

CHAPTER 10

DIVIDEND POLICY

At the end of each year, every publicly traded company has to decide whether to return cash to its stockholders and, if so, how much in the form of dividends. The owner of a private company has to make a similar decision about how much cash he or she plans to withdraw from the business and how much to reinvest. This is the dividend decision, and we begin this chapter by providing some background on three aspects of dividend policy. One is a purely procedural question about how dividends are set and paid out to stockholders. The second is an examination of widely used measures of how much a firm pays in the dividends. The third is an empirical examination of some patterns that firms follow in dividend policy.

Having laid this groundwork, we look at three schools of thought on dividend policy. The dividend irrelevance school believes that dividends do not really matter because they do not affect firm value. This argument is based on two assumptions. The first is that there is no tax disadvantage to an investor to receiving dividends, and the second is that firms can raise funds in capital markets for new investments without bearing significant issuance costs. The proponents of the second school feel that dividends are bad for the average stockholder because of the tax disadvantage they create, which results in lower value. Finally, there are those in a third group who argue that dividends are clearly good because stockholders (at least some of them) like them and react accordingly when dividends are increased.

Although dividends have traditionally been considered the primary approach for publicly traded firms to return cash or assets to their stockholders, they comprise only one of many ways available to the firm to accomplish this objective. In particular, firms can return cash to stockholders through equity repurchases, where the cash is used to buy back outstanding stock in the firm and reduce the number of shares outstanding. In addition, firms can return some of their assets to their stockholders in the form of spin-offs and split-offs. This chapter will focus on dividends specifically, but the next chapter will examine the other alternatives available to firms and how to choose between dividends and these alternatives.

Background on Dividend Policy

In this section, we consider three issues. First, how do firms decide how much to pay in dividends, and how do those dividends actually get paid to the stockholders? We then consider two widely used measures of how much a firm pays in dividends, the dividend payout ratio and the dividend yield. We follow up by looking at some empirical evidence on firm behavior in setting and changing dividends.

The Dividend Process

Firms in the United States generally pay dividends every quarter, whereas firms in other countries typically pay dividends on a semi-annual or annual basis. Let us look at the time line associated with dividend payment and define different types of dividends.

The Dividend Payment Time Line

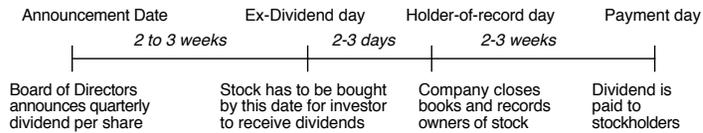
Dividends in publicly traded firms are usually set by the board of directors and paid out to stockholders a few weeks later. There are several key dates between the time the board declares the dividend until the dividend is actually paid.

- The first date of note is the *dividend declaration date*, the date on which the board of directors declares the dollar dividend that will be paid for that quarter (or period). This date is important because by announcing its intent to increase, decrease, or maintain dividend, the firm conveys information to financial markets. Thus, if the firm changes its dividends, this is the date on which the market reaction to the change is most likely to occur.
- The next date of note is the *ex-dividend date*, at which time investors must have bought the stock to receive the dividend. Because the dividend is not received by investors buying stock after the ex-dividend date, the stock price will generally fall on that day to reflect that loss.
- At the close of the business a few days after the ex-dividend date, the company closes its stock transfer books and makes up a list of the shareholders to date on the *holder-of-record date*. These shareholders will receive the dividends. There should be generally be no price effect on this date.
- The final step involves mailing out the dividend checks on the *dividend payment date*. In most cases, the payment date is two to three weeks after the holder-of-record date.

Although stockholders may view this as an important day, there should be no price impact on this day either.

Figure 10.1 presents these key dates on a time line.

Figure 10.1 The Dividend Timeline
Figure 10.1: The Dividend Time Lin



Types of Dividends

There are several ways to classify dividends. First, dividends can be paid in cash or as additional stock. *Stock dividends* increase the number of shares outstanding and generally reduce the price per share. Second, the dividend can be a *regular dividend*, which is paid at regular intervals (quarterly, semi-annually, or annually), or a *special dividend*, which is paid in addition to the regular dividend. Most U.S. firms pay regular dividends every quarter; special dividends are paid at irregular intervals. Finally, firms sometimes pay dividends that are in excess of the retained earnings they show on their books. These are called *liquidating dividends* and are viewed by the Internal Revenue Service as return on capital rather than ordinary income. As a result, they can have different tax consequences for investors.

Measures of Dividend Policy

We generally measure the dividends paid by a firm using one of two measures. The first is the **dividend yield**, which relates the dividend paid to the price of the stock:

$$\text{Dividend Yield} = \text{Annual Dividends per Share} / \text{Price per Share}$$

The dividend yield is significant because it provides a measure of that component of the total return that comes from dividends, with the balance coming from price appreciation.

$$\text{Expected Return on Stock} = \text{Dividend Yield} + \text{Price Appreciation}$$

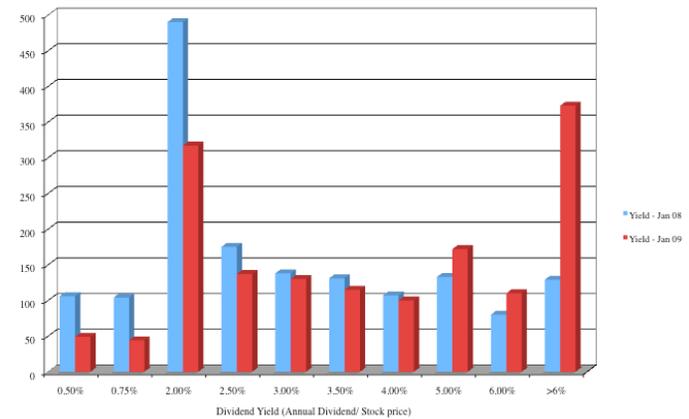
Some investors also use the dividend yield as a measure of risk and as an investment screen, that is, they invest in stocks with high dividend yields. Studies indicate that stocks

with high dividend yields, after adjusting for market performance and risk, earn excess returns.

Figure 10.2 tracks dividend yields on the 2,700 listed stocks in the United States that paid dividends on the major exchanges in January 2009 and contrasts them with the yields a year earlier.

Dividend Yield: The dollar dividend per share divided by the current price per share.

Figure 10.2: Dividend Yields for US Stocks - January 2008 vs January 2009



Estimated using Value Line data on companies in January 2009.

The median dividend yield among dividend paying stocks in January 2009 is about 3%, significantly higher than the median dividend yield of 2% in January 2008. The reason for the increase, though, was not higher dividends in 2009 but lower stock prices, as a consequence of the market collapse in the last quarter of 2008. In both time periods, almost 65% of the overall sample of 7200 companies paid no dividends, making zero the median dividend yield across all companies.

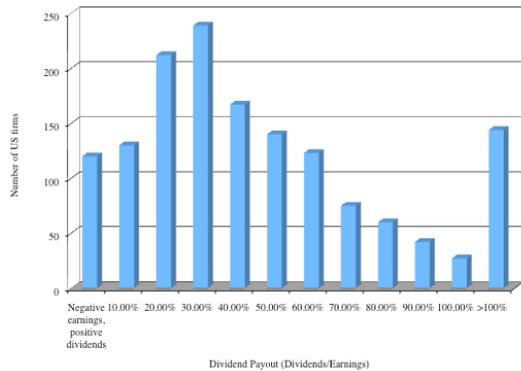
Dividend Payout: The dividend paid as a percent of the net income of the firm. If the earnings are negative, it is not meaningful.

The second widely used measure of dividend policy is the **dividend payout** ratio, which relates dividends paid to the earnings of the firm.

$$\text{Dividend Payout Ratio} = \text{Dividends/Earnings}$$

The payout ratio is used in a number of different settings. It is used in valuation as a way of estimating dividends in future periods, because most analysts estimate growth in earnings rather than dividends. Second, the retention ratio—the proportion of the earnings reinvested in the firm ($\text{Retention Ratio} = 1 - \text{Dividend Payout Ratio}$)—is useful in estimating future growth in earnings; firms with high retention ratios (low payout ratios) generally have higher growth rates in earnings than firms with lower retention ratios (higher payout ratios). Third, the dividend payout ratio tends to follow the life cycle of the firm, starting at zero when the firm is in high growth and gradually increasing as the firm matures and its growth prospects decrease. Figure 10.3 graphs the dividend payout ratios of U.S. firms that paid dividends in January 2009.

Figure 10.3: Dividend payout ratios for US companies- January 2009

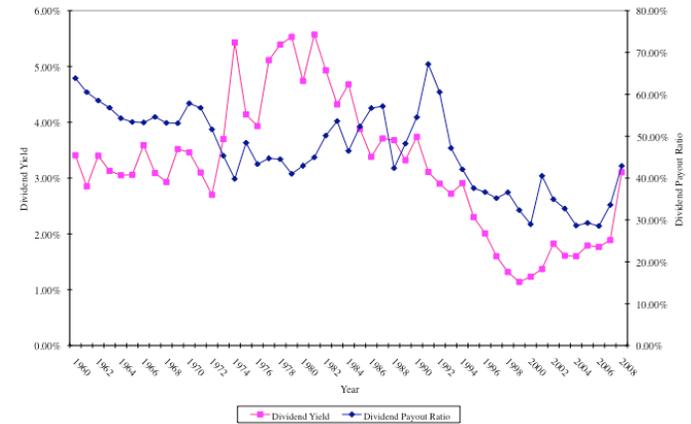


Estimated using Value Line data on companies in January 2009.

The payout ratios greater than 100 percent represent firms that paid out more than their earnings as dividends and about 120 firms paid out dividends, even though they reported losses for the year. The median dividend payout ratio in January 2009 among dividend-paying stocks, was about 35 percent, whereas the average payout ratio was approximately 40 percent.

Finally, we look at how current dividend yields and payout ratios measure up against historical numbers by looking at the average dividend yield and payout ratio for stocks in the S&P 500 from 1960 to 2008 in Figure 10.4:

Figure 10.4: Dividend Yield and Payout on S&P 500: 1960 - 2008



Note that the dividend yield went through an extended period of decline from 1980 (when it was about 5.5% to less than 2% for much of the last decade, before bouncing back in 2008). The dividend payout ratio has also decline for much of the last decade, but the drop is less dramatic. While some of the decline in both can be attributed to rising values for the denominators – stock prices for dividend yields and earnings for payout ratios – some of it can also be accounted for by a shift towards growth firms in the S&P 500 index and a move from dividends to stock buybacks across companies. We will return to examine this trend in chapter 11.

10.1. Dividends that Exceed Earnings
 Companies should never pay out more than 100 percent of their earnings as dividends.

- a. True
- b. False

Explain.

 *divUS.xls*: There is a data set online that summarizes dividend yields and payout ratios for U.S. companies from 1960 to the present.

