase a fixed number of shares at a fixed-price premium (typically around 15% to 20%) from its investors, or a notice that the firm wants to buy shares from those sellers willing to part with them at the lowest premium. If there is too much shareholder interest, the firm usually repurchases shares **pro rata** (i.e., in proportionally fair allocations).

Rare but big.

Auction-based repurchases are fairly rare. In a typical year in the late 1990s, all publicly traded firms together announced only about $5 to $10 billion worth of auction-based repurchases. They are used primarily when a company wants to purchase large quantities of its shares quickly. This means that they usually occur when a firm faces a proxy fight or is targeted by outside hostile acquirers (discussed more in the companion).

Open-market repurchase: The more common way for firms to repurchase their shares is through open-market repurchases. The intent of such a program is approved by the corporate board, and then must be disclosed publicly (because it is material news). However, the SEC imposes no filing requirements for actual repurchases or progress disclosures. After its announcement, the firm can then purchase shares at its own discretion. There are no fixed limits on program size or duration. Typically, firms announce that they want to repurchase around 5% of their share base and that the repurchase program will last for two to three years. Trading can be considerable—as much as 5-10% of the reported monthly trading volume is often from the firm itself.

Repurchases could face or avoid price manipulation charges.

Before 1982, repurchasing activity could violate the SEC rules against price manipulation (the well-known **Rule 10b-5**). Fortunately, in 1982, the SEC issued a clarification, (**Rule 10b-18**), which provides a **safe harbor**. (This safe harbor means that the SEC will not file price manipulation charges against companies repurchasing shares on the open market. Perhaps more important, because qualifying behavior is deemed reasonable by the SEC, it makes it harder for other investors to win a lawsuit against the firm for doing so, too.) Firms are in the clear if they use only one broker, do not execute the repurchase at market opening or during the last half hour of trading, do not pay unusual prices, and do not purchase more than 25% of average daily trading volume over the past 4 weeks. In addition, these limits do not apply to shares repurchased on behalf of an employee stock ownership plan (ESOP) and do not apply to negotiated off-market trades. And finally, the SEC has relaxed even these rules—for example, right after the 1987 stock market crash. Despite all these exceptions, it is common for firms to stay only within the spirit of Rule 10b-18, but not within the letter of the law.

Open-based repurchases are very common, but often small.

Open-based repurchase programs are very common. In a typical year in the late 1990s, publicly traded firms together announced about $150 to $200 billion worth of such repurchasing. About 70% to 80% of S&P 500 firms had a share repurchase program going at any given point in time, and roughly one in four S&P 500 companies announced a new multiyear share repurchase program in a given year. The programs themselves are very flexible—firms may never purchase *any* shares if they so desire.

With no disclosure requirements, repurchase programs are difficult to study.

Unfortunately, because firms also do not need to disclose the outcome, researchers can only guess what happens from bits and pieces of evidence that have surfaced informally. Our best estimates are that firms repurchase about three-quarters of their announced share repurchase target over a period of three years. (Of course, at the same time, corporations can issue many shares, e.g., in connection with ESOPs.) Nevertheless, in the aggregate,

open-market announced repurchase programs are clearly much more important than auction-based programs.

Q 20.3. What are the two kinds of repurchase programs?

Q 20.4. Could a firm undertaking an open-market repurchase program be accused of manipulating its stock price?

20.2 Perfect-Market Irrelevance

In a perfect world à la M&M, dividends neither destroy nor create value.

Corporate payout policy should not matter in a perfect-market setting. This is the second Modigliani-Miller proposition. From the corporate perspective, if managers pay $1 in dividends, this money has to come from somewhere. Dividends do not fall like manna from heaven, so no value is created or destroyed when firms pay them out. Money that was previously owned by investors but held inside the corporate shell is just being moved to the same investors, so that it is now outside the corporate shell. The owners do not have any more or any less wealth because of the dividend payment. You can use an M&M arbitrage argument to give this statement more perspective. If managers undertook a dividend policy that destroyed value, then any investor could step in to purchase the firm, fire the management, institute the better dividend policy, and resell the firm for the difference. Therefore, the value of the firm cannot be a function of its dividend policy.

The M&M logic helps us think about our imperfect real world.

Like the point of the M&M capital structure proposition, the point of the M&M dividend proposition is not to argue that dividends do not matter. Instead, it is to point out what perfect-market violations must be in place for dividend policy to matter, and how much these violations can matter. For example, if it costs a round-trip premium of $10 million to purchase and then resell a firm, then it cannot be that the wrong dividend policy destroys more than $10 million. If it did, you could make money even in this specific imperfect world.

The situation today: Dividend yields are generally low. Dividend increases are on average value-enhancing.

The average dividend yield of large firms has been around 2.5% over the last decade. A single percentage point too high or too low is unlikely to make it worth your while (and the real-world transaction costs) to step in and correct the dividend policy of a dumb firm. As you will learn later in this chapter, there is good evidence that the M&M proposition of dividend irrelevance fails: When firms announce dividend increases, their values usually go up; and when they announce dividend decreases, their values usually go down. Can you speculate which M&M assumption is most likely violated? Most finance professors believe that paying dividends sends a credible signal from management about the firm's future prospects and good managerial behavior (that managers will not waste the money on themselves). This violates the M&M assumption that everyone has the same information: In the real world, managers have inside information that investors do *not* have—even if it is only about how much money they may waste in the future.

➤ Dividend Yield, Sect. 2.3, Pg.13.

Some common fallacies to set straight.

Before we move on to a more realistic world, we can use perfect-market thinking to dispense with some naïve conceptions that are obviously wrong. All of the following claims are false:

Dividends eat as much substance as share sales do!

1. **Dividends do not eat "investment substance," whereas selling shares does.** It makes no sense to argue that dividends are paid because investors "need" money or that share sales (repurchases by the firm) do not eat equal substance. It is true that if you hold 100 shares worth $4,000, and the company pays you a dividend of $200, you can use the dividends to spend if you so choose. You would have $3,800 worth of shares left. Yet, if the company reinvested the money instead of paying dividends, if you had sold 5 shares for $200 on the stock exchange, you would similarly have been left with $3,800 in shares and $200 in cash. Your "substance" (i.e., your remaining investment) would have been the same either way.

2. Only tendering shareholders gain from share repurchases. Share repurchases benefit not only shareholders who tender their shares into the repurchase, but all investors. This is the same situation as with dividends. When firms repurchase shares at a fair price in a perfect world, participating and nonparticipating investors prosper equally. Participating investors get cash; nonparticipating investors get to own a higher fraction of the firm. Here is an example. A firm with 100 shareholders, each owning \$10 worth of shares, could pay \$50 worth of dividends (\$0.50 to each shareholder), and the firm would be worth \$950. Each shareholder would have a share worth \$9.50 and \$0.50 in dividends. If the firm repurchased \$50 worth of shares, the firm would be left with 95 shareholders, each owning \$10 worth of shares. Both tendering and nontendering investors have neither gained nor lost.

All investors gain from share repurchases.

In sum, the following simple table illustrates some of what the firm can do with cash it has earned:

Reinvest cash	All investors receive (unrealized) capital gains
Repurchase shares	Some investors realize capital gains. Other investors own more of the firm.
Pay dividends	All investors receive taxable dividends.

Therefore, it also makes sense to compare dividends to the alternative of capital gains.

It is an important assumption in this example that the price paid for shares is fair. If it is not, then the remaining shareholders could be better off (if the firm repurchased the shares for less than their true value) or worse off (if the firm repurchased the shares for more than their true value). Indeed, the latter sometimes happens. In a **targeted repurchase**, management makes an offer to purchase shares at an above-market price only to specific shareholders. (For example, in the 1980s, it was common for management to "buy off" potential acquirers who "greenmailed" the firm.) In this case, the stock value of the remaining shareholders goes down. Buying shares above fair value destroys value for the remaining shareholders.

3. Share repurchases increase EPS.

It is correct that a repurchase reduces the number of shares outstanding. But the cash paid out also reduces the amount of money that is reinvested, at least in the long-term. Thus, it depends on whether the cash reinvested would have produced more or less earnings (in proportion). For example, if the firm pays out cash by selling its most profitable and riskiest projects, then its expected earnings per share should go down. Conversely, if the cash had been sitting in safe Treasuries and not in riskier projects with higher expected earnings, then the firm's expected EPS should go up. (Of course, if the value received is fair (given the risk), neither repurchasing nor selling assets generates value by itself. The firm's earnings will go up, but so will its risk. After all, Treasuries are zero-NPV projects.)

Share repurchases do not necessarily increase EPS. You should think of firm value rather than EPS.

Worrying about EPS and not about firm value is like worrying about the thermometer, and not about the temperature. Who cares if EPS goes up or down. You should care about the value. Associated with the share repurchase, value increases if the firm foregoes negative-NPV projects and repurchases shares for too low a price, and decreases if the firm foregoes positive-NPV projects and repurchases shares for too high a price.

To the extent that financial markets are close to perfect, real life should not be too different, so the above statements should hold more or less. Nevertheless, they do not need to hold perfectly. In an imperfect financial market, these statements may not necessarily be plain fallacies. However, to make this argument in an imperfect market requires a much more sophisticated train of thought. For example, retail investors receiving dividends who need spending money may save on transaction costs if they do not have to sell shares. Thus, a dividend may leave them with a little more substance than a share repurchase. This may not be plausible, but it is logically

In an imperfect world, very mild forms of the above fallacies could be true, though it is not likely.

possible. For another example, a repurchase could increase a firm's EPS if it reduces agency conflicts and money wasting by managers.

Dividends and repurchase policy are irrelevant in the M&M world. Money can come from anywhere and go to anywhere.

