Chapter 13: Payout Policy

Companies can hand back cash to their shareholders either by paying a dividend or buying back their stocks (repurchase their stocks). Therefore payout policy is a choice about how to deliver value. The basic question is whether or not the value of shareholders' wealth is affected by the payout policy of the firm. However we must isolate payout policy from other financial decisions. A high levered firm, which finances capital expenditures largely by borrowing, releases cash that can be distributed to shareholders. In this case the payout policy is a by-product of the borrowing decision. Also, some firms pay out little cash because management is optimistic about firm's future and wishes to retain earnings for investment. Therefore, the precise question we should ask is, what is the effect of a change in payout policy *given the firm's investment and financing decision*?
We start this chapter by providing some background on three aspects of dividend policy. The first one is related to the procedure through which firms pay dividends and repurchase stocks. The second is an empirical examination of some patterns that firms follow in dividend policy. The third deals with the information released to the market about the company prospects by dividend payments and stock repurchases. In a second part we come to the central question. How does the decision to pay dividend or repurchase stock affect firm value?

13.1. How firms pay dividends and repurchase stocks

Dividends in publically traded firms are set by the board of directors and are 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 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 period. This date is important because by announcing its intent to increase, decrease or maintain dividend, the firms conveys information to financial markets. Thus, if the firm changes its dividends, this is the date on which the market reaction to the change should occur according to the semi-strong form of market efficiency.
- The next date of note is the **ex-dividend date**, at which time investors have to have bought the stock in order to receive the dividend. Since 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.
- A few days (2 or 3 days) after the ex-dividend date, the company closes its stock transfer books and makes up a list of the stockholders that will receive the dividends. This is the **record date**. Thus, if you buy stock on or later the ex-dividend date, your purchase will not be entered on the firm's books before the record date and you will not be entitled the dividends. Generally, there should be no price impact on this date.
- The final step involves mailing out dividend checks on the **dividend payment date**. In most case the payment date is 2 or 3 weeks after the record date. Generally, there should be no price impact on this date.

Dividends are not always in the form of cash. Sometimes firms also declare **stock dividends**. For example, if the firm pays a stock dividend of 5%, it sends each shareholder 5 extra shares for every 100 shares currently owned. Thus, stock dividends increase the number of shares but do not affect the firm's assets, profit or total value. So, they reduce the price per share.

Instead of paying dividend to its stockholders, the firm can use the cash to repurchase stock. The reacquired shares may be kept in the company's treasury and resold if the company needs money.
There are four main ways to repurchase stocks that depend largely on how much equity the firm is planning to buy back and over what period. If a firm wants to buy a large proportion of its stock, say 10% or greater, over a short period, it will generally have to make tender offer for its own shares. In a **repurchase tender offer**, a firm specifies a price at which it will buy back shares, which is typically set at about 20% above the current market level, the number of shares it intends to repurchase and the period of time for which it will keep the offer open. Shareholders can then choose whether to accept this offer. A second procedure is to employ a **Dutch auction**. In this case the firm states a series of prices at which it is prepared to repurchase stock. Shareholders submit offers declaring how many shares they wish to sell at each price and the company calculates the lowest price at which it can buy the desired number of shares. A third procedure, which is used when firm intends to buy a small percentage of the outstanding stock, is to employ an **open market repurchase**. In that case the firm buys its stock in the open market, just like any other investor. There are three differences between tender offers and open market repurchases. First, in an open market repurchase, firms buy shares at the prevailing market price and do not have to offer the premiums required to tender offers. Second, firms do not have to disclose publically their intent to buy back shares in the open market repurchase, though they have to comply with restrictions on price manipulation and insider trading. Finally, open market repurchases can be spread over a much longer period of time than tender offers. In terms of flexibility, an open market repurchase affords the firm much more freedom in deciding when to buy back shares and how many shares to repurchase. Finally, repurchase may take place by private negotiation with a major stockholder. **Privately negotiated repurchases** are not as widely used as the tender offers and open market repurchases for two reasons. The first is that it is difficult to find large stockholders who are willing to sell all or most of their shares back to the firm. The second is that the process is open to abuse, since managers can use it to eliminate a large stockholder and consolidate control of the firm.