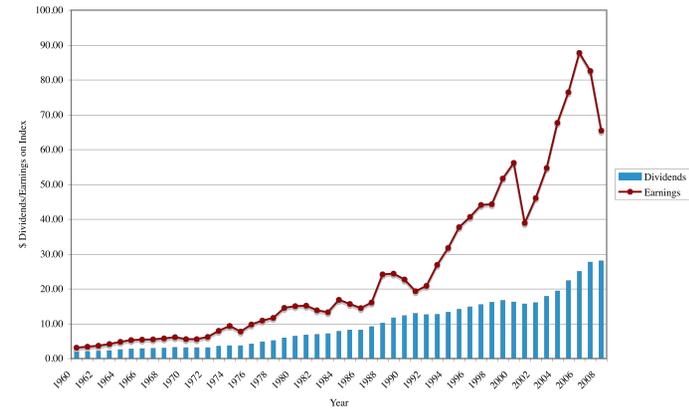
Empirical Evidence on Dividend Policy

We observe several interesting patterns when we look at the dividend policies of firms in the United States in the past fifty years. First, dividends tend to lag behind earnings; that is, increases in earnings are followed by increases in dividends, and decreases in earnings sometimes by dividend cuts. Second, dividends are “sticky” because firms are typically reluctant to change dividends; in particular, firms avoid cutting dividends even when earnings drop. Third, dividends tend to follow a much smoother path than do earnings. Finally, there are distinct differences in dividend policy over the life cycle of a firm, resulting from changes in growth rates, cash flows, and project availability.

Dividends Tend to Follow Earnings

It should not come as a surprise that earnings and dividends are positively correlated over time because dividends are paid out of earnings. Figure 10.5 shows the movement in both earnings and dividends between 1960 and 2008 for companies in the S&P 500.

Figure 10.5: Dividends and Earnings - S&P 500



Source: Standard & Poor's.

Take note of two trends in this graph. First, dividend changes trail earnings changes over time. Second, the dividend series is much smoother than is the earnings series.

In the 1950s, John Lintner studied the way firms set dividends and noted three consistent patterns.¹ First, firms set **target dividend payout ratios**, by deciding on the fraction of earnings they are willing to pay out as dividends in the long term. Second, they change

Target Dividend Payout Ratio:
The desired proportion of earnings that a firm wants to pay out in dividends.

dividends to match long-term and sustainable shifts in earnings, but they increase dividends only if they feel they can maintain these higher dividends. Because firms avoid cutting dividends, dividends lag earnings. Finally, managers are much more concerned about changes in dividends than about levels of dividends.

¹J. Lintner, 1956, “Distribution of Income of Corporations among Dividends, Retained Earnings and Taxes,” *American Economic Review*, 46, 97–113.

Fama and Babiak identified a lag between earnings and dividends by regressing changes in dividends against changes in earnings in both current and prior periods.² They confirmed Lintner’s findings that dividend changes tend to follow earnings changes.

10.2. Determinants of Dividend Lag

Which of the following types of firms is likely to wait *least* after earnings go up before increasing dividends?

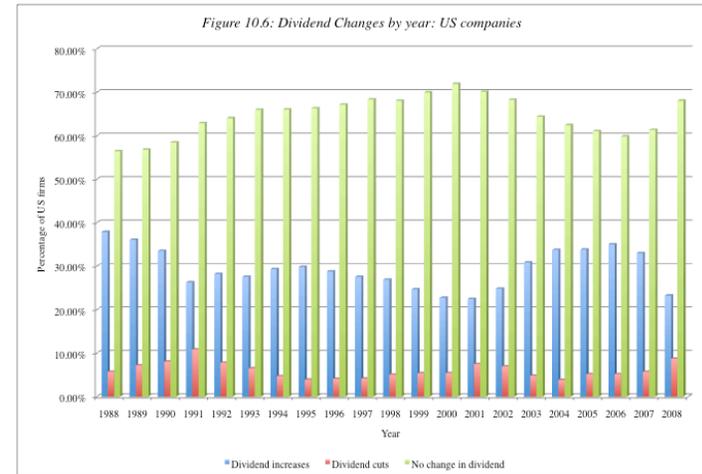
- A cyclical firm, whose earnings have surged because of an economic boom.
- A pharmaceutical firm whose earnings have increased steadily over the past five years, due to a successful new drug.
- A personal computer manufacturer, whose latest laptop’s success has translated into a surge in earnings.

Explain.

Dividends Are Sticky

Firms generally do not change their dollar dividends frequently. This reluctance to change dividends, which results in sticky dividends, is rooted in several factors. One is the firm’s concern about its capability to maintain higher dividends in future periods. Another is that markets tend to take a dim view of dividend decreases, and the stock price drops to reflect that. Figure 10.6 provides a summary of the percentages of all US firms that increased, decreased, or left unchanged their annual dividends per share from 1989 to 2008.

²E. F. Fama and H. Babiak, 1968, “Dividend Policy: An Empirical Analysis,” *Journal of the American Statistical Association*, 63(324), 1132–1161.



Source: Standard & Poor’s.

As you can see, in most years the number of firms that do not change their dollar dividends far exceeds the number that do. Among the firms that change dividends, a much higher percentage, on average, increase dividends than decrease them. Even in 2008, a crisis year by most measures, the number of firms that increased dividends outnumbers the firm that cut dividends.³

Sticky Dividends: A Behavioral Perspective

John Lintner’s study of how firms decide how much to pay in dividends was done more than 50 years ago but the findings have had remarkable durability. His basic conclusions – that firms set target payout ratios, that dividends lag earnings and that dividend changes are infrequent – still characterize how most companies set dividends. Given the volatility in earnings and cash flows at firms, it seems surprising that dividends

³ In the last quarter of 2008, in the midst of the biggest financial market crisis of the last 50 years, 27 firms in the S&P 500 cut dividends (the highest number in a quarter in history) but 32 firms increased dividends.

do not reflect that volatility and that firms do not actively reassess how much they should pay in dividends.

Cyert and March provide an explanation for the Lintner findings, grounded in what they call “uncertainty avoidance”.⁴ They argue that managers attempt to avoid anticipating or forecasting future events by using decision rules that emphasize short-term feedback from the economic environment. Put another way, firms adopt standardized rules that do not eliminate uncertainty but make dealing with it more tractable. In the context of dividend policy, their model predicts that managers will

- a. Set a level of dividends (payout ratios) by looking at industry norms
- b. Focus on changes in dividends in response to changes in earnings.
- c. Use simple rules of thumb on how to adjust dividends, such as raising dividends only if earnings increase 30% or more.
- d. Avoid adjusting dividends in response to changes in stockholder attitudes, if these changes are viewed as short-term changes.

These predictions are well in line with the findings in the Lintner study.

Dividends Follow a Smoother Path than Earnings

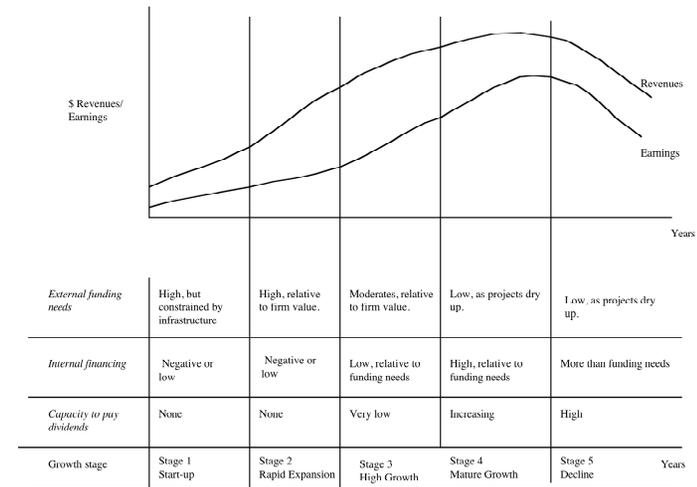
As a result of the reluctance to raise dividends until the firm feels able to maintain them and to cut dividends unless they absolutely have to, dividends follow a much smoother path than earnings. This view that dividends are not as volatile as earnings on a year-to-year basis is supported by a couple of empirical facts. First, the variability in historical dividends is significantly lower than the variability in historical earnings. Using annual data on aggregate earnings and dividends from 1960 to 2008, for instance, the standard deviation of year-to-year changes in dividends is 5.17%, whereas the standard deviation in year-to-year changes in earnings is about 14.69%. Second, the standard deviation in earnings yields across companies is significantly higher than the standard deviation in dividend yields. In other words, the variation in earnings yields across firms is much greater than the variation in dividend yields.

⁴ Cyert, R. and J. March, 1993, *A Behavioral Theory of the Firm*, (Prentice-Hall, Englewood Cliffs, NJ).

A Firm’s Dividend Policy Tends to Follow the Life Cycle of the Firm

In previous chapters, we introduced the link between a firm’s place in the life cycle and its financing mix and choices. In particular, we noted five stages in the growth life cycle—start-up, rapid expansion, high growth, mature growth, and decline. In this section, we will examine the link between a firm’s place in the life cycle and its dividend policy. Not surprisingly, firms adopt dividend policies that best fit where they are currently in their life cycles. For instance, high-growth firms with great investment opportunities do not usually pay dividends, whereas stable firms with larger cash flows and fewer projects tend to pay more of their earnings out as dividends. Figure 10.7 looks at the typical path that dividend payout follows over a firm’s life cycle.

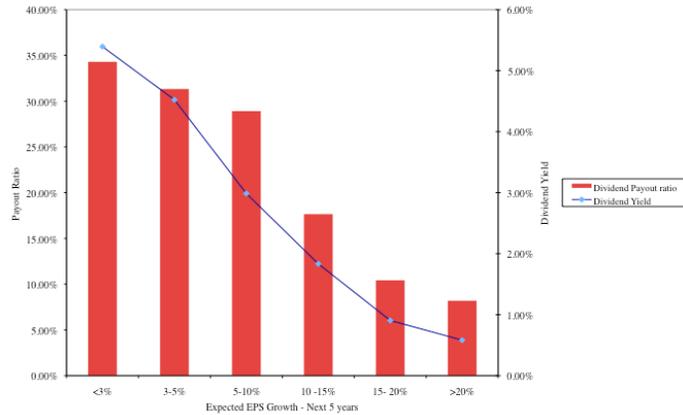
Figure 10.7: Life Cycle Analysis of Dividend Policy



This intuitive relationship between dividend policy and growth is emphasized when we look at the relationship between a firm’s payout ratio and its expected growth rate. For instance, we classified firms on the New York Stock Exchange in January 2009 into six groups, based on analyst estimates of expected growth rates in earnings per share

for the next five years and estimated the dividend payout ratios and dividend yields for each class; these are reported in Figure 10.8.

Figure 10.8: Dividend Yield and Payout Ratio - Growth Class



Source: Value Line Database projected for firms in January 2009

The firms with the highest expected growth rates pay the lowest dividends, both as a percent of earnings (payout ratio) and as a percent of price (dividend yield).⁵

10.3. Dividend Policy at Growth Firms

Assume that you are following a growth firm whose growth rate has begun easing. Which of the following would you most likely observe in terms of dividend policy at the firm?