In sum, in a perfect market, thinking about dividends and share repurchases is easy. They are irrelevant from a value perspective. *In the perfect M&M world, without taxes,* ***all*** *shareholders are equally well off with or without either a repurchase or a dividend payment.* It does not matter, either, where the funds for the payout come from. The firm could either raise new funds from new creditors or from new shareholders in order to pay out cash to existing shareholders (which many corporations do), or it could use its retained earnings, or it could sell some of its operations. What really matters instead is that the company takes all its projects with positive NPVs. The sum-total value of its projects is the value of the firm. If this were not the case, someone would take over the company and make it so.

Focus on the relevant aspects.

The remainder of this chapter therefore focuses on the more interesting question of how dividends and share repurchases work in the real world—in an imperfect financial market.

Q 20.5. In a perfect market, if a normal investor cannot participate in a share repurchase program, would she be better off with a dividend payout than with a share repurchase?

Q 20.6. Consider a firm with 81 shareholders. Eighty of them, including yourself, each own one share worth \$10/share. In addition, I own 20 shares (for a firm total of 100 shares)—and I am trying to fire the management. To appease me, the management has offered to repurchase my (and only my) shares at \$15 per share. How would such a "greenmail" repurchase change the value of your shares?

Q 20.7. Under what circumstances do share repurchases increase the firm's EPS?

20.3 Dividends and Share Repurchases

The "payout versus no payout" is the opposite of the "issue versus no issue" argument discussed in the previous chapters.

You already know the answer to the question of whether paying out cash creates or destroys value in imperfect capital markets. There is nothing new here: The answer is based on exact analogs of the arguments in the capital structure section. Ultimately, it comes back to the question of whether, as CFO, you should put your investors' cash to use in your company or return it to them. If you pass up positive-NPV projects because you pay out cash, then you destroy value. If you pass up negative-NPV projects because you pay out cash, then you create value. The same market imperfections that determined capital structure are at play in determining payout policy, too. For example:

➤ How to invest if you know more than the market, Sect. 12.7, Pg.311.

Corporate taxes: If you pay dividends or repurchase shares by issuing more debt, future payouts will be tax-advantaged. In this case, equity payouts can create value.

Personal taxes: If you pay dividends or repurchase shares, your investors will have a bigger tax liability on these receipts than if you reinvest the money. This can destroy value.

Financial distress: If you pay dividends or repurchase shares when the company is cash-constrained, it can increase the probability that the firm will go bankrupt. This can impose direct and indirect bankruptcy costs, which can destroy value.

Agency and signaling: If you pay dividends or repurchase shares when the temptation is to use the cash on pet projects, empire building, or managerial perks—all of which are negative-NPV projects—you can create value.

And so on.

Dividends or share repurchases as payout?

The more novel question concerns the decision of whether you should pay out cash in the form of dividends or share repurchases. The most obvious differences between dividend payments and share repurchases are those related to personal income tax treatment, so let's cover personal income taxes first.

Q 20.8. Can you think of dividend payouts and equity share repurchases as the opposite of issuing equity shares? If so, do the forces from Exhibit 19.5 Page 552 apply here, too?

Personal Income Tax Differences and Investor Clienteles

➤ Tax clienteles, Sect. 18.6, Pg.506.

Today, dividends are almost as good as capital gains from a tax perspective.

The clientele diagrams in Section 18.6 illustrated a basic fact: From a personal income tax perspective, dividends are worse than share repurchases. Share repurchases remain the smarter way to pay out cash, even though the Bush dividend tax reform of 2003 has greatly reduced the differences in statutory personal income tax rates between long-term capital gains and dividends. In a share repurchase, nonparticipating investors face no tax consequences, and participating investors face only potential capital gains taxes. The remaining advantages of repurchases, then, relate to the fact that dividends are taxed every year, whereas capital gains are only taxed when an investor realizes them.

Accumulating taxation: For example, if a firm were to offer capital gains of 20% per year, then a \$100 investment would earn you $\$100 \cdot 1.2 \cdot 1.2 = \$144$ over 2 years. (The same would apply if your benefit [from the repurchase] came not from a value increase but from each of your shares representing a larger fraction of the firm.) Assuming a 50% tax rate, you would keep \$22. In contrast, if the \$20 were dividend payments, then you would receive a 10% after-tax interest rate every year and thus keep only $\$100 \cdot 1.1 \cdot 1.1 - \$100 = \$21$. The \$1 difference between dividend and repurchase payments is due to the fact that Uncle Sam can earn interest on a part of your dividend receipts that were paid out after one year. The example is overstated, because the statutory tax rate is much lower than 50%—but over many years, the foregone return on intermediate taxes can accumulate and make a difference.

➤ Tax timing, Sect. 11.4, Pg.269.

Capital loss offsets: Capital losses can be used to offset the benefits of any capital gains resulting from reinvestment or share repurchases. It is at the discretion of each investor to determine when she has enough capital losses elsewhere not to suffer capital gains taxes. In contrast, capital losses (mostly) cannot be used to offset dividend payments. Moreover, dividends are forced upon each and every investor, possibly in relatively inopportune years from a particular investor's perspective.

Clienteles: Repurchases allow retail clienteles to develop—a fact that helps to take some bite out of capital gains tax. Among retail investors, there will be some who purchased the stock at a high price and others who purchased it at a low price. When the firm repurchases shares, those investors with low accumulated capital gains (having purchased the stock at a relatively high price) can participate in the share repurchase without much of a capital gains consequence. This allows other investors with higher accumulated capital gains to delay/avoid realization and suffer no tax consequences.

Estate Step Up and Donations: The capital-gains basis is stepped up in the estate. Thus, for estates less than \$5-\$10 million, capital gains tax need never be paid. (Moreover, one can always donate shares to charities, which are untaxed.) Moving to a low-tax state (like Florida) also allows avoiding taxes on capital gains accumulated while living in a high-tax state (like California or New York).

Share repurchases are just a little better than dividends from a tax perspective nowadays.

Tax clienteles among retail investors with different unrealized capital gains are good at taking a bite out of the tax penalty on repurchases but not out of the tax penalty on dividends. However, other clienteles potentially can: Zero-tax retail investors or tax-exempt investors, such as pension funds or low-income investors, could take a bite even out of dividend taxes. They can not only hold bonds to shelter interest taxes, but also hold stocks to shelter dividend taxes. This is especially effective if it needs to occur only around the cum-/ex-dividend date (which determines whether an investor receives the dividend). However, the evidence suggests

that low-tax investors are in short supply, and some IRS rules are making this special form of 1-day tax arbitrage illegal. Thus, dividend tax arbitrage is not perfect. The tax-exempt investor clienteles have only reduced the penalty of dividends relative to share repurchases—they have not eliminated it. Thus, the presence of pension funds cannot explain why firms pay dividends from a tax perspective: Share repurchases remain better, because they can often avoid most personal income taxes. From a tax perspective, share repurchases rule.

Pre-Bush Tax Cuts: Ralph Nader and Microsoft

On January 4, 2002, Ralph Nader wrote an open letter to William H. Gates III, Chairman of Microsoft, that began as follows:

> We are writing to ask Microsoft to change its practice of not paying dividends to shareholders. Our reasons are as follows.
>
> 1. The quantitative failure to pay dividends year after year is an inappropriate and we believe unlawful device to shelter Microsoft earnings from federal income taxes.
>
> By not paying dividends, wealthy Microsoft shareholders such as yourself avoid paying the top marginal tax rate of 39.6 percent that would apply to income distributed as dividends. By taking earnings entirely through stock sales, wealthy shareholders lower their tax rate to the maximum 20 percent that applies to capital gains. According to the most recent SEC reports on insider trades, you personally sold more than $2.9 billion in Microsoft stock last year, benefiting enormously from the lower tax rate that applies to stock sales.

This letter does not even point out that 20% is an overstatement: Gates is taxed only on *realized* capital gains! If he does not sell his shares, he suffers zero taxes on increases in his wealth over the years. In fairness to Bill, he has since donated most of his wealth into a foundation that has saved the lives of thousands if not millions. Incidentally, after the Bush tax reforms of 2003 significantly reduced the taxes on dividend payments, Microsoft promptly started paying dividend—many billions' worth.

Here is an interesting question: Is it the fault of Bill Gates (who is also a prolific political campaign donor) or is it the fault of the U.S. government that Gates has suffered only minimal tax obligations on his wealth gains over the last 20 years?

For a while, even the inheritance tax disappeared. Noone knows, but there is a good chance that Steve Jobs died at the right time, leaving his heirs with no tax obligation. (Their capital gains tax base would have been stepped up, too.) It has since returned at such high rates that the trust and estate industry is flourishing again. There may come a time when most wealth in the United States will be primarily in the hands of trust lawyers.

Ralph Nader

An IRS rule against using share repurchases over dividends has been largely irrelevant.

There may be one final minor wrinkle. The IRS could in principle declare a share repurchase as the equivalent of a dividend. However, enforcement of this provision has been weak or nonexistent in *publicly traded* corporations—in fact, I don't know of *any* recent instances. With some proper care to follow specific IRS rules, this is not a biting constraint for public firms.

Empirical historical evidence about typical dividend yields and dividend changes. Repurchases and dividends are now approximately equally important.

