20

Earnings, 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 firms' active discretion. Corporate boards decide on payouts every quarter, although they often keep them the same. This is why payouts warrant their own short chapter.

20.1 Institutional Mechanics

A short retrospective on where you have seen dividends before.

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

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

➤ Separation of consumption and investment choices, § 4.1, Pg.58.

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, all equity payouts tend to reduce agency conflicts, making it more difficult for managers to waste money.

➤ Tax clienteles and dividends, § 18.6, Pg.577.

You can also think of equity payouts as the opposite of equity share issuing. In this sense, the arguments from all previous capital-structure-related chapters apply just as well to equity payouts. For example, 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. Debt and equity issuing activity, often in the context of mergers and acquisitions, tends to be more important.

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 that ever traded) 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 repeat, it is also not unusual for companies to repeat them 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 companies pay dividends so regularly that investors can easily predict them 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. Neither is important for investors — dividends just appear automatically in their brokerage accounts these days.

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 what is really the shareholders' money in the first place, 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 stock 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 a large sum when they do occur.

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 four 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 firms announced a new multiyear share repurchase program in any 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 or were disclosed on cash-flow statements. 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, which means that net repurchases may be much smaller than raw repurchases.) 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 and Imperfect Markets

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 were to cost 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 high-transaction-cost imperfect world.

The average dividend yield of large firms has been around 2-2.5% over the last decade. A badly-run firm that incorrectly pays too little or too much (say, 0% instead of 1% or vice-versa) is unlikely to make it worth your while (and the real-world transaction costs) to step in and correct the dividend policy. 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.

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

➤ Dividend Yield, § 2.3, Pg.13.

Common Fallacies

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

Some common fallacies to set straight.

1. **FALSE: Dividends do not eat "investment substance,"** whereas share repurchases and sales do.

   It makes no sense to argue that dividends are paid because investors "need" money or that share repurchases by the firm or shares sold by investors 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 earnings 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.

   Dividends eat as much substance as share sales do!

2. **FALSE: 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.

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

3. FALSE: 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.)

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 of your shares. 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.

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

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 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.

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.

Focus on the relevant aspects.

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?

Imperfect Market Relevance

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 do not destroy value. The same market imperfections that determined capital structure are at play in determining payout policy, too. For example:

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

➤ How to invest if you know more than the market, § 12.7, Pg.355.

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.

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.

Dividends or share repurchases as payout?

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 Table 19.6 Page 629 apply here, too?

➤ Tax clienteles, § 18.6, Pg.577.

Today, with low payout rates and improved tax treatment, the tax disadvantages of dividends have become more modest.

Personal Income Tax Differences and Investor Clienteles

The clientele diagrams in Section 18.6 illustrated a basic fact: From a personal income tax perspective, despite the same statutory tax rate, dividends are worse than share repurchases. Share repurchases remain the smarter way to pay out cash. 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.

➤ Tax timing, § 11.4, Pg.305.

Accumulating taxation: For example, if a firm were to produce 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 25% tax rate, you would keep \$33. In contrast, if the firm paid out the \$20 in dividends, then you would receive a 15% after-tax interest rate every year and thus keep only $\$100 \cdot 1.15 \cdot 1.15 - \$100 = \$32.25$. The \$0.75 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. Over many years, the foregone return on intermediate taxes can accumulate and make a difference.

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: 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. 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 reducing 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. *(Update August 2022: Congress has just passed a law imposing a 1% corporate tax on share buybacks.)*

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, afaik, the IRS has never enforced this for a *publicly traded* corporations. With some proper care to follow specific IRS rules, this is not a biting constraint for public firms.

➤ Historical Tax Rates

Empirical historical evidence about typical dividend yields and dividend changes. Long ago, dividends were much worse.

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. Figure 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. With top rates above 90%, government practically confiscated the dividend receipts of the highest income earners, at least of those who were not smart enough to evade them somehow — and there were many loopholes that allowed them to do so. From a tax perspective, paying dividends during and after World War II was stupid.

Repurchases and dividends are now approximately equally important.