- An immediate increase of dividends to reflect the lower reinvestment needs
- No change in dividend policy, and an increase in the cash balance
- No change in dividend policy, and an increase in acquisitions of other firms

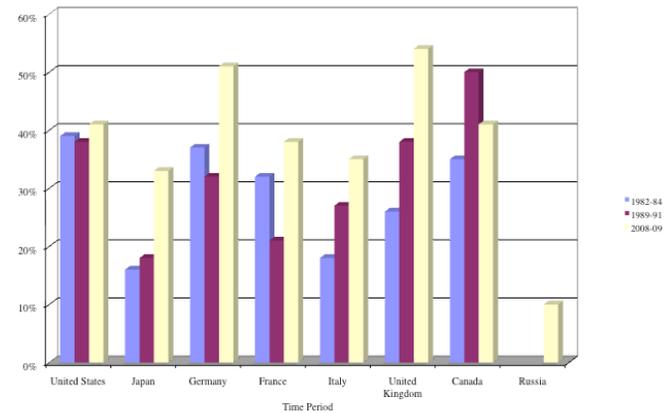
Explain.

⁵These are growth rates in earnings for the next 5 years projected by Value Line for firms in January 2004.

Differences in Dividend Policy across Countries

Figures 10.5 to 10.8 showed several trends and patterns in dividend policies at U.S. companies. They share some common features with firms in other countries, and there are some differences. As in the United States, dividends in other countries are sticky and follow earnings. However, there are differences in the magnitude of dividend payout ratios across countries. Figure 10.9 shows the proportion of earnings paid out in dividends in the G-7 countries in 1982–84 and again in 1989–91, with an update for 2009 values.⁶

Figure 10.9: Dividend Payout Ratios - G7 Countries



Source: Rajan and Zingales.

These differences can be attributed to:

1. *Differences in Stage of Growth:* Just as higher-growth companies tend to pay out less of their earnings in dividends (see Figure 10.8), countries with higher growth pay out less in dividends. For instance, Japan had much higher expected growth in 1982–84 than the

⁶R. Rajan and L. Zingales, 1995, "What Do We Know about Capital Structure? Some Evidence from International Data," *Journal of Finance*, 50, 1421–1460. The 1982-84 and 1989-91 data come from this paper. The update for 2009 is estimated using Capital IQ data from 2009 and we added Russia to the group to reflect its new standing as the G8.

other G-7 countries and paid out a much smaller percentage of its earnings as dividends. As Japan's growth declined, its payout ratio has risen.

2. *Differences in Tax Treatment:* Unlike the United States, where dividends are doubly taxed, some countries provide at least partial protection against the double taxation of dividends. For instance, Germany taxes corporate retained earnings at a higher rate than corporate dividends and the United Kingdom allows investors to offset corporate taxes against taxes due on dividends, thus reducing the effective tax rate on dividends.

3. *Differences in Corporate Control:* When there is a separation between ownership and management, as there is in many large publicly traded firms, and where stockholders have little control over managers, the dividends paid by firms will be lower. Managers, left to their own devices, have an incentive to accumulate cash. Russia, with its abysmal corporate governance system, has a dividend payout ratio of less than 10% in 2009.

Not surprisingly, the dividend payout ratios of companies in most emerging markets are much lower than the dividend payout ratios in the G-7 countries. The higher growth and relative power of incumbent management in these countries contribute to keeping these payout ratios low.

10.4. Dividend Policies and Stock Buyback Restrictions

Some countries do not allow firms to buy back stock from their stockholders. Which of the following would you expect of dividend policies in these countries (relative to countries that don't restrict stock buybacks)?

Higher portion of earnings will be paid out in dividends; more volatile dividends

Lower portion of earnings will be paid out in dividends; more volatile dividends

Higher portion of earnings will be paid out in dividends; less volatile dividends

Lower portion of earnings will be paid out in dividends; less volatile dividends

Explain.

 *countrystats.xls:* There is a data set online that summarizes dividend yields and payout ratios for different markets, globally.

Illustration 10.1 Dividends, Dividend Yields, and Payout Ratios

In this illustration, we will examine the dollar dividends paid at Disney, Aracruz, Tata Chemicals and Deutsche Bank in 2007 and 2008.⁷ For each year we will also compute the dividend yield and dividend payout ratio for each firm.

	Disney		Aracruz		Tata Chemicals		Deutsche Bank	
	2007	2008	2007	2008	2007	2008	2007	2008
Dividends per share	\$0.35	\$0.35	R\$ 0.43	R\$ 0.33	Rs 8.00	Rs 9.00	4.00 €	0.50 €
Earnings per share	\$2.25	\$2.28	R\$ 1.01	-R\$ 4.09	Rs 42.82	Rs 20.65	13.65 €	-7.61 €
Stock price at end of year	\$32.28	\$22.69	R\$ 15.97	R\$ 3.98	Rs 413.05	Rs 165.25	89.47 €	27.83 €
Dividend Yield	1.08%	1.54%	2.69%	8.19%	1.94%	5.45%	4.47%	1.8%
Dividend Payout	15.56%	15.35%	42.43%	-7.97%	18.68%	43.58%	29.30%	-6.57%

Looking across the four companies over the two years, there are some interesting differences that emerge:

- Of the four companies, Deutsche Bank had the highest dividend yield in 2007 but slashed dividends drastically for 2008, as the market crisis unfolded.
- Disney paid the same dividends per share each year and had relatively stable payout ratios and dividend yields over the two periods.
- The payout ratio for Tata Chemicals jumped in 2008, mostly because the stock price dropped by more than 50% during the year.
- Both Deutsche and Aracruz paid dividends in 2008, in spite of negative earnings, a testimonial to the stickiness of dividends.

Aracruz, in particular, will have trouble, maintaining its existing dividends but it is faced with a dilemma that pits control interests against cash flow constraints. As noted earlier in the book, Aracruz, like most Brazilian companies, maintains two classes of shares—voting share (called common and held by insiders) and nonvoting shares (called preferred shares, held by outside investors). The dividend policies are different for the two classes with preferred shares getting higher dividends. In fact, the failure to pay a mandated dividend to preferred stockholders (usually set at a payout ratio of 35 percent) can result in preferred stockholders getting some voting control of the firm. Effectively, this puts a

⁷ The dividends for these years are actually paid in the subsequent years by these companies. Deutsche Bank's dividend of 0.50 Euros per share for 2008 was paid out in May 2009.

floor on the dividend payout ratio unless the voting shareholders are willing to concede control and give voting rights to the preferred shareholders, in return for cutting dividends.

When Are Dividends Irrelevant?

There is a school of thought that argues that what a firm pays in dividends is irrelevant and that stockholders are indifferent about receiving dividends. Like the capital structure irrelevance proposition, the dividend irrelevance argument has its roots in a paper crafted by Miller and Modigliani.⁸

The Underlying Assumptions

The underlying intuition for the dividend irrelevance proposition is simple. Firms that pay more dividends offer less price appreciation but must provide the same total return to stockholders, given their risk characteristics and the cash flows from their investment decisions. Thus, if there are no taxes, or if dividends and capital gains are taxed at the same rate, investors should be indifferent to receiving their returns in dividends or price appreciation.

For this argument to work, in addition to assuming that there is no tax advantage or disadvantage associated with dividends, we also have to assume the following:

- There are no transaction costs associated with converting price appreciation into cash, by selling stock. If this were *not* true, investors who need cash urgently might prefer to receive dividends.
- Firms that pay too much in dividends can issue stock, again with no issuance or transaction costs, and use the proceeds to invest in good projects. Managers of firms that pay too little in dividends do not waste the cash pursuing their own interests (i.e., managers with large surplus cash flows do not use them to invest in bad projects). Consequently, the investment decisions of the firm are unaffected by its dividend decisions, and the firm's operating cash flows are the same no matter which dividend policy is adopted.

⁸M. Miller and F. Modigliani, 1961, "Dividend Policy, Growth and the Valuation of Shares," *Journal of Business*, v34, 411-433.

- There is also an implicit assumption that this stock is fairly priced.

Under these assumptions, neither the firms paying the dividends nor the stockholders receiving them will be adversely affected by firms paying either too little or too much in dividends.

 10.5. Dividend Irrelevance

Based on the Miller-Modigliani assumptions, dividends are least likely to affect value for what types of firms?

- Small companies with substantial investment needs
- Large companies with significant insider holdings
- Large companies with significant holdings by pension funds (which are tax-exempt) and minimal investment needs

Explain.

A Proof of Dividend Irrelevance

To provide a formal proof of irrelevance, assume that LongLast Corporation, an unlevered furniture manufacturing firm, has operating income after taxes of \$100 million, is growing at 5 percent a year, and has a cost of capital of 10 percent. Furthermore, assume that this firm has reinvestment needs of \$50 million, also growing at 5 percent a year, and there are 105 million shares outstanding. Finally, assume that this firm pays out residual cash flows as dividends each year. The value of LongLast can be estimated as follows:

$$\begin{aligned} \text{Free Cash Flow to the Firm} &= \text{EBIT} (1 - \text{Tax Rate}) - \text{Reinvestment Needs} \\ &= \$100 \text{ million} - \$50 \text{ million} = \$50 \text{ million} \end{aligned}$$

$$\text{Value of the Firm} = \frac{\text{FCFF}_0(1+g)}{(\text{Cost of capital} - g)} = \frac{50(1.05)}{(.10 - .05)} = \$1,050 \text{ million}$$

$$\text{Price per Share} = \$1,050 \text{ million} / 105 \text{ million} = \$10.00$$

Based on its cash flows, this firm could pay out \$50 million in dividends.

$$\text{Dividend per Share} = \$50 \text{ million} / 105 \text{ million} = \$0.476$$

$$\text{Total Value per Share} = \$10.00 + \$0.476 = \$10.476$$

The total value per share measures what stockholders gets in price and dividends from their stock holdings.

Scenario 1: LongLast Doubles Dividends

To examine how the dividend policy affects firm value, assume that LongLast is told by an investment banker that its stockholders would gain if the firm paid out \$100 million in dividends instead of \$50 million. It now has to raise \$50 million in new financing to cover its reinvestment needs. Assume that LongLast can issue new stock with *no issuance cost* to raise these funds. If it does so, the firm value will remain unchanged, because the value is determined not by the dividend paid but by the cash flows generated on the projects. Because the growth rate and the cost of capital are unaffected, we get:

$$\text{Value of the Firm} = \frac{\text{FCFF}_0(1+g)}{(\text{Cost of capital} - g)} = \frac{50(1.05)}{(.10 - .05)} = \$1,050 \text{ million}$$

The existing stockholders will receive a much larger dividend per share, because dividends have been doubled:

$$\text{Dividends per share} = \$100 \text{ million}/105 \text{ million shares} = \$0.953$$

To estimate the price per share at which the new stock will be issued, note that after the new stock issue of \$50 million, the old stockholders in the firm will own only \$1,000 million of the total firm value of \$1,050 million.

$$\text{Value of the Firm for Existing Stockholders after Dividend Payment} = \$1,000 \text{ million}$$

$$\text{Price per Share} = \$1,000 \text{ million}/105 \text{ million} = \$9.523$$

The price per share is now lower than it was before the dividend increase, but it is exactly offset by the increase in dividends.

$$\text{Value Accruing to Stockholder} = \$9.523 + \$0.953 = \$10.476$$

Thus, if the operating cash flows are unaffected by dividend policy, we can show that the firm value will be unaffected by dividend policy and that the average stockholder will be indifferent to dividend policy, because he or she receives the same total value (price + dividends) under any dividend payment.