If you want to understand historical equity payout patterns, you need to know that dividends used to be treated much worse than repurchases from a tax perspective. Exhibit 20.1 plots the historical tax rates on dividends and capital gains. From about World War II until the mid 1960s, the government taxed dividends at ordinary income tax rates. Thus, it practically confiscated dividend receipts of the highest income earners who were not smart enough to evade them somehow—and there were many loopholes. The Reagan *Tax Reform Act of 1986* lowered the highest ordinary tax rate dramatically but closed most loopholes. Bush I raised dividend taxes together with ordinary income taxes, and Clinton I left it. Bush II fundamentally changed dividend taxation by tying dividend tax rates to the long-term capital gains rate. (The higher ordinary income tax rate still applies to foreign corporations' dividends and to some non-qualifying dividends if a domestic company has not paid appropriate income taxes.) Under

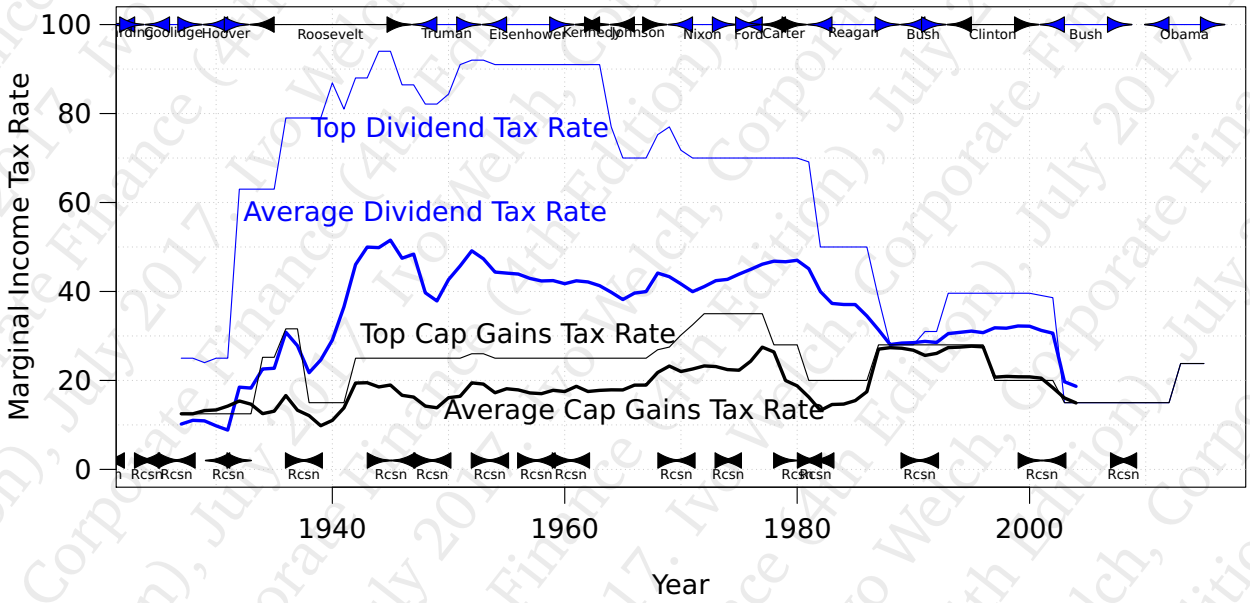


Exhibit 20.1: *Capital Gains and Dividend Tax Rates, 1927-2015.* The top lines show the marginal personal income tax rate on dividends for an investor in the top income bracket (thin line) and for the average investor (thick line). The lines below them are the equivalent capital gains tax rates. (The capital gains taxes are an overstatement, because they can be washed against capital losses and realized at the investor's discretion.) The arrows at the bottom indicate recessions. The arrows at the top indicate administrations. After 2004, the graph has information only on the maximum dividend and long-term capital gains tax rate. Original data source: Daniel Feenberg and Clemens Sialm, 2006.

Obama, the highest rates rose to 23.8% pay for Obamacare. (As of this writing, I don't know yet what Trump plans to do.) From a tax perspective, paying dividends during and after World War 2 was stupid. Nowadays, share repurchases still have advantages over dividend payments, but these advantages are more modest. For non-sellers, share repurchases increase the fraction owned without incurring even a delayed capital gain. Sellers are presumably investors who have relatively low capital gains.

Q 20.9. Since the 2003 dividend tax cuts, what is the most important remaining *tax* advantage that share repurchases enjoy over dividends?

Non-Tax-Related Differences

There are still some nontax differences between dividends and share repurchases.

With the reduction of the personal income tax differences between share repurchases and dividends, other differences have become relatively more important. Here they are, ranked by my assessment of their importance.

The Microsoft Response to Bush's Dividend Tax Cut

The most prominent response to the Bush dividend tax cut came from Microsoft (MSFT). After the market closed on July 20, 2004, it announced a $32 billion special dividend, plus a $30 billion share repurchase, plus an increase in ordinary dividends from 16 cents to 32 cents per share (a yield increase from 0.56% to 1.12%). With a market capitalization of about $300 billion (a P/E ratio of about 20 [based on forward-looking earnings] or 37 [based on recent earnings], and a cash hoard of $56 billion), the total payout represented about 20% of Microsoft's market value. A few minutes after market opening on July 21, Microsoft's outstanding shares had jumped in value by a little over 3%. This means that for every dollar announced to change hands soon from investors' company pockets into their personal pockets, shareholders also felt $\$1 \cdot 3\%/20\% = 15$ cents happier! Interestingly, 2 days later, Microsoft announced quarterly earnings that fell short of expectations—and shares promptly fell back to where they had been before the payout announcement. It appears as if the payout announcement was a positive signal, and the failure to meet earnings expectations was a negative one. These two event effects just about canceled one another out.

Dividends are stickier.

1. **Dividend smoothing:** Many share repurchases used to be done fairly irregularly. In contrast, ordinary dividends informally obligate management to continue them. This was first noted in 1956 by John Lintner. He found that firms were reluctant to cut dividends, instead preferring to slowly increase them over time. This behavior is called **dividend smoothing**. It still holds today, though it is no longer as strong as it once was.

   Over the last two decades (and roughly also since 2010), annual dividend changes were approximately as follows:

Unchanged Zero Dividend	65%
Initiated Dividends	3%
Discontinued Dividends	2%
Continued Dividends	30%

   Of the 30% who continued: 20% reduced their dividends; 20% kept them about the same; 20% increased them modestly (by 3-10%); and 40% increased them by more than 10%.

   (Lintner also documented a second fact: Companies had a target dividend-earnings payout ratio, to which they smoothly tried to adjust. Leary and Michaely show that there is less smoothing in general, and it occurs more among firms that can afford it.)

   This stickiness of dividends leads to a whole range of interesting behavior patterns. For example, there is an interesting signaling game that could ensue: Shareholders expect dividends to continue. This expectation, in turn, may itself be the reason why managers tend to oblige. If they believe that an earnings shock is transitory, they would probably pay out cash via a share repurchase. They would use a dividend payment only if they believe it is permanent. The reason is that if they increased dividends because of a one-time positive shock to earnings, then they might have to cut their dividends in the future. Such a move risks disappointing the financial markets—and possibly could cost them their jobs. A dividend increase therefore implies that managers signal more optimism about the future than they would signal with an equal share repurchase.

   (The regularity difference is not perfect, though. Many companies have semiregular share repurchase programs, which make repurchases almost as regular as dividend payments. And many other companies pay "special dividends" [or bond dividends] that signal their one-time nature to investors. Such special dividends are as much "one-time" as share repurchases.)

Executives holding options prefer capital gains.

2. **Executive stock options:** Executives often receive **executive stock options** in the company, whose value depends on the share price. (You can find an estimate of their value in the financial statement footnotes. The companion chapter on options explains how this value is computed.) A dividend is bad for any call option owner, because the share price

drops when it is paid. For example, if a manager of a $60 company has an option that allows her to purchase shares at $50, then the manager would be reluctant to pay $20 in dividends—after all, the share price would drop to about $40, making the right to purchase at $50 much less valuable. Therefore, managers with many options prefer repurchases to dividend payments.

3. **Executive ownership:** Executives and insiders are often not permitted to tender their shares in share repurchase offers. Thus, they will own relatively more of the company after a repurchase than after an equivalent dividend payment.

Repurchases increase inside ownership.

4. **Investor preferences:** There is some "behavioral finance" evidence that small retail investors simply "like" dividends better than share repurchases—although it is a great mystery why this is so. You already know that the argument that investors like dividends "because they need cash" does not hold water. Selling a fraction of the shares in stocks that pay zero dividends provides physical cash, too—except that the investor would not have had to pay as much in personal income taxes. Indeed, personal tax considerations suggest that investors would likely end up with more if they sold shares. Still, it seems that many investors—especially less sophisticated ones—wrongly think only of share sales but not of dividend receipts as reductions in their "investment substance." Given the existence of such shareholders, companies may respond appropriately by paying dividends.

   Fortunately, the tax penalty of dividends is lower today than it was in the past, so the mystery is smaller and less significant. The behavior of small investors is under active academic investigation. My guess is that the answer will likely be that these individual investor preference effects are real and irrational but that they are not universal, and ultimately not overly important.

Some investors just like dividends.

5. **Fund charter exclusion clauses:** Some institutional shareholders are obliged by their charters to hold *only* dividend-paying stocks. This provision excludes them from holding stocks such as Microsoft prior to 2003—that is, before Microsoft initiated dividend payments.

Some funds cannot hold firms that pay no dividends.

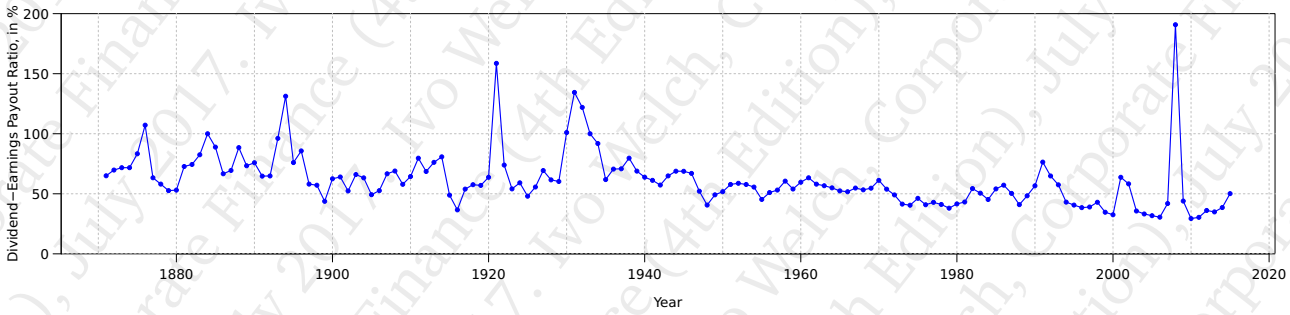
Q 20.10. What are the differences, other than personal income tax differences, between a share repurchase and a dividend payment?