The Reagan *Tax Reform Act of 1986* lowered the highest ordinary tax rate dramatically but closed most loopholes. In 1990, G.H.W. Bush I raised dividend taxes together with ordinary income taxes. In 2003, G.W. 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.) In 2013, the highest rates rose to 23.8% to pay for the "Affordable Care Act" (often dubbed Obamacare). As of 2021, the rates have remained there ever since. Thus, share repurchases still have some advantages over dividend payments, but they are modest. For non-sellers, share repurchases increase the fraction owned without incurring any tax. Sellers who tender into repurchase programs are presumably investors who have relatively low capital gains.

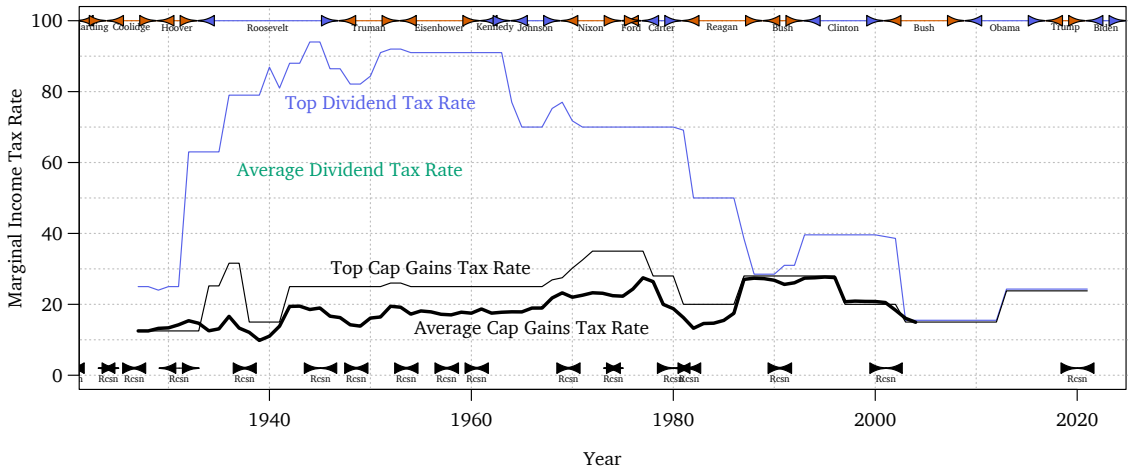

Figure 20.1: ***Capital Gains and Dividend Tax Rates, 1927-2021.*** The top lines show the marginal personal income tax rate on dividends for an investor in the top income bracket (thin line) and for the average investor (thick line). The lines below them are the equivalent capital gains tax rates. (The capital gains taxes are an overstatement, because they can be washed against capital losses and realized at the investor's discretion.) The line-arrows at the bottom indicate recessions. The line arrows at the top indicate presidential administrations. After 2004, the graph has information only on the maximum dividend and long-term capital gains tax rate, which had become the same.
Source: Originally Daniel Feenberg and Clemens Sialm, AER 2006

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.

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.

   From 2010 to 2020, annual dividend changes were approximately as follows:

Unchanged Zero Dividend	52%
Initiated Dividends	3%

Discontinued Dividends	2%
Continued Dividends	39%
Reduced Dividends	9%
Same or Little Up (0 – 3%)	7%
Normal Increase (3 – 10%)	7%
Great Increase (> 10%)	15%

Many of the reductions occurred in 2020 in the context of Covid. (Lintner also documented a second fact: Companies had a target dividend-earnings payout ratio, to which they smoothly tried to adjust. Leary and Michaely (2011) 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 almost-regular share repurchase programs, too. And many other companies pay "special dividends" [or bond dividends] that may signal their one-time nature to investors. Such special dividends may or may not be as much "one-time" as share repurchases.)

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.

Executives holding options prefer capital gains.

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. You 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

Some investors just like dividends.

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 funds cannot hold firms that pay no 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 like Tesla.

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

20.3 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, the Great Recession of 2008-9 and the Covid period of 2020-1, with near-zero interest rates. The equity markets modernized and the number of publicly-traded firms and issues first increased from 1970 to 2000 and then fell back. Let's look at patterns by decades in two important databases, CRSP and Compustat:

End of	1970s	1980s	1990s	2000s	2010s	2020-1
Firms, CRSP	4,800	5,800	7,000	4,800	3,800	4,400
Firms, Compustat	6,100	7,300	10,500	7,200	6,700	6,500

There are differences in how these two deal with small and foreign companies, share classes, etc., but they are not important to us. We will focus on industrial firms listed in Compustat. The general patterns are similar for CRSP.