Scenario 2: LongLast Stops Paying Dividends

To consider an alternate scenario, assume that LongLast pays out no dividends and retains the residual \$50 million as a cash balance. The value of the firm to existing stockholders can then be computed as follows:

$$\text{Value of Firm} = \text{Present Value of After-Tax Operating CF} + \text{Cash Balance}$$

$$= \frac{50(1.05)}{(.10 - .05)} + \$50 \text{ million} = \$1,100 \text{ million}$$

$$\text{Value per Share} = \$1,100 \text{ million}/105 \text{ million shares} = \$10.476$$

Note that the total value per share remains at \$10.476. In fact, as shown in Table 10.1, the value per share remains \$10.476 no matter how much the firm pays in dividends.

Table 10.1 Value per Share to Existing Stockholders from Different Dividend Policies

<i>Value of Firm (Operating CF)</i>	<i>Dividends</i>	<i>Value to Existing Stockholders</i>	<i>Price per Share</i>	<i>Dividends per Share</i>	<i>Total Value per Share</i>
\$1,050	\$—	\$1,100	\$10.476	\$-	\$10.476
\$1,050	\$10.00	\$1,090	\$10.381	\$0.095	\$10.476
\$1,050	\$20.00	\$1,080	\$10.286	\$0.190	\$10.476
\$1,050	\$30.00	\$1,070	\$10.190	\$0.286	\$10.476
\$1,050	\$40.00	\$1,060	\$10.095	\$0.381	\$10.476
\$1,050	\$50.00	\$1,050	\$10.000	\$0.476	\$10.476
\$1,050	\$60.00	\$1,040	\$9.905	\$0.571	\$10.476
\$1,050	\$70.00	\$1,030	\$9.810	\$0.667	\$10.476
\$1,050	\$80.00	\$1,020	\$9.714	\$0.762	\$10.476
\$1,050	\$90.00	\$1,010	\$9.619	\$0.857	\$10.476
\$1,050	\$100.00	\$1,000	\$9.524	\$0.952	\$10.476

When LongLast pays less than \$50 million in dividends, the cash accrues in the firm and adds to its value. The increase in the stock price again is offset by the loss of cash flows from dividends. When it pays out more, the price decreases but is exactly offset by the increase in dividends per share.

Note, however, that the value per share remains unchanged because we assume that there are no tax differences to investors between receiving dividends and capital gains, that firms can raise new capital with no issuance costs, and that firms do not change their investment policy even when they have excess cash. These assumptions eliminate the costs associated with paying either more in dividends or less.

Implications of Dividend Irrelevance

If dividends are, in fact, irrelevant, firms are spending a great deal of time pondering an issue about which their stockholders are indifferent. A number of strong implications emerge from this proposition. Among them, the value of equity in a firm should not change as its dividend policy changes. This does not imply that the price per share will be unaffected, however, because larger dividends should result in lower stock prices and more shares outstanding. In addition, in the long run, there should be no correlation between dividend policy and stock returns. Later in this chapter, we will examine some studies that have attempted to examine whether dividend policy is actually irrelevant in practice.

The assumptions needed to arrive at the dividend irrelevance proposition may seem so onerous that many reject it without testing it. That would be a mistake, however, because the argument does contain a valuable message: Namely, a firm that has invested in bad projects cannot hope to resurrect its image with stockholders by offering them higher dividends. Conversely, a firm that has a history of making good investments will be forgiven by stockholders, even if it chooses not to pay out what it can afford to in dividends. This may yield some insight into why investors are much more sanguine about cash being accumulated in some companies than in others.

The “Dividends Are Bad” School

In the United States, dividends have historically been taxed at much higher rates than capital gains. Based on this tax disadvantage, the second school of thought on dividends argued that dividend payments reduce the returns to stockholders after personal taxes. Stockholders, they posited, would respond by reducing the stock prices of the firms making these payments, relative to firms that do not pay dividends. Consequently, firms would be better off either retaining the money they would have paid out as dividends or repurchasing stock. In 2003, the basis for this argument was largely eliminated when the tax rate on dividends was reduced to match the tax rate on capital gains. In this section,

we will consider both the history of tax-disadvantaged dividends and the potential effects of the tax law changes.⁹

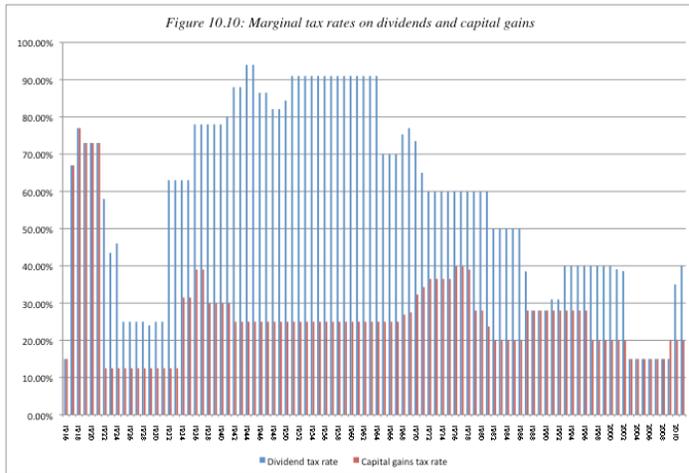
The History of Dividend Taxation

The tax treatment of dividends varies widely depending on who receives the dividend. Individual investors were until 2003 taxed at ordinary tax rates, corporations are sheltered from paying taxes on at least a portion of the dividends they receive, and pension funds are not taxed at all.

Individuals

Since the inception of income taxes in the early twentieth century in the United States, dividends received on investments have been treated as ordinary income when received by individuals and taxed at ordinary tax rates. In contrast, the price appreciation on an investment has been treated as capital gains and taxed at a different and much lower rate. Figure 10.10 graphs the highest marginal tax rate on dividends in the United States and the highest marginal capital gains tax rate since 1954 (when capital gains taxes were introduced).

⁹Adding to the uncertainty is the fact that the tax changes of 2003 are not permanent and are designed to sunset (disappear) in 2010. It is unclear whether the tax disadvantages of dividends have disappeared for the long term or only until 2010.



Barring a brief period after the 1986 tax reform act, when dividends and capital gains were both taxed at 28 percent, the capital gains tax rate has been significantly lower than the ordinary tax rate in the United States. In 2003, the tax rate on dividends was dropped to 15 percent to match the tax rate on capital gains, thus nullifying the tax disadvantage of dividends. However, that change in the tax law is expected to be repealed in 2010, returning the tax rates to pre-2001 numbers.

There are two points worth making about this chart. The first is that these are the highest marginal tax rates and that most individuals are taxed at lower rates. In fact, some older and poorer investors may pay no taxes on income if it falls below the threshold for taxes. The second and related issue is that the capital gains taxes can be higher for some of these individuals than the ordinary tax rate they pay on dividends. Overall, however, wealthier individuals have more invested in stocks than poorer individuals, and it seems fair to conclude that individuals have collectively paid significantly more taxes on the income that they have received in dividends than capital gains profits over the past few decades.

Institutional Investors

About two-thirds of all traded equities are held by institutional investors rather than individuals. These institutions include mutual funds, pension funds, and corporations, and dividends get taxed differently in the hands of each.

- Pension funds are tax-exempt. They are allowed to accumulate both dividends and capital gains without having to pay taxes. There are two reasons for this tax treatment. One is to encourage individuals to save for their retirement and to reward savings (as opposed to consumption). The other reason for this is that individuals will be taxed on the income they receive from their pension plans and that taxing pension plans would in effect tax the same income twice.
- Mutual funds are not directly taxed, but investors in them are taxed for their share of the dividends and capital gains generated by the funds. If high-tax-rate individuals invest in a mutual fund that invests in stocks that pay high dividends, these high dividends will be allocated to the individuals based on their holdings and taxed at their individual tax rates.
- Corporations are given special protection from taxation on dividends they receive on their holdings in other companies, with 70 percent of the dividends exempt from taxes.¹⁰ In other words, a corporation with a 40 percent tax rate that receives \$100 million in dividends will pay only \$12 million in taxes. Here again, the reasoning is that dividends paid by these corporations to their stockholders will ultimately be taxed.

Tax Treatment of Dividends in Other Markets

Many countries have plans in place to protect investors from the double taxation of divided. There are two ways in which they can do this. One is to allow corporations to claim a full or partial tax deduction for dividends paid. The other is to give partial or full tax relief to individuals who receive dividends.

¹⁰The exemption increases as the proportion of the stock held increases. Thus, a corporation that owns 10 percent of another company's stock has 70 percent of dividends exempted. This rises to 80 percent if the company owns between 20 and 80 percent of the stock and to 100 percent if the company holds more than 80 percent of the outstanding stock.

Corporate Tax Relief

In some countries, corporations are allowed to claim a partial or full deduction for dividends paid. This brings their treatment into parity with the treatment of the interest paid on debt, which is entitled to a full deduction in most countries. Among the Organisation for Economic Cooperation and Development (OECD) countries, the Czech Republic and Iceland offer partial deductions for dividend payments made by companies, but no country allows a full deduction. In a variation, Germany until recently applied a higher tax rate to income that was retained by firms than to income that was paid out in dividends. In effect, this gives a partial tax deduction to dividends.

Why don't more countries offer tax relief to corporations? There are two factors. One is the presence of foreign investors in the stock who now also share in the tax windfall. The other is that investors in the stock may be tax-exempt or pay no taxes, which effectively reduces the overall taxes paid on dividends to the treasury to zero.

Individual Tax Relief

There are far more countries that offer tax relief to individuals than to corporations. This tax relief can take several forms:

- *Tax credit for taxes paid by corporation:* Individuals can be allowed to claim the taxes paid by the corporation as a credit when computing their own taxes. In the example earlier, where a company paid 30 percent of its income of \$100 million as taxes and then paid its entire income as dividends to individuals with 40 percent tax rates, the individuals would be allowed to claim a tax credit of \$30 million against the taxes owed, thus reducing taxes paid to \$10 million. In effect, this will mean that only individuals with marginal tax rates that exceed the corporate tax rate will be taxed on dividends. Australia, Finland, Mexico, and New Zealand allow individuals to get a full credit for corporate taxes paid. Canada, France, the United Kingdom, and Turkey allow for partial tax credits.
- *Lower tax rate on dividends:* Dividends get taxed at a lower rate than other income to reflect the fact that it is paid out of after-tax income. In some countries, the tax rate on dividends is set equal to the capital gains tax rate. South Korea, for instance, has a flat tax rate of 16.5 percent for dividend income. This is the path

that the United States chose in 2003 to grant relief from double taxation to stock investors.