20.4 Empirical Evidence

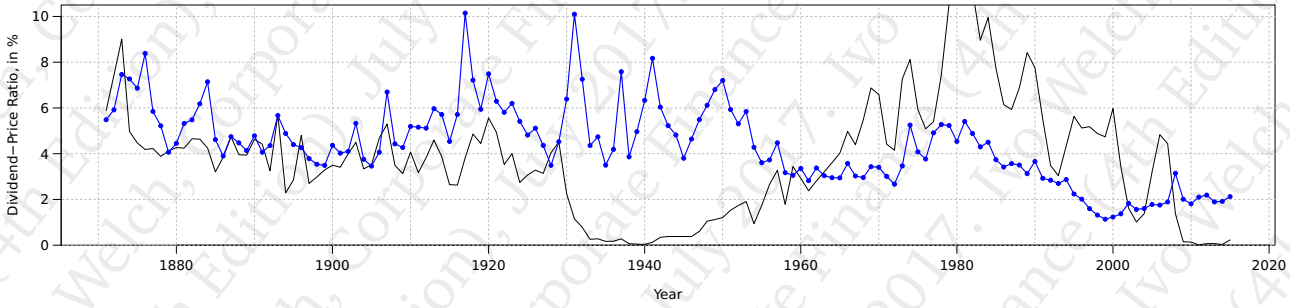
Tough to summarize

You now know the factors at play when it comes to dividends and repurchases. But in what form, and how much, did firms actually pay cash to their shareholders historically? Unfortunately, it is difficult to characterize patterns over the last half century. There was stagflation in the late 1970s, a stock market crash in 1987, a technology boom in 1999, and the Great Recession of 2008 followed by near-zero interest rates. The equity markets modernized and the number of publicly traded firms increased from about 3,500 in 1970 to 9,500 in 2000 before settling back to around 8,000 nowadays. In a typical year, about 5,000 firms per year had positive operating cash flows, 4,000 had positive net income, and 2,500 firms per year paid dividends and repurchased equity shares. But don't think only firms with positive net income paid out to equity. Many firms financed their dividend payments and repurchases not with operating income, but with the issue of new equity or debt. Thus, capital structure and dividend choices seem linked. Nevertheless, you need to get a broad sense of the economy. Thus, we shall look at aggregated dollar sums for the S&P 500 stocks. You shall also see that later market-cap-weighted statistics over all publicly traded firms suggest similar patterns. This makes sense: Small growth firms do not pay out a lot, nor should they. Equal-weighted statistics make little sense in this context.

(a) Percent of Earnings Paid Out As Dividends for the S&P 500



(b) Dividends as Percent of Stock Price for NYSE Stocks



(c) Dividends Plus Share Repurchases Minus Share Issues, As Percent of Stock Price, for the S&P 500

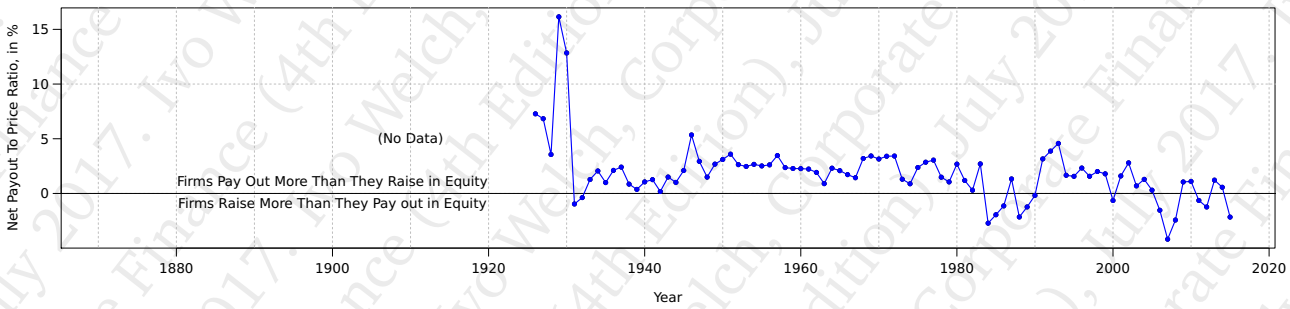
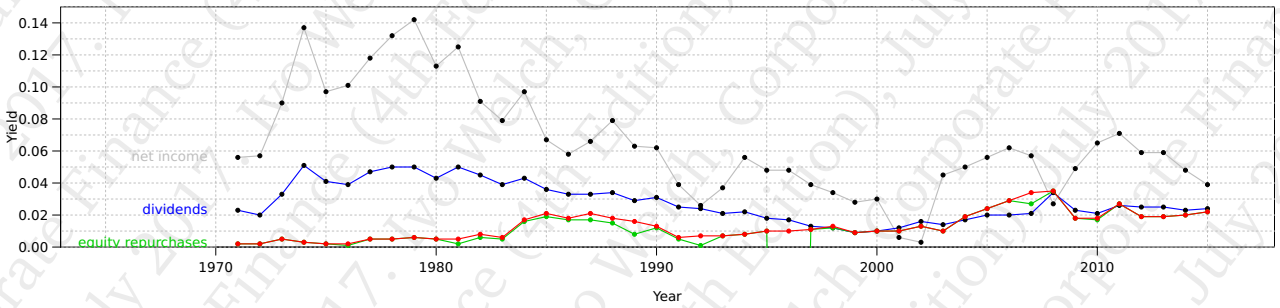


Exhibit 20.2: *Historical Dividend Payout Patterns, 1870-2015.* In (b), the interest rate is in faint black. Data Source: Goyal-Welch Website.

Historical S&P 500 Dividend and Repurchase Payout Patterns



	1970s	1980s	1990s	2000s	2010s
Earnings Yield	10.3%	7.8%	3.8%	4.1%	5.6%
Dividend Yield	3.9-4.3%	3.6-4.0%	1.6-1.8%	1.9-2.1%	2.4-2.6%
Raw Repurchase Yield	0.4-1.3%	1.5-3.3%	1.0-2.1%	2.1-3.4%	2.1-3.2%
Net Repurchase Yield	0.3-1.2%	1.2-3.0%	–7-2.0%	2.0-3.2%	2.1-3.3%
Dividends / Earnings	37-42%	38-41%	32-36%	30-32%	38-38%
Net Repurchase / Earnings	3-11%	13-28%	18-37%	28-43%	30-45%
Div/(Div+Raw Repurchase)	94-83%	81-65%	70-52%	59-45%	61-49%

Exhibit 20.3: *Dividend Payout Relative to Market Cap, 1970-2015.* The data sources in this plot are firms' cash flow statements. The first number assumes a missing value is 0 and is the basis of the plot. The second number omits missing values. Data Source: Compustat

Exhibit 20.2 and 20.3 use different data sources. The former allows longer views, the latter allows deeper views. However, the latter can depend on how one interprets firms that report no repurchases—is this missing data or insignificant data? Cash Flow Statements were common but not mandatory before 1989.

Dividend-Earnings: Exhibits 20.2-a and 20.3-a show that S&P 500 firms paid out about half of their earnings in dividends. (This **dividend-earnings ratio** is sometimes just called the **dividend-payout ratio**.) This payout ratio has been fairly stable at around 50%—though slowly declining just a little—for large firms since World War II (well, except for an unusual spike in the Great Recession of 2008-2009, when the S&P 500 dropped dramatically).

Dividend-earnings ratios have been at a constant 50% for large firms.

Dividend-Price Yields: Exhibits 20.2-b and 20.3-a show that dividend-price ratios used to be about 3-4% in the 1970s and 1980s but have since declined to about 2-3%. Before 1960, they also used to be more volatile than they are now. Incidentally, the **dividend yield** is usually measured relative to last year's market cap, while the **dividend-price ratio** is usually measured relative to the current market cap.

Dividend-price ratios have fallen.

➤ Dividend yield, Sect. 2.3, Pg.13.

Total net payout (dividends, repurchases, and equity issues): Dividends are not the whole equity payout picture. Corporations can also repurchase equity. You can think in terms of raw and net repurchases, where net subtracts out simultaneous equity issues.

Exhibit 20.2-c shows that there are long stretches when firms either net-raised equity (1980s) or net-issued equity (1940s-1980s, 1990s). Exhibit 20.3-a also shows that there were periods in which firms paid out more in dividends and net repurchases than they

For NYSE firms, net payout ratios have not changed much.

raised in earnings. The two big outliers were 1929 and 1930 (right after **Black Tuesday**—the stock market crash that began the *Great Depression*). In these two years, corporations paid out *much more* than they raised. (Although you cannot see this in the annual data, in the weeks after the October 1987 stock market crash, companies similarly repurchased their own shares aggressively.)

Other evidence: Share repurchases have increased in importance.

Dividends versus repurchases: Grullon and Michaely (2000) showed that companies' expenditures on share-repurchase programs increased dramatically from 1980 to 1998. Exhibit 20.3-a shows that dividends used to be larger than net repurchases, but the two have pulled about even somewhere between the 1980s and 2000s. About half of all payouts to equity nowadays occurs in dividends, half in share repurchases, and summed up, the two together reach a similar magnitude as earnings. However, be warned that many of these equity shares were just repurchased, not retired, so they may not have been true payouts that reduced firm size. Instead, they were immediately given out again in employee and/or executive compensation.

Was the 1982 10b-18 SEC ruling a structural shock?