Earnings

Over time, new types of public companies earned less.

Over time, the number of companies with positive earnings and the average earnings yield (i.e., earnings divided by marketcap) declined. Some of it was due to the decline in inflation, some of it was due to a market-wide shift towards companies with later earnings prospects (like technology companies):

	1970s	1980s	1990s	2000s	2010s	2020-1
Positive Earnings, in %	85	70	64	59	59	56
Earnings Yield, in %	11.4	9.6	4.5	4.5	5.4	3.3
Inflation Rate, in %	7.3%	5.8%	3.1%	2.5%	1.8%	↗

(All yields and ratios in this section are calculated by adding up the values over all firm and years separately for numerator and denominator first and then dividing the two. This is closer to a value-weighted average and avoids the 1/X problem. Other ways of taking ratios will come up with modestly different numbers.)

Dividends

Usually only large companies pay dividends and only if they have and expect to continue to have positive earnings. (This is common though not necessary, because firms could fund dividends by issuing debt or equity.) Thus, despite large increases and decreases in the number of smaller publicly traded firms, the number of dividend-paying firms has remained fairly steady, at around 2,800 firms for a long time. Conditional on paying dividends, the yield has drifted down from 5%/year in the 1970s to about 2.5%/year today. Of course, there were also many firms paying zero. Adding in those observations reduces today's average dividend yield to about 1.7%/year.

Dividend payers troughed in 2000, dividend payments in 2020.

	1970s	1980s	1990s	2000s	2010s	2020-1
Compustat Dividend Payers	3,400	2,800	2,800	2,700	2,700	2,700
Positive Dividends, in %	59	45	36	35	42	44
Dividend Yield, in %	4.5	4.8	2.1	2.2	2.6	1.7
if dividends > 0	5.1	5.6	2.8	2.9	3.3	2.4

A quick look at the earnings yield and the dividend yield tells you that U.S. companies have been paying out about half their earnings in dividends:

For 50 years now, dividends have been about half of earnings.

Payout Ratio, in %	1970s	1980s	1990s	2000s	2010s	2020-1
Dividends / Earnings	39	50	47	50	49	49
if dividends > 0	45	55	56	53	54	57

Repurchases

Companies can also return funds to shareholders by repurchasing their own shares, thus leaving remaining shareholders with a larger fraction of the firm. In the 1970s, equity repurchases were fairly small and unimportant. Nowadays, they are about as important as dividends:

Dividends and share repurchases are similar in importance.

	1970s	1980s	1990s	2000s	2010s	2020-1
Positive Repurchases, in %	25	26	24	30	39	51
Repurchase Yield, in %	0.4	1.6	1.1	2.2	2.2	1.6
if repurchase > 0	1.6	3.6	2.3	3.5	3.1	2.2

Over time, more firms caught up to the idea that share repurchase programs are a more tax-efficient way to return cash. 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. Thus, the net share repurcases were much smaller:

	1970s	1980s	1990s	2000s	2010s	2020-1
Positive Net Repurchases, in %	19	18	17	21	29	37
Net Repurchase Yield, in %	–1.6	–1.0	–0.4	0.3	1.0	0.7
if net repurchase > 0	1.7	3.8	2.2	3.0	3.0	2.2

Presumably, if these shares had not been given out, the firms would have had to pay their employees more in compensation.

Historical S&P 500 Dividend and Repurchase Payout Patterns

Figure 20.2 draws three series year by year and only for the S&P 500 firms.

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

Dividend-Earnings: Panel A shows 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**.) There was one unusual spike in the Great Recession of 2008-9, when the S&P 500 and firm earnings dropped dramatically but firms mostly continued their dividends.

Dividend-price ratios have fallen.

Dividend-Price Yields: Panel B shows that the dividend yield has been trending down since the 1930s. They were also more volatile before the 1960. (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 yield, § 2.3, Pg.13.