In summary, it is far more common for countries to provide tax relief to investors than to corporations. Part of the reason for this is political. By focusing on individuals, you can direct the tax relief only toward domestic investors and only to those investors who pay taxes in the first place.

Timing of Tax Payments

When the 1986 tax reform was signed into law, equalizing tax rates on ordinary income and capital gains, some believed that all the tax disadvantages of dividends had disappeared. Others noted that even with the same tax rates, dividends carried a tax disadvantage because the investor had no choice as to when to report the dividend as income; taxes were due when the firm paid out the dividends. In contrast, investors retained discretionary power over when to recognize and pay taxes on capital gains, because such taxes were not due until the stock was sold. This timing option allowed the investor to reduce the tax liability in one of two ways. First, by taking capital gains in periods of low income or capital losses to offset against the gain, the investor could now reduce the taxes paid. Second, deferring a stock sale until an investor's death could result in tax savings, especially if the investor is not subject to estate taxes.

Assessing Investor Tax Preferences for Dividends

As you can see from the foregoing discussion, the tax rate on dividends can vary widely for different investors—individual, pension fund, mutual fund, or corporation—receiving the dividends and even for the same investor on different investments. It is difficult therefore to look at a company's investor base and determine their preferences for dividends and capital gains. A simple way to measure the tax disadvantage associated with dividends is to measure the price change on the ex-dividend date and compare it to the actual dividend paid. The stock price on the ex-dividend day should drop to reflect the loss in dividends to those buying the stock after that day. It is not clear, however, whether the price drop will be equal to the dividends if dividends and capital gains are taxed at different rates.

To see the relationship between the price drop and the tax rates of the marginal investor, assume that investors in a firm acquired stock at some point in time at a price P , and that they are approaching an ex-dividend day, in which the dividend is known to be D . Assume that each investor in this firm can either sell the stock before the ex-dividend day at a price P_B or wait and sell it after the stock goes ex-dividend at a price P_A . Finally, assume that the tax rate on dividends is t_o and that the tax rate on capital gains is t_{cg} . The cash flows the investor will receive from selling *before* the stock goes ex-dividend is

$$CF_B = P_B - (P_B - P)t_{cg}$$

In this case, by selling before the ex-dividend day, the investor receives no dividend. If the sale occurs *after* the ex-dividend day, the cash flow is

$$CF_A = P_A - (P_A - P)t_{cg} + D(1 - t_o)$$

If the cash flow from selling before the ex-dividend day were greater than the cash flow from selling after for all investors, they would all sell before, resulting in a drop in the stock price. Similarly, if the cash flows from selling after the ex-dividend day were greater than the cash flows from selling before for all investors, every one would sell after, resulting in a price drop after the ex-dividend day. To prevent either scenario, the marginal investors in the stock have to be indifferent between selling before and after the ex-dividend day. This will occur only if the cash flows from selling before are equal to the cash flows from selling after:

$$P_B - (P_B - P)t_{cg} = P_A - (P_A - P)t_{cg} + D(1 - t_o)$$

This can be simplified to yield the following ex-dividend day equality:

$$\frac{P_B - P_A}{D} = \frac{(1 - t_o)}{(1 - t_{cg})}$$

Thus, a necessary condition for the marginal investor to be indifferent between selling before and after the ex-dividend day is that the price drop on the ex-dividend day must reflect the investor's tax differential between dividends and capital gains.

By turning this equation around, we would argue that by observing a firm's stock price behavior on the ex-dividend day and relating it to the dividends paid by the firm; we can, in the long run, form some conclusions about the tax disadvantage the firm's stockholders attach to dividends. In particular:

<i>If</i>	<i>Tax Treatment of Dividends and Capital Gains</i>
$P_B - P_A = D$	Marginal investor is indifferent between dividends and capital gains
$P_B - P_A < D$	Marginal investor is taxed more heavily on dividends
$P_B - P_A > D$	Marginal investor is taxed more heavily on capital gains

Although there are obvious measurement problems associated with this measure, it does provide some interesting insight into how investors view dividends.

The first study of ex-dividend day price behavior was completed by Elton and Gruber in 1970.¹¹ They examined the behavior of stock prices on ex-dividend days for stocks listed on the NYSE between 1966 and 1969. Based on their finding that the price drop was only 78 percent of the dividends paid, Elton and Gruber concluded that dividends are taxed more heavily than capital gains. They also estimated the price change as a proportion of the dividend paid for firms in different dividend yield classes and reported that price drop is larger, relative to the dividend paid, for firms in the highest dividend yield classes than for firms in lower dividend yield classes. This difference in price drops, they argued, reflected the fact that investors in these firms are in lower tax brackets. Their conclusions were challenged, however, by some who argued justifiably that the investors trading on the stock on ex-dividend days are not the normal investors in the firm; rather, they are short-term, tax-exempt investors interested in capturing the difference between dividends and the price drops.

Implications

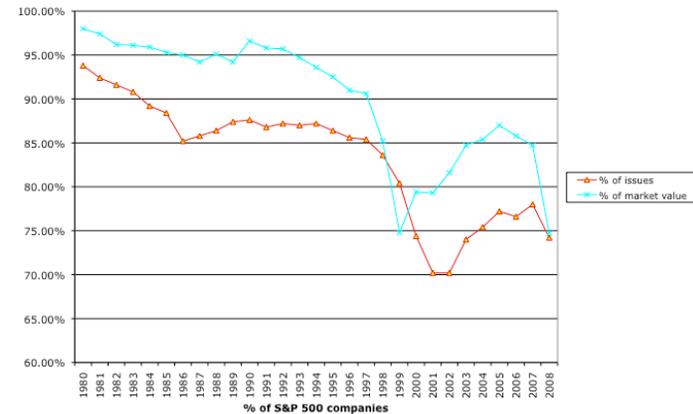
There is no argument that dividends have historically been treated less favorably than capital gains by the tax authorities. In the United States, the double taxation of dividends, at least at the level of individual investors, should have created a strong disincentive to pay or to increase dividends. Other implications of the tax disadvantage argument include the following:

¹¹E. J. Elton and M. J. Gruber, 1970, "Marginal Stockholder Rates and the Clientele Effect," *Review of Economics and Statistics*, 52, 68-74.

- Firms with an investor base composed primarily of individuals typically should have paid lower dividends than do firms with investor bases predominantly made up of tax-exempt institutions.
- The higher the income level (and hence the tax rates) of the investors holding stock in a firm, the lower the dividend paid out by the firm.
- As the tax disadvantage associated with dividends increased, the aggregate amount paid in dividends should have decreased. Conversely, if the tax disadvantage associated with dividends decreased, the aggregate amount paid in dividends should have increased.

The tax law changes of 2003 changed the terms of this debate, at least for the short term. By reducing the tax rate on dividends, they made dividends more attractive at least to individual investors than they were prior to the change. We would expect companies to pay more dividends in response and there is some evidence that companies changed dividend policy in response to the tax law change. Technology companies like Microsoft that had never paid dividends before have initiated dividends. In Figure 10.11, we look at the percent of S&P 500 companies that pay dividends by year and the at the market capitalization of dividend payers as a percent of the market capitalization of the S&P 500 from 1960 to 2008.

Figure 10.11: Dividends on S&P 500 Companies



There was an uptick in both the number of companies paying dividends in 2003 and the dividends paid, reversing a long decline in both statistics. However, dividends leveled off after 2004 and companies continued the trend of shifting towards stock buybacks and the market crisis of 2008 resulted in a reversal of much of the post-2003 gain in dividends.

In Practice: From sticky to flexible dividend payouts

When firms increase dividends, the biggest peril that they face is being unable to sustain these dividends, given volatile earnings. In other words, the inability to cut dividends acts as an impediment to initiating and increasing dividends in the first place. There are two ways that firms can alleviate the problem of “sticky dividends”.

- One is to shift to a policy of *residual dividends*, where dividends paid are a function of the earnings in the year rather than a function of dividends last year. Note that the sticky dividend phenomenon in the United States, where companies are reluctant to change their dollar dividends, is not universal. In countries like Brazil, companies target dividend payout ratios rather than dollar dividends and there is no reason why U.S. companies cannot adopt a similar practice. A firm that targets a constant dividend payout ratio will pay more dividends when its earnings are high and less

when its earnings are low, and the signaling effect of lower dividends will be mitigated if the payout policy is clearly stated up front.

- The other option is to adopt a policy of regular dividends that will be based on sustainable and predictable earnings and to supplement these with special dividends when earnings are high. In this form, the special dividends will take the place of stock buybacks.

In summary, we should expect to see more creative dividend policies, in the face of increased uncertainty about future earnings and cash flows. In 2004, British Petroleum provided a preview of innovations to come by announcing that they would supplement their regular dividends with any extra cash flows generated if the oil price stayed above \$30 a barrel, thus creating dividends that are tied more closely to their cash flows.

10.6. Corporate Tax Status and Dividend Policy

Corporations are exempt from paying taxes on 70 percent of the dividends they receive from their stock holdings in other companies, whereas they face a capital gains tax rate of 20 percent. If all the stock in your company is held by other companies, and the ordinary tax rate for companies is 36 percent,

- dividends have a tax advantage relative to capital gains.
- capital gains have a tax advantage relative to dividends.
- dividends and capital gains are taxed at the same rate.

Explain.

The “Dividends Are Good” School

Notwithstanding the tax disadvantages, firms continue to pay dividends and many investors view such payments positively. A third school of thought that argues dividends are good and can increase firm value. Some of the arguments used are questionable, but some have a reasonable basis in fact. We consider both in this section.

Some Reasons for Paying Dividends that Do Not Measure Up

Some firms pay and increase dividends for the wrong reasons. We will consider two of those reasons in this section.

The Bird-in-the-Hand Fallacy

One reason given for the view that investors prefer dividends to capital gains is that dividends are certain, whereas capital gains are uncertain. Proponents of this view of dividend policy feel that risk-averse investors will therefore prefer the former. This argument is flawed. The simplest response is to point out that the choice is not between certain dividends today and uncertain capital gains at some unspecified point in the future but between dividends today and an almost equivalent amount in price appreciation today. This comparison follows from our earlier discussion, where we noted that the stock price dropped by slightly less than the dividend on the ex-dividend day. By paying the dividend, the firm causes its stock price to drop today.