The Grullon and Michaely paper also explains that the main reason why firms increased their repurchases in the 1980s was not primarily the personal income tax penalty (although it contributed, too), but the 10b-18 SEC ruling. Before 1982, the risk of violating the antimanipulation provisions of the *Securities Exchange Act of 1934* simply deterred most corporations from repurchasing shares. Over the two following years, the aggregate amount of cash spent on share repurchase programs tripled. This pattern is also visible in Exhibit 20.3-a.

Fewer and fewer firms were paying dividends until 2000...

Maybe Disappearing Dividends (and Repurchases): An influential 2000 paper by Fama and French documented that the fraction of firms paying dividends had declined from 67% in 1978 to 21% in 1999. That is, the decline in dividends was not just the phenomenon that firms paid lower dividends, but that fewer and fewer firms paid them at all. They attributed this development to two factors: There were more growth and technology firms, which traditionally do not pay dividends but instead reinvest their money; and firms of any characteristics, technology and others alike, had become less inclined to pay dividends. Their paper implied that the first component of this pattern would change as firms aged.

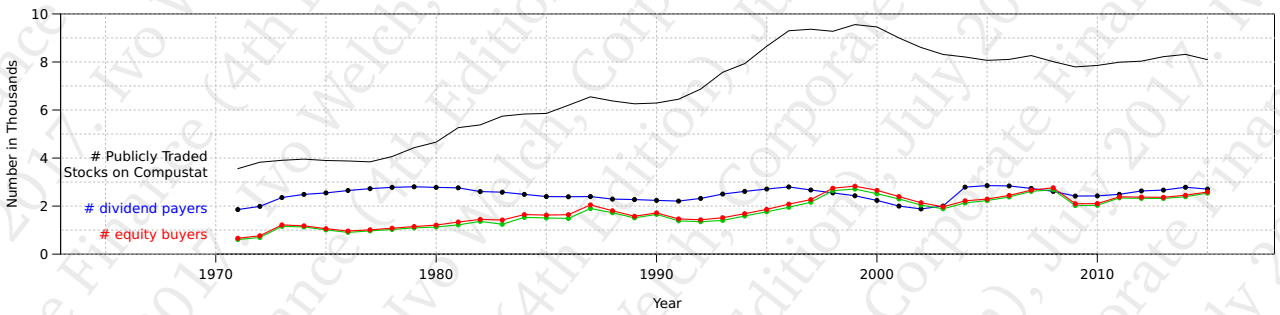
More firms initiate dividends when dividend-paying stocks trade at higher multiples.

A 2004 paper by Baker and Wurgler tries to explain the year-by-year change in the fraction of firms paying dividends. They looked at how the stock market priced firms paying dividends relative to firms not paying dividends. They found that in years in which the former were trading at higher price multiples (recall Chapter 15), more firms began to join the party and pay dividends. But throughout the 1990s, firms that paid lower dividends seem to have been trading at higher multiples, so fewer firms were excited to start paying them. Indeed, these findings can even explain some of the reversal in 2000. Until then, technology and growth stocks paying no dividends were highly valued by the stock market. After the technology collapse of March 2000, investors much preferred value stocks with solid dividends, and companies started to oblige.

...but dividends have been making a comeback after 2000.

However, Exhibit 20.4 shows that a naıve interpretation of the Fama-French and Baker-Wurgler article titles without reading the fine print can mislead. The number of dividend-paying firms has roughly remained at 2,500 since the mid 1970s. The Bush dividends tax cuts of 2003 induced about 300 firms to start paying dividends, but this was a modest one-time effect that subsided soon after, and the dividends payments were generally not large in terms of aggregate earnings and stock prices. The variation in the fraction of firms paying dividends was not from the number of firms paying dividends, but from the number of firms that were publicly traded. (Although the exact fraction inferred depends on how missing values are treated, the time trends do not.)

In contrast, the number of firms repurchasing shares increased steadily from about 1,000 firms in 1970 to about 2,500 firms in 1999. Thereafter, it has since remained about the same.



	1970s	1980s	1990s	2000s	2010s
Publicly Traded Firm-Years	35,357	58,126	81,264	83,835	48,513
Positive Earnings	89%	70%	66%	58%	62%
Positive Dividends	62-70%	43-48%	31-37%	29-35%	32-43%
Positive Raw Repurchase	26-90%	28-95%	24-96%	28-97%	29-97%
Positive Net Repurchase	24-85%	25-88%	23-91%	27-93%	29-94%

Exhibit 20.4: *Number of Publicly-Traded Dividend-Paying and Repurchasing Firms, 1970-2015.* The data source in this plot are firms' cash flow statements. The first number assumes that a missing value is 0 and is the basis of the plot. The second number omits missing values. Data Source: Compustat

In sum, I would characterize the empirical evidence as follows. Dividends used to be more important than equity repurchases, but they are about equally important now. Dividends have not been cut, but have also not been raised. As firms' stock values have grown, the dividend-yield has declined.

The empirical evidence of payout patterns summarized.

Q 20.11. How do 21st century dividend-earnings payout ratios compare to those from the 20th century?

Q 20.12. How do 21st century dividend-price ratios compare to those from the 20th century?

Q 20.13. How does 21st century dividend importance compare to that from the 20th century?

Market Reactions

Event studies.

In addition to looking at how corporations pay cash to shareholders, we can also look at how the stock market responds to these payouts.

Announcement Response

Any reaction must appear as soon as investors learn of the news. Usually, this is on the declaration date, not thereafter.

If an efficient stock market considers a dividend payment to be value-relevant news, any consequent reaction must occur when the market first learns about the dividend, that is, on or before the declaration date. *The reaction must not occur on the later cum- or ex-dividend date.* After all, every investor learns on the declaration date when the stock will go ex-dividend. Consequently, it should not be possible to use such dated information to earn excess profits. Similarly, you should not expect dividend continuation dates to be great news—most firms are expected to continue, so the news is only mild (that dividends are not lowered or raised). In contrast, because dividend initiations are far more difficult to forecast, we should expect them to be associated with considerably higher returns.

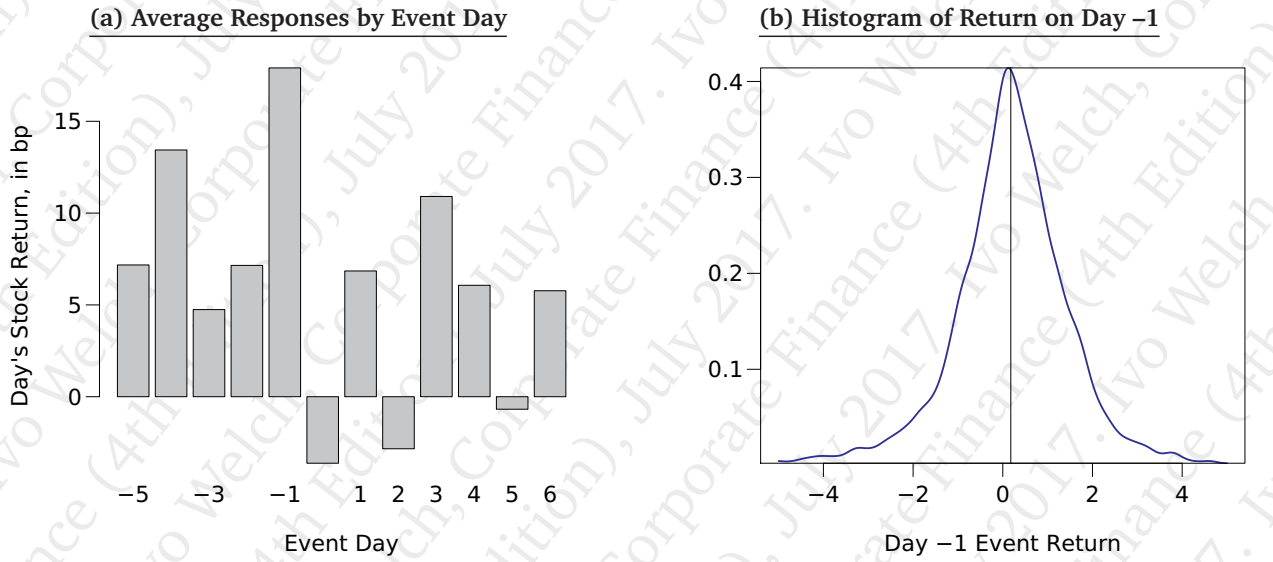


Exhibit 20.5: *Stock Price Responses to Non-Decreasing Dividend Declarations in 2010.* Stock returns are net of the S&P 500 return. Stocks must have at least $10 million in market cap to be included. The left graph shows average rates of return across all stocks on different trading days relative to each firm's aligned declaration date. Announcements typically occur the day before, so –1 is the event date. On a typical day in 2010, stocks earned an average 10 bp. On the dividend declaration date, they earned twice as much. This performance is highly statistically significant. Yet the right graph shows that individual firms may well have decreased rather than increased in value on the announcement day. The vertical line is the 20 basis point mean. It sits very close to zero, does it not?

Empirically, dividend payment announcements have been good news.

Exhibit 20.5 shows what happens when a firm declares a quarterly dividend. The graph represents over 13,000 ordinary dividend declarations, in which dividends did not decline. Importantly, the figure does not distinguish between continuations and initiations. (Initiations would have much higher responses.) The left graph shows that the share price increased by about 20 basis points around the declaration days. This is a large number. A typical firm with a dividend yield of 2% would only declare a quarterly dividend of about 50 basis points (0.5%). Thus, for

every dollar that a firm declares in dividends, the value of shares increases by $20/0.5 = 40$ cents! (In addition, shareholders get the dollar of dividends later, too.) However, the right graph is a density plot (like a histogram) that shows that these 20 basis points are not the experience of any one given firm, just an average of many firms' announcement returns. Even though 20 basis points represents a large increase, there are many firms that experience much higher or much lower returns. There are even many firms that declare a dividend and promptly drop by 200 basis points on the same day—often for entirely different reasons, though.