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

Total net payout (dividends, repurchases, and equity issues): Panel C shows that dividends are not the whole picture. Since the Great Recession of 2008-9, public firms have raised more capital than they returned to shareholders. (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 empirical findings

There are many other interesting factoids about dividends. Fama and French (2000) described how dividends became less important. However, this reversed right after their paper was published. Baker and Wurgler (2005) showed that firms seem to start paying more dividends when the market-to-book ratio of dividend-paying firms increases relative to that of non-dividend-paying firms. They seem to "cater" to the preferences of investors.

The empirical evidence of payout patterns summarized.

In sum, I would characterize the empirical evidence as follows. Dividends used to be much more important than share repurchases, but they are only modestly more important now. As firms' stock values have grown, the dividend yield has declined, in line with interest rates and inflation.

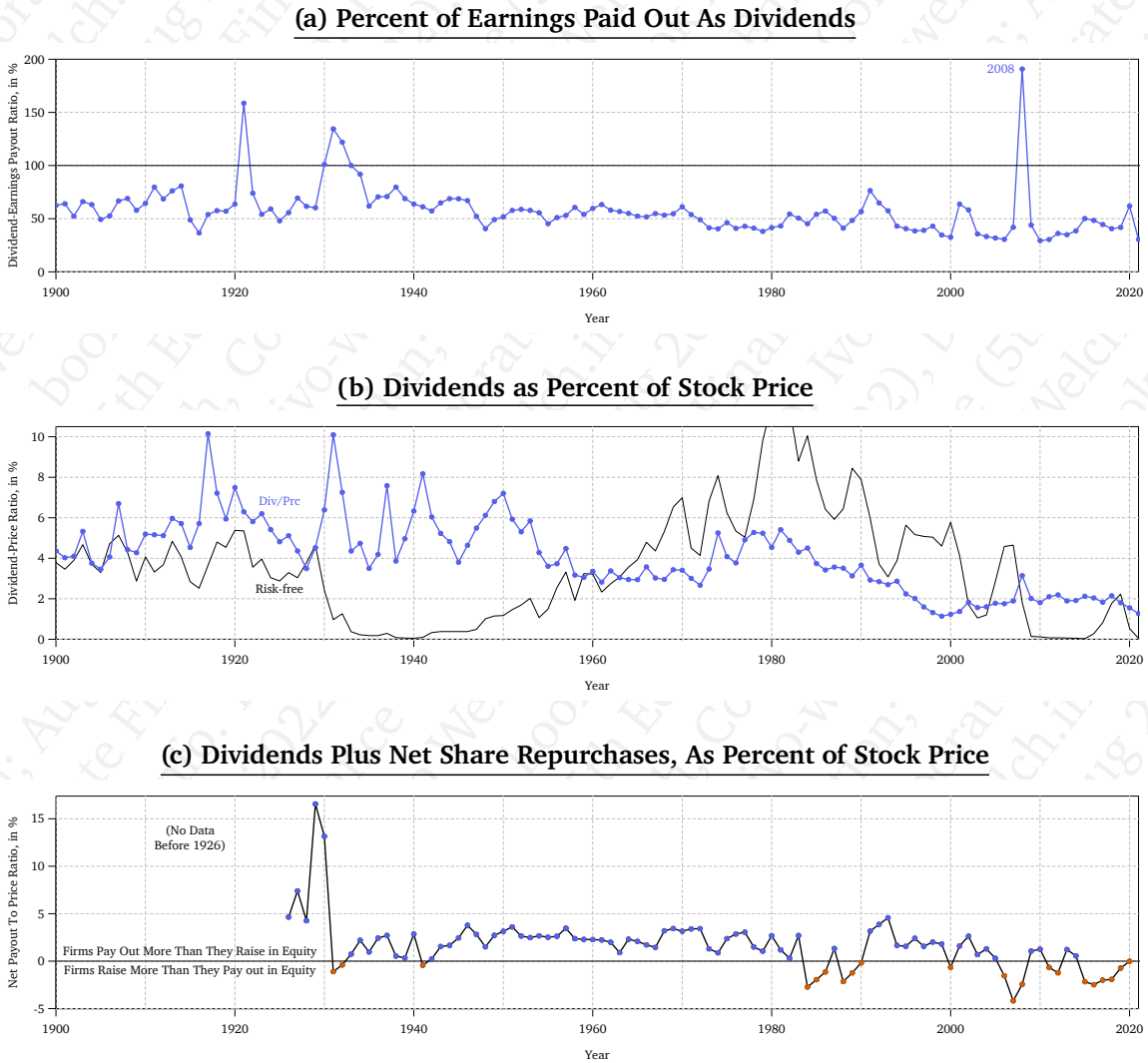

Figure 20.2: ***Historical Dividend and Repurchase Payout Patterns for the S&P 500, 1870–2021.*** In (b), the risk-free short-term interest rate is in faint black. Net share repurchases subtract Share Issues.
Source: Goyal-Welch websites

Q 20.11. Over the decades, how have dividend-earnings payout ratios changed?

Q 20.12. Over the decades, how have dividend-price ratios changed?