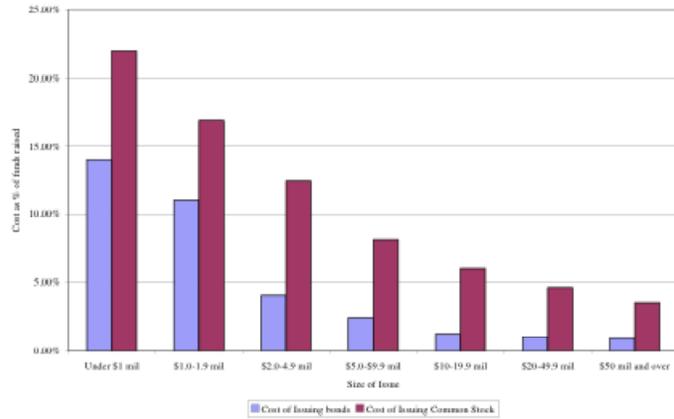
Another response to this argument is that a firm’s value is determined by the cash flows from its projects. If a firm increases its dividends but its investment policy remains unchanged, it will have to replace the dividends with new stock issues. The investor who receives the higher dividend will therefore find him- or herself losing, in present value terms, an equivalent amount in price appreciation.

Temporary Excess Cash

In some cases, firms are tempted to pay or initiate dividends in years in which their operations generate excess cash. Although it is perfectly legitimate to return excess cash to stockholders, firms should also consider their own long-term investment needs. If the excess cash is a temporary phenomenon, resulting from having an unusually good year or a nonrecurring action (such as the sale of an asset), and the firm expects cash shortfalls in future years, it may be better off retaining the cash to cover some or all these shortfalls. Another option is to pay the excess cash as a dividend in the current year and issue new stock when the cash shortfall occurs. The substantial expense associated with new security issues makes this a costly strategy in the long run. Figure 10.12 summarizes the cost of issuing bonds and common stock by size of issue in the United States.¹²

¹²R. G. Ibbotson, J. L. Sindelar, and J. R. Ritter, 1988, “Initial Public Offerings,” *Journal of Applied Corporate Finance*, 1(2), 37–45.

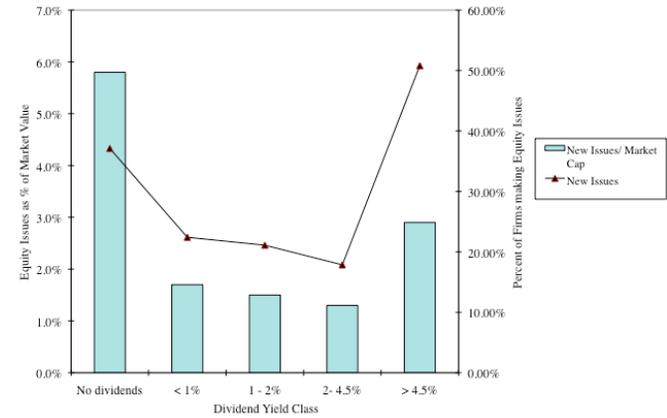
Figure 10.12: Issuance Costs for Stocks and Bonds



Source: Ibbotson, Sindelar, and Ritter.

Because issuance costs increase as the size of the issue decreases and for common stock issues, small firms should be especially cautious about paying out temporary excess cash as dividends. This said, it is important to note that some companies do pay dividends and issue stock during the course of the same period, mostly out of a desire to maintain their dividends. Figure 10.13 reports new stock issues by firms as a percentage of firm value, classified by their dividend yields, between 2005 and 2007.

Figure 10.13: Equity Issues by Dividend Class, United States - 2005-2007



Source: Compustat database, 1998.

Although it is not surprising that stocks that pay no dividends are most likely to issue stock, it is surprising that firms in the highest dividend yield class also issue significant proportions of new stock (approximately half of all the firms in this class also make new stock issues). This suggests that many of these firms are paying dividends on the one hand and issuing stock on the other, creating significant issuance costs for their stockholders in the process.

Some Good Reasons for Paying Dividends

Although the tax disadvantages of dividends were clear before 2003, especially for individual investors, there were some good reasons why firms that were paying dividends during the prior years did not suspend them. First, some investors liked to receive dividends and did not care about the tax disadvantage, either because they paid no or very low taxes or because they needed the regular cash flows. Firms that had paid dividends over long periods were likely to have accumulated investors with these

characteristics, and cutting or eliminating dividends would not have been viewed favorably by this group.

Second, changes in dividends allow firms to signal to financial markets how confident they feel about future cash flows. Firms that are more confident about their future are therefore more likely to raise dividends; stock prices often increase in response. Cutting dividends is viewed by markets as a negative signal about future cash flows, and stock prices often decline in response. Third, firms can use dividends as a tool for altering their financing mix and moving closer to an optimal debt ratio. Finally, the commitment to pay dividends can help reduce the conflicts between stockholders and managers by reducing the cash flows available to managers.

Some Investors Like Dividends

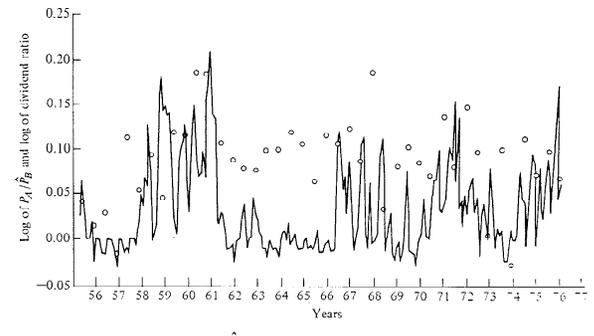
Prior to the tax law change in 2003, many in the “dividends are bad” school of thought argued that rational investors should have rejected dividends due to their tax disadvantage. Whatever you might have thought of the merits of that argument, some investors had a strong preference for dividends and viewed large dividends positively. The most striking empirical evidence for this came from studies of companies that had two classes of shares: one that paid cash dividends, and another that paid an equivalent amount of stock dividends; thus, investors are given a choice between dividends and capital gains.

In 1978, John Long studied the price differential on Class A and B shares traded on Citizens Utility.¹³ Class B shares paid a cash dividend, and Class A shares paid an equivalent stock dividend. Moreover, Class A shares could be converted at little or no cost to Class B shares at the option of its stockholders. Thus, an investor could choose to buy Class B shares to get cash dividends or Class A shares to get an equivalent capital gain. During the period of this study, the tax advantage was clearly on the side of capital gains; thus, we would expect to find Class B shares selling at a discount on Class A shares. The study found, surprisingly, that the Class B shares sold at a premium over

¹³John B. Long Jr., 1978, “The Market Valuation of Cash Dividends: A Case to Consider,” *Journal of Financial Economics*, 6(2/3), 235–264.

Class A shares. Figure 10.14 reports the price differential between the two share classes over the period of the analysis.

Figure 10.14 Price Differential on Citizens Utility Stock



Source: Long (1978).

Although it may be tempting to attribute this phenomenon to the irrational behavior of investors, such is not the case. Not all investors liked dividends—many felt its tax burden—but there were also many who viewed dividends positively. These investors may not have been paying much in taxes and consequently did not care about the tax disadvantage associated with dividends. Or they might have needed and valued the cash flow generated by the dividend payment. Why, you might ask, did they not sell stock to raise the cash flow they needed? The transaction costs and the difficulty of breaking up small holdings and selling unit shares may have made selling small amounts of stock infeasible.¹⁴

¹⁴Consider a stockholder who owns 100 shares trading at \$20 per share, on which she receives a dividend of \$0.50 per share. If the firm did not pay a dividend, the stockholder would have to sell 2.5 shares of stock to raise the \$5 that would have come from the dividend.

Bailey extended Long's study to examine Canadian utility companies, which also offered dividend and capital gains shares, and had similar findings.¹⁵ Table 10.2 summarizes the price premium at which the dividend shares sold.

Table 10.2 Price Differential between Cash and Stock Dividend Shares

Company	Premium on Cash Dividend Shares over Stock Dividend Shares
Consolidated Bathurst	19.30%
Donfasco	13.30%
Dome Petroleum	0.30%
Imperial Oil	12.10%
Newfoundland Light & Power	1.80%
Royal Trustco	17.30%
Stelco	2.70%
TransAlta	1.10%
Average	7.54%

Source: Bailey (1988).

Note once again that on average the cash dividend shares sell at a premium of 7.5 percent over the stock dividend shares. We caution that although these findings do not indicate that *all* stockholders like dividends, they do indicate that the stockholders in these specific companies liked cash dividends so much that they were willing to overlook the tax disadvantage that existed during the period and paid a premium for shares that offered them.



Why do some investors like dividends? A Behavioral Perspective

Until the tax law was changed in 2003, dividends were taxed at much higher tax rates than capital gains. In fact, in most corporate finance books written in the 1970s and 1980s, the chapter on dividend policy was titled "The Dividend Puzzle". Rational investors, it was argued, would prefer that firms buy back stock (rather than pay

¹⁵W. Bailey, 1988, "Canada's Dual Class Shares: Further Evidence on the Market Value of Cash

dividends) and rational managers would oblige by eliminating dividends. Notwithstanding this argument, firms that had paid dividends in the past continued to do so, with little or no opposition from their stockholders. With the rise of behavioral finance, there have been attempts to explain the "irrational" liking for dividends manifested by some investors. Shefrin and Statman (1984) provide three possible explanations for why investors may like dividends:¹⁶

- a. **Absence of self control:** To the extent that investors have trouble controlling consumption and resisting temptation, they look for simple rules that prevent them from indulgence. One simple rule with stocks that protects investors from overspending may be to consume the dividend but leave the principal untouched.
- b. **Mental Accounting:** With some utility functions, the utility gained by investors from a gain that is broken down into dividends and capital gains may be greater than the utility from the same gain, if delivered entirely as a capital gain. For instance, investors may get more utility when they receive \$ 1 in dividends and \$ 4 in capital gains than from a capital gain of \$5.
- c. **Regret avoidance:** Investors regret mistakes, but they regret errors of commission more than errors of omission. An investor who buys a non-dividend stock that goes down may be forced to sell the stock to generate cash, and is thus forced to confront his or her error. In contrast, an investor who buys a dividend paying stock that goes down may be able to get by without selling the stock and feels less regret

Shefrin and Statman are not claiming that all investors are susceptible to these phenomena but even if a subset of investors are, they will like dividends, tax disadvantages notwithstanding.

The Clientele Effect

Stockholders examined in the studies just described clearly like cash dividends. At the other extreme are companies that pay no dividends, whose stockholders seem perfectly content with that policy. Given the vast diversity of stockholders, it is not

Dividends," *Journal of Finance*, 43(5), 1143-1160.

¹⁶ Shefrin, H. and M. Statman, 1984, Explaining investor preference for cash dividends, *Journal of Financial Economics*, v13, 253-282.

surprising that over time, investors tended to invest in firms whose dividend policies matched their preferences. Stockholders in high tax brackets who did not need the cash flow from dividend payments tended to invest in companies that paid low or no dividends. By contrast, those in low tax brackets who needed the cash from dividend payments, and tax-exempt institutions that needed current cash flows, invested in companies with high dividends. This clustering of stockholders in companies with dividend policies that match their preferences is called the *clientele effect*.

The existence of a clientele effect is supported by empirical evidence. One study looked at the portfolios of 914 investors to see whether they were affected by their tax brackets. The study found that older and poorer investors were more likely to hold high-dividend-paying stocks than were younger and wealthier investors.