Dividend initiations have huge value effects.

Though not in these graphs, we can also look at how the market responds to different types of dividend announcements. When firms continue their dividends, their share price increases by only about 10 to 15 basis points. When firms meaningfully increase their dividends (10 or more basis points in the dividend yield increase), their stock price declaration response is a much larger 40 basis points. For new dividend initiations, the average increase is a much larger 200 to 400 basis points. We also know that large firms' share prices respond less than small firms. A dividend payment is even better news if the firm is small. However, be warned that you cannot interpret this to mean that you should pay dividends if you are the CFO for a small firm. The 37 basis points were for a particular set of small firms that considered paying dividends to be a good thing to do, perhaps because they did not have any good projects.

Don't draw causality inferences!

This is so important that I need to repeat it. It is important that you do not draw causality inferences. It may well not have been dividend increases that lifted the stock price, but the news accompanying it. A firm that just looks at the all-firm empirical evidence and decides to raise its dividend without a good reason may not experience an increased stock price. Here is an analogy: You observe that students who pulled all-nighters outperformed those who did not. Does this mean that you should pull one, too, if you wanted to increase your grade? Not necessarily! Students who pulled all-nighters may well have been those who study a lot more in general. They might have done better with a good night's sleep. Then again, all-nighters may have helped them, after all. Without a better controlled experiment, you cannot conclude whether all-nighters (dividends) help grades (stock prices) or not.

➤ Causality and Correlation, Sect. 7.1, Pg.153.

Do dividends predict the future, or are they predictable history (which investors should already know)?

There is another intriguing and related puzzle brought up in a paper by Benartzi, Michaely, and Thaler about how we should interpret the announcement reaction. Do managers change their dividends when they suddenly anticipate a better future, or do they change them after they have experienced good times in the past? In other words, do dividends send a new signal of the future, or do they merely reflect the past? The answer is likely "both." We know that managers do not increase dividends unless they believe that the future will continue to be good. This means that they pay out earnings both when they have them and when they are confident that they will continue. (Another recent paper suggests that dividends signal not so much higher future earnings, but rather a lower market beta.) Finally, the market also learns from the declarations that managers are inclined to pay them, and continue to pay them—good news in itself.

Why would there be an announcement response if dividend changes contain no news?

The puzzle is not why firms pay dividends, but why they are such good news to the financial markets. They should only be good news if they tell investors something about the future (such as the permanence of good times). The fact that the market can infer from past good times that managers are likely to increase dividends should not matter. The financial markets should already have taken the latter into account; it should not have been news, and you should not have been able to trade profitably on it. Yet some evidence seems to suggest that the past is as important than the future in explaining why the stock market reacts so positively—weird, because past information should already have been incorporated in the stock price. However, because managerial dividend choices are so intertwined with both the past and the future, the past vs. present effects are difficult to disentangle. The academics are still investigating—the jury is still out.

Tax Trading and the Cum-to-Ex Dividend Stock Response

In a perfect market, the cum-to-ex stock price drop should equal the dividend.

Although it is not news after the declaration date that a stock will soon trade without the dividend (i.e., the day on which the stock will go from *cum* into *ex* status is known in advance), there should still be a stock *price* reaction. Here is why. Consider a perfect market. The expected stock return should be just about zero (or only a few basis points). This means that the expected stock price change is not zero, because shares are worth more with the dividend. For example, if a $50 stock pays $1 in dividends, it should be trading for $49 on the following day. If shares fell only to $49.10, then you could earn a $0.10 profit: Buy at $50, earn the dividend of $1, and sell at $49.10. In sum, although the expected rate of return should be just about zero, the capital gain should be negative by just about the amount of the dividend payment.

➤ Capital gains versus net returns, Sect. 2.3, Pg.13.

Tax arbitrage if you have a low tax rate: Buy on the cum-date, sell on the ex-date.

In an imperfect world, the capital loss on the ex-date becomes more interesting: It should depend on investors' personal income tax rates. Consider again the $50 stock that pays a $1 dividend. If the drop is from $50 to $49, then the stock is priced as if investors suffer no personal income tax penalties. If the drop is from $50 to $49.50 instead, then the stock is priced as if investors faced a 50% personal income tax rate. Here is why. Ignore transaction costs, capital gains tax consequences, and IRS regulations for a moment. Concentrate only on the personal income tax rate consequences and the fact that an investor should not earn unusual rates of return overnight. Every investor with a tax rate below 50% should buy the stock on the afternoon of the last cum-day from investors with higher tax rates and then sell it on the morning of the following ex-day. For example, a tax-exempt institution could pay $50, receive $1 in dividends, and then resell at $49.50 for an instant profit of $0.50 per share. This would be an overnight rate of return of just about 1%. Do this every trading day of the year (there are 252 trading days in a typical year), and you end up with a rate of return of more than 1,000% per annum! An investor with a higher tax rate, say, 60%, should not hold onto the stock. Starting with $50, the investor gets to keep only $0.40 in dividends and $49.50 in stock—a perfectly predictable wealth loss of 10 cents. Such an investor should not want to hold the stock. Note that normal retail investors could even hold dividend-paying stocks for 248 out of 252 trading days of the year without paying any dividend taxes. They would just sell them to institutions on the cum-day, and repurchase them on the ex-day.

Competition among (tax-exempt) investors for the best investment opportunities should bring down the effective tax rate.

There is more than just one tax-exempt institution in the market. Consequently, these institutions should compete to bid up the cum-price from $50 to something more. This would mean that the effective income tax rate should come down to something more modest than 50%. In the real world, however, the tax arbitrage competition is limited by transaction costs, IRS rules, capital gains consequences, and overnight holding risk. If this were not the case, even the presence of a few smart tax-exempt investors would drive the cum-price to $50.50 and the effective tax rate to zero. In real life, some such tax arbitrage indeed happens. Tax-exempt funds compete to purchase these shares, driving up the share prices before the ex-dividend date. Such transactions are known as *bed-and-breakfast deals* for equity, and *bond-washing* for bonds—even though both the IRS and the Bank of England have specifically prohibited such tax arbitrage. The latter has imposed a 1-week holding period for tax-free institutions purchasing around dividend dates. Naturally, there is more tax arbitrage if the dividends are bigger (e.g., when it comes to large, special one-time dividends).

➤ Arbitrage, Sect. 12.4, Pg.297.

The price drop from the cum- to the ex-date allows us to infer the effective marginal income tax rate.

Now return to our hypothetical drop from $50 to $49.50. As noted, it is only an investor with a tax rate of 50% who would be indifferent between buying and selling. Anyone with a higher tax rate should sell; anyone with a lower tax rate should buy. The formula to compute this marginal investor's **effective tax rate** is set by the fact that the overnight rate of return should be close to zero.

$$0 = \frac{\$49.50 - \$50 + (1-\tau)\cdot\$1}{\$50} \Leftrightarrow \tau = \frac{\$1 + \$49.50 - \$50}{\$1} = 50\%$$

$$r = \frac{P_{ex} - P_{cum} + (1-\tau)\cdot D}{P_{cum}} \Leftrightarrow \tau = \frac{D + P_{ex} - P_{cum}}{D}$$

With this formula, you can now use the capital loss to determine the marginal investor's tax rate for dividend-paying stocks on the dividend cum-/ex-days. For example, if the share price drop is from \$50 to \$49.25, the stock is priced as if the marginal investor suffered a $[\$1+(\$49.25-\$50)]/\$1 = 25\%$ tax rate.

Although we know that some tax arbitrage does happen, the question is still how much. On a typical *quarterly* dividend day, a \$50 stock with a 2% dividend yield would pay only $\$1/4 = \$0.25$. Subtract round-trip transaction costs, and take into account that the IRS won't look kindly on immediate purchases and sales by tax-exempt investors, that tax-exempts want to remain diversified, and that there are only a limited number of tax-exempt investors. Given all these complications, is the competition among tax-exempt investors—subject to transaction costs—enough to compete away the dividend tax penalty?

The marginal tax rate measures a market imperfection: The inability of tax-exempt investors to exploit the tax arbitrage fully.

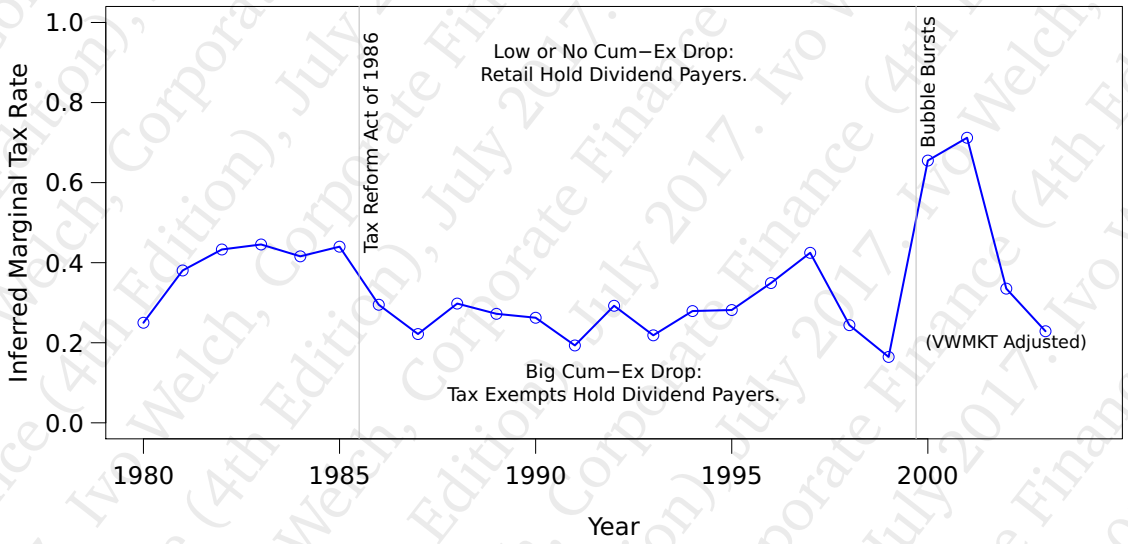


Exhibit 20.6: *Implied Tax Rates from the Cum-/Ex-Drop from Ordinary Dividends, 1980-2004.* If stocks drop from the cum- to the ex-date by exactly the amount of the dividend, we infer that the marginal investor does not care about personal taxes. If they drop by less, we infer a positive tax rate.