Q 20.13. Over the decades, how have dividend-repurchase ratios changed?

Market Reactions

Event studies.

How does the stock market greet the announcement of dividend increases?

➤ Announcement Response

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

In an efficient stock market, any reaction to an event must occur when the market first learns about it. Thus, we can look at the announcement of dividend increases.

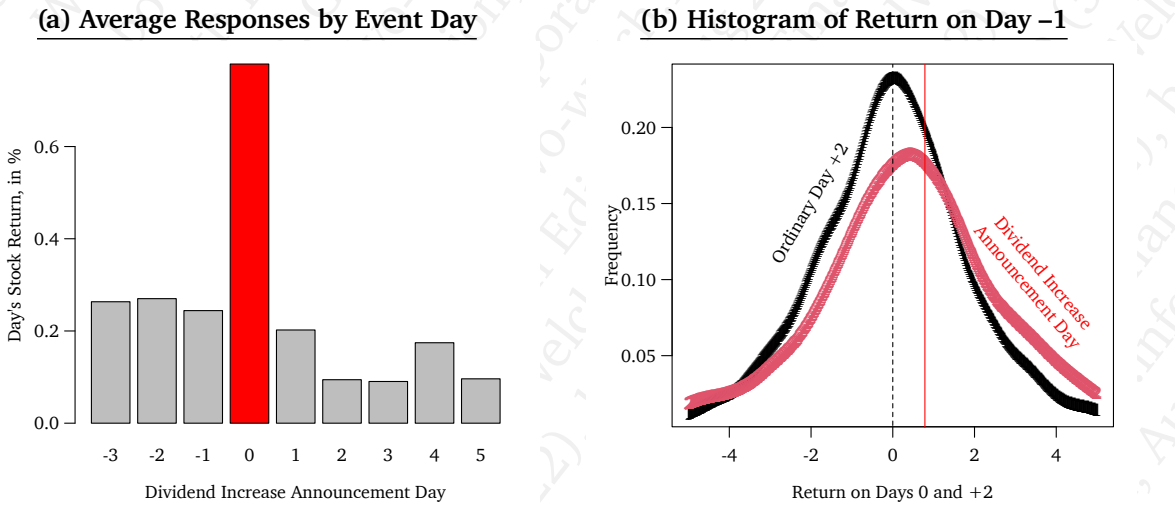

Figure 20.3: ***Stock Price Responses to Increasing-Dividends Announcements in 2020 and 2021.*** Stock returns are net of the S&P 500 return. The left graph shows average rates of return averaged over all stocks on different trading days relative to each firm's aligned dividend announcement day. On a typical post-announcement day, stocks earned about 10 bps. On the increased dividend declaration date, they earned about 5-10 times 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 red vertical line is the mean. (For comparison, the thin black line is the mean return on day +2. The red dividend announcement day return histogram is right-shifted.)

Empirically, dividend payment announcements have been good news on average.

Figure 20.3 shows what happened in 2020 and 2021 when firms announced that they would increase their (typically quarterly) dividends. The stock price popped by about 80 bps on average. This is a large number and statistically significant. And, not shown, the average dividend-yield increase was small (only 50 bps).