In another study, dividend yields were regressed against the characteristics of the investor base of a company (including age, income, and differential tax rates).¹⁷

$$\text{Dividend Yield}_i = a + b \beta_i + c \text{Age}_i + d \text{Income}_i + e \text{Differential Tax Rate}_i + \epsilon_i$$

Variable	Coefficient	Implies
Constant	4.22%	
Beta coefficient	-2.145	Higher beta stocks pay lower dividends.
Age/100	3.131	Firms with older investors pay higher dividends.
Income/1,000	-3.726	Firms with wealthier investors pay lower dividends.
Differential tax rate	-2.849	If ordinary income is taxed at a higher rate than capital gains, the firm pays less dividends.

Source: Pettit (1977).

Not surprisingly, this study found that safer companies, with older and poorer investors, tended to pay more in dividends than companies with wealthier and younger investors. Overall, dividend yields decreased as the tax disadvantage of dividends increased.

¹⁷R. R. Pettit, 1977, "Taxes, Transactions Costs and the Clientele Effect of Dividends," *Journal of Financial Economics*, 5, 419-436.

 **10.7. Dividend Clientele and Tax-Exempt Investors**

Pension funds are exempt from paying taxes on either ordinary income or capital gains and also have substantial ongoing cash flow needs. What types of stocks would you expect these funds to buy?

- Stocks that pay high dividends
- Stocks that pay no or low dividends

Explain.

Consequences of the Clientele Effect

The existence of a clientele effect has some important implications. First, it suggests that firms get the investors they deserve, because the dividend policy of a firm attracts investors who like it. Second, it means that firms will have a difficult time changing an established dividend policy, even if it makes complete sense to do so. For instance, U.S. telephone companies have traditionally paid high dividends and acquired an investor base that liked these dividends. In the 1990s, many of these firms entered new businesses (entertainment, multimedia, etc.), with much larger reinvestment needs and less stable cash flows. Although the need to cut dividends in the face of the changing business mix might seem obvious, it was nevertheless a hard sell to stockholders, who had become used to the dividends.

The clientele effect also provides an alternative argument for the irrelevance of dividend policy, at least when it comes to valuation. In summary, if investors migrate to firms that pay the dividends that most closely match their needs, no firm's value should be affected by its dividend policy. Thus, a firm that pays no or low dividends should not be penalized for doing so, because its investors *do not want* dividends. Conversely, a firm that pays high dividends should not have a lower value, because its investors like dividends. This argument assumes that there are enough investors in each dividend clientele to allow firms to be fairly valued, no matter what their dividend policy.

Empirical Evidence on the Clientele Effect

If there is a strong enough clientele effect, the returns on stocks should not be affected over long periods by the dividend payouts of the underlying firms. If there is a

tax disadvantage associated with dividends, the returns on stocks that pay high dividends should be higher than the returns on stocks that pay low dividends to compensate for the tax differences. Finally, if there is an overwhelming preference for dividends, these patterns should be reversed.

In their study of the clientele effect, Black and Scholes created twenty-five portfolios of NYSE stocks, classifying firms into five quintiles based on dividend yield, and then subdivided each group into five additional groups based on risk (beta) each year for thirty-five years, from 1931 to 1966.¹⁸ When they regressed total returns on these portfolios against the dividend yields, the authors found no statistically significant relationship between them. These findings were contested in a study in 1979 by Litzenberger and Ramaswamy, who used updated dividend yields every month and examined whether the total returns in ex-dividend months were correlated with dividend yields.¹⁹ They found a strong *positive* relationship between total returns and dividend yields, supporting the hypothesis that investors are averse to dividends. They also estimated that the implied tax differential between capital gains and dividends was approximately 23 percent. Miller and Scholes countered by arguing that this finding was contaminated by the stock price effects of dividend increases and decreases.²⁰ In response, Litzenberger and Ramaswamy removed from the sample all cases in which the dividends were declared and paid in the same month and concluded that the implied tax differential was only 4 percent, which was not significantly different from zero.

In the interest of fairness, we should point out that most studies of the clientele effect have concluded that total returns and dividend yields are positively correlated. Although many of them contend that this is true because the implied tax differential between dividends and capital gains is significantly different from zero, there are alternative explanations for the phenomena. In particular, although one may disagree with Miller and Scholes's conclusions, their argument—that the higher returns on stocks that

¹⁸F. Black, F. and M. Scholes, 1974, "The Effects of Dividend Yield and Dividend Policy on Common Stock Prices and Returns," *Journal of Financial Economics*, 1, 1–22.

¹⁹R. H. Litzenberger and K. Ramaswamy, 1979, "The Effect of Personal Taxes and Dividends on Capital Asset Prices: Theory and Empirical Evidence," *Journal of Financial Economics*, 7, 163–196.

²⁰M. H. Miller and M. S. Scholes, 1978, "Dividends and Taxes," *Journal of Financial Economics*, 6(4), 333–364.

pay high dividends might have nothing to do with the tax disadvantages associated with dividends but may instead be a reflection of the price increases associated with unexpected dividend increases—has both a theoretical and an empirical basis.

 **10.8. Dividend Clientele and Changing Dividend Policy**

Phone companies in the United States have for long had the following features: They are regulated, have stable earnings, low reinvestment needs and pay high dividends. Many of these phone companies are now considering entering the multimedia age and becoming entertainment companies, which requires more reinvestment and creates more volatility in earnings. If you were the CEO of the phone company, would you

- announce an immediate cut in dividends as part of a major capital investment plan?
- continue to pay high dividends, and use new stock issues to finance the expansion?
- do something else?

Explain.

Dividends Operate as an Information Signal

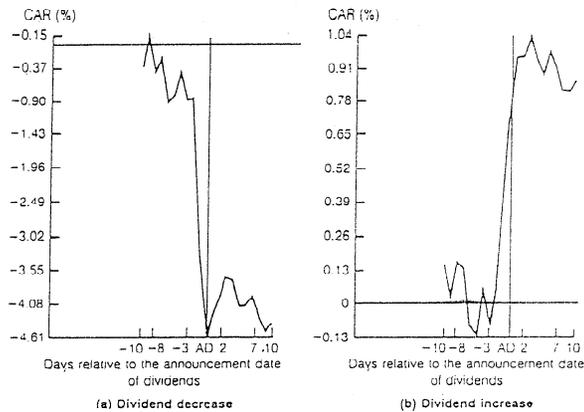
Financial markets examine every action a firm takes for implications for future cash flows and firm value. When firms announce changes in dividend policy, they are conveying information to markets, whether or not they intend to do so.

Financial markets tend to view announcements made by firms about their future prospects with a great deal of skepticism, because firms routinely make exaggerated claims. At the same time, some firms with good investment prospects are undervalued by markets. How do such firms convey information credibly to markets? Signaling theory suggests that these firms need to take actions that cannot be easily imitated by firms without good projects. Increasing dividends is viewed as one such action. By increasing dividends, firms create a cost to themselves, because they commit to paying these dividends in the long run. Their willingness to make this commitment indicates to investors that they believe they have the capacity to generate these cash flows in the long run. This positive signal should therefore lead investors to reevaluate the cash flows and firm values and increase the stock price.

Decreasing dividends is a negative signal, largely because firms are reluctant to cut dividends. Thus, when a firm takes this action, markets see it as an indication that this firm is in substantial, long-term financial trouble. Consequently, such actions lead to a drop in stock prices.

The empirical evidence concerning price reactions to dividend increases and decreases is consistent, at least on average, with this signaling theory. Figure 10.15 summarizes the average excess returns around dividend changes for firms.²¹

Figure 10.15 Excess Returns around Announcements of Dividend Changes



Source: Aharony and Swary.

We should view this explanation for dividend increases and decreases cautiously, however. Although it is true that firms with good projects may use dividend increases to convey information to financial markets, is it the most efficient way? For smaller firms, which have relatively few signals available to them, the answer might be yes. For larger firms, which have many ways of conveying information to markets, dividends might not

²¹J. Aharony and I. Swary, 1981, "Quarterly Dividends and Earnings Announcements and Stockholders' Returns: An Empirical Analysis," *Journal of Finance*, 36, 1-12.

be the least expensive or the most effective signals. For instance, information may be more effectively and economically conveyed through an analyst report on the company.

There is another reason for skepticism. An equally plausible story can be told about how an increase in dividends sends a negative signal to financial markets. Consider a firm that has never paid dividends in the past but has registered extraordinary growth and high returns on its projects. When this firm first starts paying dividends, its stockholders may consider this an indication that the firm's projects are neither as plentiful nor as lucrative as they used to be. However, Palepu and Healy found that the initiation of dividends does not signal a decline in earnings growth in a study of 151 firms from 1970 to 1979.²²

10.9. Dividends as Signals

Silicon Electronics, a company with a history of not paying dividends, high earnings growth, and reinvestment back into the company, announces that it will be initiating dividends. You would expect the stock price to

- go up.
- go down.
- remain unchanged.

Explain.

Dividend Policy Is a Tool for Changing Financing Mix

Dividend policy cannot be analyzed in a vacuum. Firms can use dividend policy as a tool to change their debt ratios. We previously examined how firms that want to increase or decrease leverage can do so by changing their dividend policy: increasing dividends increases financial leverage over time, and decreasing dividends reduces leverage.

When dividends increase, stockholders sometimes get a bonus in the form of a wealth transfer from lenders to the firm. Lenders would rather have firms accumulate cash than pay it out as dividends. The payment of dividends takes cash out of the firm,

²²K. Palepu and P. Healy, 1988, "Earnings Information Conveyed by Dividend Initiations and Omissions," *Journal of Financial Economics*, 21, 149-175.

and this cash could have been used to cover outstanding interest or principal payments. Not surprisingly, bond prices decline on the announcement of large increases in dividends. It is equity investors who gain from the loss in market value faced by bondholders. Bondholders, of course, try to protect themselves against this loss by restricting how much firms can pay out in dividends.



A Catering Explanation for Dividends: A Behavioral Perspective

In conventional corporate finance, firms trade off the costs of paying dividends (the differential tax costs to their investors, the issuance costs of new financing) against the benefits of dividends (signaling benefits and reduced agency costs) to determine whether they should pay dividends. Baker and Wurgler offer an alternative explanation where firms cater to the investor desire for dividends. Looking at the time period between 1963 and 2000, they use the difference between the market to book ratios of dividend payers and dividend non-payers as a measure of investor demand for dividends; when investors, in the aggregate, like dividends, dividend payers trade at a premium over non-payers, and when investors do not want dividends, dividend payers trade at a discount. They find that the dividends paid by firms can be better explained by investor demand for dividends, with more firms paying dividends when dividend payers trade at a premium, and fewer firms paying dividends when dividend payers trade at a discount.