Exhibit 20.6 shows that the answer is no. The marginal tax rate was historically closer to the prevailing personal income tax rate than it was to the tax-exempt rate of zero. The figure shows that in the early 1980s, it was around 50%. After the *Tax Reform Act of 1986*, it dropped to about 25%, from which it slowly crept up again, roughly in line with the increase in personal income tax rates during the GHW Bush and early Clinton years. Interestingly, during the tech boom of the late 1990s, retail investors seem not to have held many dividend payers (Internet and similar stocks were "in"). And after the tech crash of 2000 (these stocks were "out"), retail investors were so eager to hold dividend payers that they practically ignored the tax penalty

The empirical evidence suggests that the effective tax rate is close to the personal income tax rate. Tax-exempt investors seem to make little dent in eliminating the tax arbitrage.

and put the same value on stocks cum-dividends and ex-dividends. The implied tax rate shot up to above 60%. An inferred tax rate this high—beyond all actual tax rates—also suggests that there is more going on than just tax effects. Most likely, with dividend yields very low, the transaction costs may have prevented ordinary investors from this tax arbitrage. Of course, this does not answer the question of who would have been willing to sell shares on the cum-date or buy shares on the ex-date, rather than vice-versa. Fortunately, by 2003, the implied marginal tax rate had declined again to more normal levels, just in line with what one would expect a high-taxed investor to pay in Federal and State income taxes.

Maybe there is more going on than just taxes on the cum-/ex-drop?!

Here is yet another financial mystery: There are countries in which dividends are not taxed, so the effective marginal tax rate should be zero. There should be a one-to-one drop of the share price with the dividends on the ex-date, or buying on the cum-date and selling on the ex-date would be a great trading strategy. Yet, even in these countries, there is a positive total rate of return on such days. Why would anyone sell such shares on the cum-date and why would anyone purchase such shares on the ex-date (rather than the cum-date)? It makes no sense. This evidence should caution us not to overinterpret the U.S. cum-to-ex price drop as purely a marginal tax effect. We may not understand this drop as well as we think.

Other Important Empirical Evidence

Share repurchases tend to experience similar market responses as dividends do.

Share repurchase announcements: Unfortunately, there is no clear announcement of how much firms will repurchase. They can announce that they plan to repurchase and then decide never to do so. This fuzziness makes empirical work much more challenging. Nevertheless, from what we know, it appears that the stock market response to a share repurchase seems roughly similar to that for a dividend payment *for similar amounts of cash involved*. This is remarkable (yet another mild puzzle), because share repurchases signal less permanence.

Big repurchases naturally have bigger responses.

However, most open-market repurchase programs are larger than ordinary quarterly dividend announcements. Therefore, they tend to elicit stronger stock market responses. In addition, many auction repurchases are even larger, and so it should not be too surprising that the stock market responds much more positively to them. A typical announcement of an auction repurchase is greeted by an instant stock price jump of about 15%.

Stock splits and stock dividends: As explained at the outset, neither a stock split nor a stock dividend is a payout. In fact, neither event changes the firm's projects. Every investor owns the same fraction of the firm before and after the event, and no money changes hands. (It used to be that there were certain listing requirements and higher full-service brokerage commissions for stocks trading around $30 per share, but neither of these two factors is likely to be important nowadays.) Stock splits and stock dividends are good "null" benchmarks with which to compare dividend declarations and share repurchase announcements. We should expect just about a zero response to the announcement of either.

The market also responds to stock splits.

Alas, on average, investors seem to respond positively when firms announce a split, where the number of shares increases and the stock price drops. This suggests that the market considers a split to be good news—it must increase its assessment of the net present value of the firm's underlying project. Indeed, many firms that split often produce better earnings after the stock split. In a reverse split, the firm merges shares. For example, two shares each worth $5 become one share worth $10. Again, no money changes hands—and, again, the stock market responds. In this case, upon the announcement, the share price usually drops.

Long-term reaction: In an efficient market, we would expect stock prices to incorporate all relevant information at the announcement. There should be no slow long-term stock market reaction after the news has been released. However, there is evidence that there

may indeed be a strategy that allows you to earn abnormal returns: Firms that pay out more in dividends and repurchases tend to perform better in the long run—not just in terms of their earnings (which you would expect) but also in terms of their financial market values (which you would not expect if the market had taken all available information into account as soon as it had the information). Firms that increased their dividends seemed to outperform those firms that decreased their dividends. The cumulative stock return difference was about 10% per year. Conversely, firms that issue equity tend to underperform over the following years.

However, before you invest all your money into firms that have recently raised their payout, be aware that long-term returns are quite difficult to measure reliably, and we do not know if the historical experience will continue in the future.

➤ Relevance of empirical history, Sect. 7.1, Pg.155.

Q 20.14. If the stock price is not expected to drop from the cum-day to the ex-day, what is the marginal income tax rate?

Q 20.15. What is the implied tax rate suggested by the real-world cum-/ex-drop?

Q 20.16. Should a stock split create value? Does it?

Q 20.17. Do stock price announcement responses to dividend initiations (or dividend eliminations) tend to be underreactions or overreactions?

20.5 Survey Evidence

What do the decision makers believe?

Instead of researching the data to determine what CFOs are actually doing, we can also just try to ask them. A 2004 paper by Brav, Graham, Harvey, and Michaely did exactly this, surveying 384 financial executives. This kind of evidence is not a substitute for, but a complement to, the empirical evidence. Managers may respond to immediate financial market pressures and incentives without fully realizing their underlying causes. The proverbial grain of salt is appropriate.

Here are their opinions that make sense.

The CFOs in this study have some very definite and interesting opinions:

- They state that they pay dividends because they are trapped by history. They do not want to cut existing dividends, but given the choice, they would not begin paying dividends in the first place. In fact, their desire not to cut dividends goes so far that they claim that they would not only raise more external capital, but even pass up positive-NPV projects to pay them. They claim not to care at all about investment opportunities when it comes to dividends.
- In contrast, CFOs do care about investment opportunities and residual cash left over when it comes to share repurchases. In fact, they seem to think of their own stock as an investment opportunity in that they try to earn money by attempting to "time" their own stock, buying more shares when the price seems low.
- 40% of these executives want to attract institutional investors with dividends—but they also believe that they can accomplish this with share repurchases.
- 40% of these executives target a dividend-per-share ratio (and 27% target changes therein), 28% target a dividend-to-earnings (payout) ratio, and 14% target a dividend-to-price ratio. When it comes to share repurchases, they tend to target a dollar value of repurchases, not any particular ratio.
- Repurchases are often related to option or stock compensation plans, providing the firm with the shares needed to satisfy their employee obligations.

- Repurchases offer a flexibility that dividends do not. Managers perceive this to be a good thing and would argue that it creates value for the company.
- However, managerial answers to surveys about dividends are in line with what one would expect if they were agency-conflicted—that is, interested first in helping themselves. This is not to say that executives deliberately plot how to enrich themselves, but that over time their views tend to evolve toward what is in their own best interests. Although reinvestment increases the share price and firm size, payout only helps anonymous investors far away from the firm, who own less of the firm after the payout, and this diminishes the share price and firm size. Thus, payouts are less salient to managers.
- It is further evidence of an agency conflict that dividend-paying financial executives answer that they would most like to use the money saved by a hypothetical dividend elimination not for a share repurchase (the obvious substitute) but for paying down debt. Avoiding bond-rating downgrades and retaining financial flexibility are important to CFOs. (Note again that high bond ratings and financial flexibility reduce external pressure on management, even if they do not create value.)

Here are their opinions that are more difficult to understand.

So far, so good. Now it becomes a bit stranger. Only one-third of the respondents contemplate personal income tax consequences, though 40% realize the relevant repurchase advantage. However, if they recognize it, they rarely consider their investors' personal income tax consequences to be important to their payout decisions. This finding may not be too strange, because differential tax consequences are rather modest today.

Here are their two opinions that seem incomprehensible.

However, here is where it gets *truly* strange:

- Many CFOs believe that repurchases automatically increase earnings per share, as if money paid out would not otherwise create more earnings. This is contrary to what you learned on Page 569.
- Clearly, dividends are related to the stability of future earnings, and CFOs recognize this fact. They also realize that they take future earnings into account when deciding on dividends. Alas, they then claim *illogically* that there is no additional discipline imposed by dividend payments, and they claim that dividends and repurchases convey similar information. Moreover, they believe that it is unimportant that payouts, and especially dividends, convey information to the market. Again, this is odd, because they state that they pay out dividends depending on their opinions about the future. Why would the market not learn their inside perspectives from their dividend payout choices?

Q 20.18. Do CFOs feel more pressure to continue dividends or share repurchase programs?

Summary

What payout policy should a company choose? The most important recommendation is that a company should pay out cash when the alternative uses for it are not positive-NPV projects. Interestingly, Warren Buffett (from Berkshire Hathaway) has stated publicly something similar to this philosophy: "We will pay either large dividends or none at all if we can't obtain more money through reinvestment [of those funds]." Of course, many other managers do not like to hear this advice, or they assert that all of their projects are high NPV, whether this is true or not. They would rather govern large firms with much financial flexibility—firms that are unconstrained by debt or payout requirements. Compared to the question of whether the firm should or should not pay out, the question of whether the form of payout should be dividends or share repurchases is of secondary importance nowadays, given the small residual dif-

ferences between them. Their differences mattered more in the past, before the 2003 change that started taxing dividends more like long-term capital gains than like ordinary income. Dividends signal more long-term confidence, but they cost investors more in personal income taxes.