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 80 bps represents a large increase, there were many firms that experienced much higher or much lower returns. Many firms even dropped, some by as much as 2% *in one day* — often for entirely different reasons, though. You cannot assume that increasing dividends is *always* good news, even though it is good news on average.

Not all firms! Still a lot of variability.

You should also not take this historical data as policy advice if you are a CFO. 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.

Don't draw causality inferences!

➤ Causality and Correlation, § B, Pg.172.

There is another intriguing and related puzzle brought up in a paper by Benartzi, Michaely, and Thaler about how we should interpret such announcement reactions. 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? Their answer was "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. Finally, the market also learns from the declarations that managers are inclined to pay them, and continue to pay them — good news in itself.

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

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 higher earnings in the future). 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 as 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.

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

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

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-dividend* into *ex-dividend* status is known in advance), there should still be a stock *price* reaction. Here

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

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 (here $1) should be negative by just about the amount of the dividend payment. Note that if all taxable investors could costlessly resell their shares to tax-exempt investors the instant before the ex-date and later repurchase them, Uncle Sam would receive no dividend tax income.

➤ Capital gains versus net returns, § 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 the stock again 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. (If enough tax-exempt institutions were competing, they would bid up the price to $50.50 on the cum day.) Such dividend-avoidance is however limited by accumulated capital gains. If the sale-and-repurchase costs taxable investors more in capital-gains taxes than they save in dividend taxes, they may have no choice but to take the dividend tax hit.

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

In the real world, the tax arbitrage competition is limited not only by capital gains consequences, but also by transaction costs, IRS rules, 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 the IRS has specifically prohibited such tax arbitrage. Naturally, there is more tax arbitrage if the dividends are bigger (e.g., when it comes to large, special one-time dividends). Of course, neither taxing authority can touch foreign investors, like the Chinese, Norwegian, or Saudi sovereign wealth funds (or, for this matter, Russian oligarchs and authorities).

➤ Arbitrage, § 12.6, Pg.347.

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 on the cum-day; 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.

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

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

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

With this formula, you can now use the average price decline to determine the marginal investor's tax rate for dividend-paying stocks from the dividend cum- to the 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.

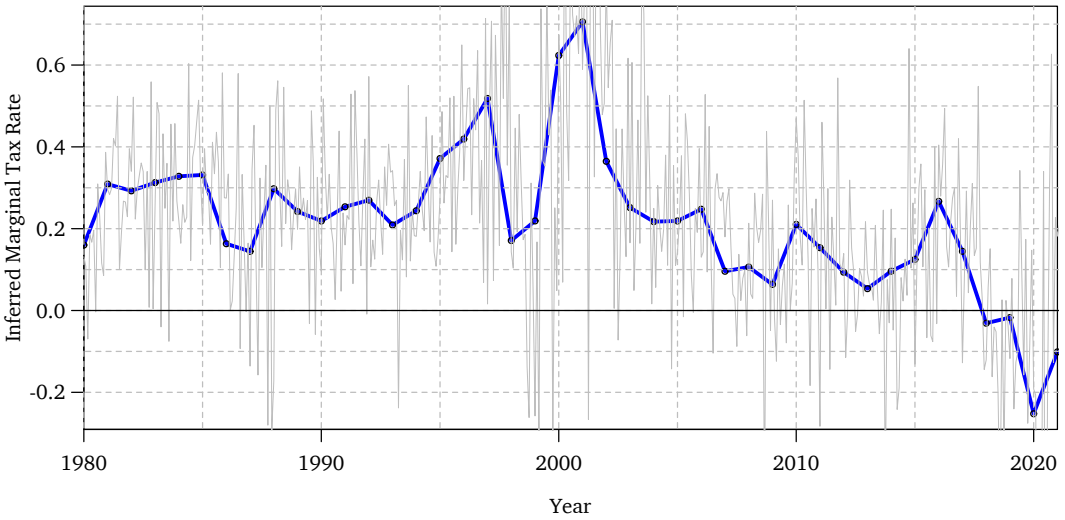

Figure 20.4: ***Implied Tax Rates from the Cum-/Ex-Drop from Ordinary Dividends, 1980-2021.*** Every trader with a tax rate below the implied dividend tax rate could profit by buying dividend-paying shares on the last cum-dividend day and selling them on the next ex-dividend day. By 2018, dividend arbitrage was no longer profitable even for tax-exempt institutions.