The catering rationale for dividends is more an explanation for how firms set dividends in the aggregate and less about dividend policy in individual firms, but it does point to an important. Investor preferences for dividends shift over time and firms have to respond to changes in these preferences. Managers, when setting dividend policy, have to be aware not only of what investors, in the aggregate, think about dividends but also of what investors in their firm think about dividends. It would seem to use that the catering explanation is a dynamic version of the clientele story, where the preferences for dividends on the part of investors in a firm can change over time, and dividend policy has to change with it.

Managerial Interests and Dividend Policy

We have considered dividend policy almost entirely from the perspective of equity investors in the firm. In reality, though, managers set dividend policy, and it should come as no surprise that there may be a potential for a conflict of interests between stockholders and managers.

The Source of the Conflict

When examining debt policy, we noted that one reason for taking on more debt was to induce managers to be more disciplined in their project choices. Implicit in this free cash flow argument is the assumption that accumulated cash, if left to the discretion of the managers of the firm, would be wasted on poor projects. If this is true, we can argue that forcing a firm to make a commitment to pay dividends provides an alternative way of forcing managers to be disciplined in project choice by reducing the cash that is available for discretionary uses.

If this is the reason stockholders want managers to commit to paying larger dividends, firms in which there is a clear separation between ownership and management, should pay larger dividends than should firms with substantial insider ownership and involvement in managerial decisions.

What Do Managers Believe about Dividend Policy?

Given the pros and cons for paying dividends and the lack of a consensus on the effect of dividends on value, it is worth considering what managers factor in when they make dividend decisions. Baker, Farrelly, and Edelman (1985) surveyed managers on their views on dividend policy and reported the level of agreement with a series of statements.²³ Table 10.3 summarizes their findings.

Table 10.3 Management Beliefs about Dividend Policy

<i>Statement of Management Beliefs</i>	<i>Agree</i>	<i>No Opinion</i>	<i>Disagree</i>
1. A firm's dividend payout ratio affects the price of the stock.	61%	33%	6%

²³ Baker, H. Kent, Gail E. Farrelly and Richard B. Edelman, 1985, "A Survey Of Management Views On Dividend Policy," *Financial Management*, v14(3), 78-84.

2. Dividend payments provide a signaling device of future prospects.	52%	41%	7%
3. The market uses dividend announcements as information for assessing firm value.	43%	51%	6%
4. Investors have different perceptions of the relative riskiness of dividends and retained earnings.	56%	42%	2%
5. Investors are basically indifferent with regard to returns from dividends and capital gains.	6%	30%	64%
6. A stockholder is attracted to firms that have dividend policies appropriate to the stockholder's tax environment.	44%	49%	7%
7. Management should be responsive to shareholders' preferences regarding dividends.	41%	49%	10%

It is quite clear from this survey that, rightly or wrongly, managers believe that their dividend payout ratios affect firm value and operate as signals of future prospects. They also operate under the presumption that investors choose firms with dividend policies that match their preferences and that management should be responsive to their needs.

In an updated and comprehensive survey of dividend policy published in 2004,²⁴ Brav, Graham, Harvey, and Michaely conclude that management's focus is not on the level of dividends but on changes in these dividends. Indicating a shift from views in prior studies, many managers in this survey saw little gain from increasing dividends, even in response to higher earnings and preferred stock buybacks instead. In fact, many managers in companies that paid dividends regret the level of dividends paid by their firms, indicating that they would have set the dividend at a much lower level if they had the choice. In contrast to the survey quoted in the last paragraph, managers also rejected the idea that dividends operate as useful financial signals. From the survey, the authors conclude that the rules of the game for dividends are the following: do not cut dividends,

²⁴A. Brav, J. R. Graham, C. R. Harvey, and R. Michaely, 2004, "Payout Policy in the 21st Century," Working Paper, Duke University, Durham, NC.

have a dividend policy similar to your peer group, preserve a good credit rating, maintain flexibility, and do not take actions that reduce earnings per share.

10.10. Corporate Governance and Dividend Policy

In countries where stockholders have little or no control over incumbent managers, you would expect dividends paid by companies to be

- lower than dividends paid in other countries.
- higher than dividends paid in other countries.
- about the same as dividends paid in other countries.



Managerial Traits and Dividends: A Behavioral Perspective

Managers have the discretion to determine how much a firm pays as dividends. Not surprisingly, managerial traits play a role in how much dividends get paid in the first place and, by extension, how much cash is accumulated. In particular, studies indicate that the following factors affect dividend policy:

- Managerial over confidence:** A common theme across all aspects of corporate finance is that the decisions made by managers can be affected by their confidence. In addition to borrowing too much money, issuing too little new equity, over estimating the cash flows and benefits from acquisitions and investing in too many projects, over confident managers also tend to pay too little in dividends. Dividend payout ratios at firms run by overconfident CEOs are lower than otherwise similar firms run by less confident CEOs.
- Conservative vs Aggressive managers:** To examine how managerial style affects corporate finance decisions, Schoar and Bertrand tracked 500 top managers as they moved across firms to see how much their styles affected policy. They find that management predispositions follow them from firm to firm. In other words, CEOs that were acquirers at one firm brought that acquisitive streak to the next firm that they moved on to. Looking at dividend policy, they noted that conservative managers tended to pay less dividends and accumulate more cash than aggressive managers at firms with similar characteristics. As an aside, they find that managers with earlier

birth cohorts are more conservative than other managers and that executives with MBAs are more aggressive than executives without.

The bottom line is that dividend policy is set by managers, some of whom are more willing to pay out dividends than others.

Conclusion

There are three schools of thought on dividend policy. The first is that dividends are neutral and neither increase nor decrease value. Stockholders are therefore indifferent between receiving dividends and enjoying price appreciation. This view is based on the assumptions that there are no tax disadvantages to investors associated with receiving dividends, relative to capital gains, and that firms can raise external capital for new investments without issuance costs.

The second view is that dividends destroy value for stockholders because they are taxed at much higher rates than capital gains. Until the tax code was changed in 2003, the evidence for this tax disadvantage was strong both in the tax code and in markets, when we examine how stock prices change on ex-dividend days. On average, stock prices decline by less than the amount of the dividend, suggesting that stockholders in most firms consider dividends to be less attractive than equivalent capital gains.

The third school of thought makes the argument that dividends can be value increasing, at least for some firms. In particular, firms that have accumulated stockholders who prefer dividends to capital gains should continue to pay large, increasing dividends to keep their investor clientele happy. Furthermore, increasing dividends can operate as a positive signal to financial markets and allow a firm to change its financing mix over time. Finally, forcing firms to pay out dividends reduces the cash available to managers for new investments. If managers are not investing with the objective of maximizing stockholder wealth, this can make stockholders better off.

Live Case Study

The Trade-Off on Dividend Policy

Objective To examine how much cash your firm has returned to its stockholders and in what form (dividends or stock buybacks) and to evaluate whether the trade-off favors returning more or less.

Key Questions

- Has this firm ever paid out dividends? If yes, is there a pattern to the dividends over time?
- Given this firm's characteristics today, do you think that this firm should be paying more dividends, less dividends, or no dividends at all?

Framework for Analysis

1. Historical Dividend Policy

- How much has this company paid in dividends over the past few years?
- How have these dividends related to earnings in these years?

2. Firm Characteristics

- How easily can the firm convey information to financial markets? In other words, how necessary is it for them to use dividend policy as a signal?
- Who are the marginal stockholders in this firm? Do they like dividends or would they prefer stock buybacks?
- How well can this firm forecast its future financing needs? How valuable is preserving flexibility to this firm?
- Are there any significant bond covenants that you know of that restrict the firm's dividend policy?
- How does this firm compare with other firms in the sector in terms of dividend policy?

Getting Information on Dividend Policy

You can get information about dividends paid back over time from the financial statements of the firm. (The statement of changes in cash flows is usually the best

source.) To find typical dividend payout ratios and yields for the sector in which this firm operates examine the data set on industry averages on my Web site.

Online Sources of Information

www.stern.nyu.edu/~adamodar/cfin2E/roject/data.htm

Problems and Questions

(In the problems below, you can use a risk premium of 5.5% and a tax rate of 40% if either is not specified)

1. If Consolidated Power is priced at \$50.00 with dividend, and its price falls to \$46.50 when a dividend of \$5.00 is paid, what is the implied marginal rate of personal taxes for its stockholders? Assume that the tax on capital gains is 40 percent of the personal income tax.

2. You are comparing the dividend policies of three dividend-paying utilities. You have collected the following information on the ex-dividend behavior of these firms.

	NE Gas	SE Bell	Western Electric
Price before	50	70	100
Price after	48	67	95
Dividends/share	4	4	5

If you were a tax-exempt investor, which company would you use to make “dividend arbitrage” profits? How would you go about doing so?

3. Southern Rail has just declared a dividend of \$1. The average investor in Southern Rail faces an ordinary tax rate of 50 percent. Although the capital gains rate is also 50 percent, it is believed that the investor gets the advantage of deferring this tax until future years (the effective capital gains rate will therefore be 50 percent discounted back to the present). If the price of the stock before the ex-dividend day is \$10 and it drops to \$9.20 by the end of the ex-dividend day, how many years is the average investor deferring capital gains taxes? (Assume that the opportunity cost used by the investor in evaluating future cash flows is 10 percent.)

4. LMN Corporation, a real estate company, is planning to pay a dividend of \$0.50 per share. Most of the investors in LMN are other corporations that pay 40 percent of their ordinary income and 28 percent of their capital gains as taxes. However, they are allowed to exempt 85 percent of the dividends they receive from taxes. If the shares are selling at

\$10 per share, how much would you expect the stock price to drop on the ex-dividend day?

5. UJ Gas is a utility that has followed a policy of increasing dividends every quarter by 5 percent over dividends in the prior year. The company announces that it will increase quarterly dividends from \$1.00 to \$1.02 next quarter. What price reaction would you expect to the announcement? Why?

6. Microsoft, which has had a history of high growth and pays no dividends, announces that it will start paying dividends next quarter. How would you expect its stock price to react to the announcement? Why?

7. JC Automobiles is a small auto parts manufacturing firm, that has paid \$1.00 in annual dividends each year for the past five years. It announces that dividends will increase to \$1.25 next year. What would you expect the price reaction to be? Why? If your answer is different from the previous problem, explain the reasons for the difference.

8. Would your answer be different for the previous problem if JC Automobiles were a large firm followed by thirty-five analysts? Why or why not?

9. WeeMart, a retailer of children's clothes, announces a cut in dividends following a year in which both revenues and earnings dropped significantly. How would you expect its stock price to react? Explain.

10. RJR Nabisco, in response to stockholder pressure in 1996, announced a significant increase in dividends paid to stockholders financed by the sale of some of its assets. What would you expect the stock price to do? Why?

11. RJR Nabisco also had \$10 billion in bonds outstanding at the time of the dividend increase in Problem 10. How would you expect the bonds to react to the announcement? Why?

12. When firms increase dividends, stock prices tend to increase. One reason given for this price reaction is that dividends operate as a positive signal. What is the increase in

dividends signaling to markets? Will markets always believe the signal? Why or why not?