This chapter covered the following major points:

- Equity payouts come in two forms: dividends and share repurchases. Share repurchases are either auction-based or open market. Dividends are either ordinary or special. (Stock dividends are not payouts, but more like stock splits.)
- In a perfect market, it does not matter whether the firm pays out or reinvests, or how it pays out.
- Dividends and share repurchases have equal effects in terms of "eating substance" for investors.
- In a share repurchase, both tendering and nontendering shareholders benefit.
- Share repurchases do not necessarily raise EPS.
- An equity payout is the opposite of issuing. Thus, all factors discussed in the earlier capital structure chapters apply here, too.
- Share repurchases are better than dividends from a personal income tax perspective, but no longer greatly so.
- Unlike share repurchases, ordinary dividends are regular and steady. This behavior is called dividend smoothing. The financial market expects dividends to continue—a fact that pushes managers to continue them and in turn makes the market expect them.
- Executives with stock options benefit relatively more from a share repurchase than from a dividend payout.
- Since World War II, dividend-earnings ratios have held roughly stable at around 50%. The exception was the Great Recession of 2008-2009, when dividends held steady but the S&P 500 dropped precipitously.
- Dividend-price ratios were volatile from 1920 to 1960, increased in the 1970s from 3% to 5%, trended smoothly down from 5% in 1980 to about 1.5% in 2000, and have since crept up again to above 2% in 2015.
- The net-payout ratio—dividends plus share repurchases minus share issuing—is sometimes positive, sometimes negative.
- Repurchases and dividends are about equally important today.
- Dividends are paid by about 3,000 of the 10,000 publicly traded firms—typically larger and more settled firms. When the market places higher multiples on dividend payers, more firms may want to start paying dividends.
- Firms experience a positive stock price response when they declare a dividend. The effect of the initial dividend declaration is a stunning 2-4%.
- There is some evidence that the stock announcement response to a dividend payment and a repurchase, both for the same amount of cash, is roughly similar. If there is a difference, it is so small that it is easily lost in the ordinary stock-price noise.
- For special dividends and large (often auction-based) share repurchases, the value response can be very large—about 15% on average.
- The market response from the cum- to the ex-date allows inferring the marginal investor's tax rate. For ordinary dividends, it tends to be fairly close to the tax rate of retail investors. This leaves room for tax-exempt investors to earn excess returns.
- When asked, financial executives feel trapped by their dividend history. They would rather not pay dividends but feel that they have to—even when paying dividends forces them to pass up good projects. They try to trade profitably on their own stock price when they repurchase. Their answers are broadly consistent with what is in their own best interests. Strangely, many believe incorrectly that repurchases always raise EPS, and they dispute that dividends carry useful information and/or discipline to the market.

Keywords

Auction-based repurchase, 567. Black Tuesday, 578. Cash dividend, 566. Cum-dividend date, 566. DRIP, 566. Declaration date, 566. Dividend reinvestment plan, 566. Dividend smoothing, 574. Dividend yield, 577. Dividend, 566. Dividend-earnings ratio, 577. Dividend-payout ratio, 577. Dividend-price ratio, 577. Effective tax rate, 582. Ex-dividend date, 566. Executive stock option, 574. Open-market repurchase, 567. Pro rata, 567. Reverse stock split, 566. Rule 10b-18, 567. Rule 10b-5, 567. Safe harbor, 567. Share repurchase, 567. Stock dividend, 566. Stock split, 566. Targeted repurchase, 569.

Answers

Q 20.1 The two important dividend dates are the declaration date (when the dividend payment is announced) and the cum- versus ex-dividend date (when the stock trades with the right to receive dividends versus without the right).

Q 20.2 In a perfect market, a stock split should not change anything value-wise. It is merely a change in numeraire, which does not affect anything fundamental about the company (such as earnings, cash flows, etc.). Thus, the stock market response should be zero.

Q 20.3 The two kinds of programs are auction-based repurchases and open-market repurchases.

Q 20.4 A firm undertaking an open-market repurchase program could be accused of manipulating its stock price only if it failed to follow the exact SEC safe-harbor guidelines in Rule10b-18.

Q 20.5 No! Even a normal investor is as well off with a share repurchase as with a dividend payout in a perfect market. Neither a share repurchase nor a dividend payout changes the investor's wealth. (The "wealth increase" in a share repurchase comes from an increase in the fraction of the firm that each share now owns.)

Q 20.6 The firm was worth \$1,000, so shares are currently worth \$10 each. If the firm repurchases my shares, it pays out $20 \cdot \$15 = \$300$ and has \$700 left, to be split among 80 shares. Thus, the remaining shares are now worth only $\$700/\$80 = \$8.75$ each. The moral of the story is that when a firm offers to purchase shares for more than they are worth, the nonparticipating shareholders suffer.

Q 20.7 If the firm uses money for share repurchases that previously was used to fund negative-NPV projects, then the firm's EPS should go up.

Q 20.8 Basically, yes: Dividends and share repurchases are indeed mostly the opposite of equity issuing. They reduce the equity investment in a firm—the opposite of what equity issues accomplish. Therefore, virtually all arguments made in Chapters 18 and 19 apply to dividends and repurchases in reverse.

Q 20.9 The remaining tax advantage of share repurchases comes from the fact that capital gains can be realized mostly by those investor clienteles who face low capital gains taxes, perhaps because they have low income and statutory rates, or perhaps because they have losses elsewhere. This allows the shareholders in the aggregate to escape most repurchase payout taxation. The remaining investors are not taxed in the interim—their money continues to bear fruit for them, and not for the IRS.

Q 20.10 The remaining differences are as follows: Dividends tend to be more regular than share repurchases; executives and insiders may often not tender into a repurchase, but they will enjoy the relatively higher share price from a repurchase through executive compensation that is linked to the share price; some retail investors like dividends; some funds cannot hold stocks that do not pay dividends.

Q 20.11 They are not much lower. D/E ratios in the 2000s are generally similar to what they were 40 years ago.

Q 20.12 D/P ratios in the 2000s are generally lower than they were in the 1960s. D/P ratios have declined to about 1-2%.

Q 20.13 Dividends used to be more important, but the two are about alike nowadays.

Q 20.14 If the stock price is the same on the cum-day and the ex-day, then the marginal income tax rate is $\tau = 100\%$, because every investor who would purchase the stock on the cum-day afternoon and sell it on the ex-day morning would get to keep "for free" whatever part of the dividend is not taxed. (I am ignoring the small daily upward drift of stock prices.)

Q 20.15 The tax rate implied by the average drop from the cum-date to the ex-date seems to be about 20%.

Q 20.16 A stock split should not create value in a perfect market. Logically, it is just a change in numeraire. It should make no difference to investors whether they own 1 stock worth \$100 or 2 stocks worth \$50 each. However, stock splits do seem to signal that the future is brighter, because the stock price usually responds positively to stock split announcements, and may therefore create value in the real world.

Q 20.17 The stock price does not seem to react fully to dividend initiations (or dividend eliminations), because the positive (negative) instant reaction is followed by more of the same, on average. Thus, they are underreactions.

Q 20.18 In a survey, CFOs indicated that they feel more pressure to continue dividends.

End of Chapter Problems

Q 20.19. Search the Web to find a company that has recently announced a stock split. What happened to its stock price on the day of the announcement?

Q 20.20. Use a financial website to identify the company with the highest dividend yield today. What is it?

Q 20.21. Use a financial website to identify three firms that are currently undertaking an auction-based repurchase program. What fraction of the shares are they repurchasing?

Q 20.22. Consider a firm in a perfect market with 80 shareholders, including yourself, who each own 1 share worth $10. In addition, I own 20 shares (for a firm total of 100 shares), and I am trying to fire the management. To appease me, the management has offered to purchase my 20 shares at $9 per share. How would this change the value of your share?

Q 20.23. Can the firm's EPS go down if the firm takes on a positive-NPV project?

Q 20.24. How would the value change if a firm decides to increase its dividend payout, and if financial distress and agency/signaling costs are the only relevant concerns?

Q 20.25. Considering the differences other than personal income taxes, what companies should pay dividends rather than repurchase shares? How important is the right choice between the two?

Q 20.26. Think about the non-tax-related differences between share repurchases and dividends. Describe the firms in which each difference would be relatively more important.

Q 20.27. Do more or fewer firms pay dividends in the 21st century than in the 20th century? What is the trend?

Q 20.28. In an efficient market, when should the stock price react to the value consequences of a dividend change? Discuss the effect both on the total return and on the capital gain. Which should be larger?

Q 20.29. Comparing the dividend announcement effect of 20 basis points to a typical daily standard deviation (60 basis points) and round-trip transaction costs (about 20 basis points) suggests that firms should not bother with dividends. Discuss.

Q 20.30. Would you expect trading volume to be higher for dividend-paying stocks on the declaration date or around the cum-date/ex-date?

Q 20.31. If the stock price drops on average by 0.65% from the cum-day to the ex-day when dividends of 1% of the firm are paid, then what is the marginal income tax rate?

Q 20.32. What are the dividend targets that different U.S. corporations seem to try to peg? If you cannot ask the executives, can you learn from the behavior of the firm what they peg their dividend targets to?

Q 20.33. How do managers view dividends and share repurchases differently? Which do they seem to prefer?

Q 20.34. Is there any survey evidence that suggests that there is an agency conflict between shareholders and managers when it comes to dividends? Can the answers be interpreted differently?

Data and Programming for Masters Students

Task: If you have access to CRSP (which contains dividend announcement dates), estimate the single-day stock price reaction when firms that have not paid dividends for the last two years announce that they are initiating their first dividend. Plot the average annual excess reaction by calendar year.