Figure 20.4 shows how the world has changed over the decades. For the longest time, the marginal tax rate was historically closer to the prevailing personal income tax rate (around 30-40% including state income taxes) than it was to the tax-exempt rate of zero. As transaction costs declined over the last 20 years, competition among tax arbitrageurs has probably eliminated most of the profits for tax-exempts to buying shares before the cum date and selling them thereafter. The stock price now drops about as much as one would expect if the dividend tax rate were zero. If you actually

The empirical evidence suggests that the world has changed. Tax-exempt investors have probably eliminated the tax arbitrage.

pay income tax on your dividends, those dividends are bad tax news for you. You will have to pay the dividend tax. Don't expect compensation from the cum- to the ex-day. (And if you are about to purchase shares, maybe you should wait until the ex-date to avoid these taxes.)

➤ Other Empirical Evidence

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

Share repurchase announcements: Unfortunately, as previously noted, 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.

Nevertheless, 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 price 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, in the past, the following strategy earned some 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, § 7.6, Pg.167.

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?

20.4 Survey Evidence

What do the decision makers believe?

Instead of researching actions in the data to determine what CFOs are actually doing, we can also just ask them. A 2004 paper by Brav, Graham, Harvey, and Michaely did exactly this, surveying 384 financial executives. (The evidence in 2021 remains roughly the same.) 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 why they are doing so. They are also conflicted. 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 offer a flexibility that dividends do not. Managers perceive this to be a good thing and claim that this flexibility 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 then own less of the firm after the payout, and this diminishes the share price and firm size. Thus, payouts are less beneficial 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.)

Incidentally, repurchases are often related to option or stock compensation plans, providing the firm with the shares needed to satisfy their employee obligations.

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 6.
- 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

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.
- Managers seem to smooth ordinary dividends, resulting in more steady patterns. 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 2008-9, 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 stabilized at around 2-2.5%.
- The net-payout ratio — dividends plus share repurchases minus share issuing — is sometimes positive, sometimes negative. In the 2010s, firms raised more capital than they paid out.
- Repurchases and dividends are about equally important today.
- Dividends have been paid by about 3,000 of the 10,000 publicly traded firms that have existed at any point starting in 1970 — typically larger and more settled firms. When the market places higher multiples on dividend payers, more firms seemed to have started paying dividends.
- Firms experience a positive stock price response when they announce an increase in future dividends.
- There is some evidence that the stock announcement responses to dividend payments and repurchases, both for the same amount of cash, are 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 used to be the case that retail investors earned extra return from the cum- to the ex-date to compensate them for the incurred tax payment. As of 2021, this no longer seems to be the case. This has also removed the incentive for tax-exempt investors to buy more shares on the cum-date and sell them on the ex-date. With lower transaction costs than ever, if a sale of shares would not have capital gains consequences, it may be wise for taxable retail investors to sell their shares on the cum date and repurchase them on the ex-date. This avoids a tax payment.
- 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.

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 differences 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.

Keywords

auction-based repurchase p.3; cash dividend p.2; cum-dividend date p.2; declaration date p.2; dividend reinvestment plan p.2; dividend smoothing p.10; dividend yield p.14; dividend-earnings ratio p.14; dividend-payout ratio p.14; dividend-price ratio p.14; dividend p.2; drip p.2; effective tax rate p.19; ex-dividend date p.2; executive stock option p.11; open-market repurchase p.3; pro rata p.3; reverse stock split p.2; rule 10b-18 p.3; rule 10b-5 p.3; safe harbor p.3; share repurchase p.3; stock dividend p.2; stock split p.2; targeted repurchase p.6;

Answers

AQ 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).

AQ 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.

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

AQ 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.

AQ 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.)

AQ 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.

AQ 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.

AQ 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.

AQ 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.

AQ 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.

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

AQ 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%.

AQ 20.13 Dividends used to be a lot more important, but are only modestly more important now.

AQ 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.)

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

AQ 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.

AQ 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.

AQ 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?