13.2. Empirical evidence on dividend policy

We observe some interesting patterns when we look at the dividend policies of US firms the last 50 years.
First, *dividends tend to follow earnings*. This should not come as a surprise that earnings and dividends are positively correlated over time because dividends are paid out as earnings. However, these are several things to note here. First, firms do not change their dollar dividends frequently. What they try to do is to change dividends to match long-term sustainable shifts in earnings. Thus, dividends follow a much

smoother path than earnings. Second, firms increase dividends only if they feel they can maintain these high dividends. Also, firms are reluctant to reduce dividends because this will send a negative signal to the markets. Thus, dividends lag earnings. Third, managers are more concerned about changes in dividends than about the levels of dividends. Thus, paying $2 dividend is an important financial decision if last year's dividend was $1, but not big deal if last year's dividend was $2.
Second, *dividend policy tends to follow the life cycle of a firm*. Not surprisingly, firms generally adopt dividend policies that best fit where they are currently in their life cycles. 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. More specifically, we can empirically show an inverse relation between expected growth rates in earnings per share and dividend payout ratios (dividends as a percentage of earnings).

13.3. The information in dividends and stock repurchases

Dividends payments and stock repurchases are important financial events. Investors and analysts use them to gather information about the profitability of a firm. However, what they are concerned for is not the level of dividends but any change in it. Thus, when an increase in dividends is announced, analysts generally up their forecast of the current year's earnings. It is no surprise, therefore, to find that a higher dividend prompts a rise in the stock price, whereas a dividend decrease results in a fall in the price. This is based on the fact that managers do not increase dividends unless they are confident that earnings will remain high in the future. Thus, the *changes* in dividends are viewed as an important indicator of the sustainability of earnings.
Stock repurchases, like dividends, are a way to hand cash back to shareholders. But unlike dividends, share repurchases are frequently a one-off event. So a company that announces a repurchase program is not making a long-term commitment to earn and distribute more cash. The information in the announcement of a share repurchase program is therefore likely to be different from the information in a dividend payment. Companies repurchase shares when they have accumulated more cash than they can invest profitably or when they wish to increase their debt levels. Shareholders are frequently relieved to see companies paying out the excess cash rather than putting it away on unprofitable investments. They also know that firms with large quantities of debt to service are less likely to dissipate cash. Another explanation could be that the increase debt level brings them closer to the optimal capital structure. Thus, a share repurchase program is generally followed by an increase in the stock price.
Stock repurchases program may also be used to signal a manager's confidence in the future. Suppose that the manager believe that the stock is substantially undervalued. The firm announces that it is prepared to buy back a number of its stock at a premium, but managers and directors are commit to hold on to their stocks. Thus, investors jump to the obvious conclusion that the stock is a good value even at a premium of its current value. So it is no surprising that empirical studies have found that announcements of offers to buy back shares above the market price have prompted a larger rise in the stock price.

13.4. The payout controversy

We have seen that a change in payout may provide information about management's confidence in the future and so affect the stock price. But eventually this change in the stock price would happen anyway as information about the future earnings seeps out through other channels. *But does the payout policy change the value of the stock, rather than simply providing a signal of its value?*
On this issue economists fall into three groups. The first is the "dividend irrelevance" group. This group was founded in 1961 by Miller and Modigliani (referred to as MM), when they show the irrelevance of dividend policy in a world without taxes, transaction costs or other market imperfections.[1] The second group is the "dividends are bad" school. This group argues that if we take into account what was left out from MM's argument (income taxes and costs of issuing stocks) then paying dividends decrease the value of the stock. Consequently, firms will be better off either retaining the cash they would have paid out as dividends or repurchase stocks. The third group is the "dividends are good" school. This group argues that dividends are good and can increase firm value.
This theoretical debate has important practical implications. The first is that it can help you to decide the payout policy of your firm, if the latter affects value. The second is related to the investment decision of a firm. If dividend policy does not affect value then a good project is a good project no matters who undertakes it or how it is ultimately financed. But if dividend policy does affect value, then the attractiveness of a new project may depend on where the money is coming from. For example, if investors prefer companies with high payouts, companies might be reluctant to take investments financed by retained earnings.
We begin our discussion with the presentation of MM's original argument. Then we present the positions of the three parties.

13.4.1. Dividend policy is irrelevant in perfect capital markets

Miller and Modigliani (1961) argued that the value of the firm is unaffected by dividend policy in a world without taxes or transaction costs. In a world without taxes it makes no difference whether value is delivered to shareholders via dividend payout or capital gain so long as the investment decision is not influenced by payout policy. They initially assumed that two firms are identical in every respect except for their dividend payout in the current time period. Their streams of future cash flows from operations are identical, their plan investment outlays are identical, and all future dividend payments from the next time period on are also identical. We can represent this mathematically as follows:

[1] Miller, M. H. and F. Modigliani, "Dividend Policy, Growth and the Valuation of Shares", Journal of Business, 1961, 411-433.

$$EBIT_t^i = EBIT_t^j,\ t = 0,1,...$$
$$I_t^i = I_t^i,\ t = 0,1,...$$
$$Div_t^i = Div_t^j,\ t = 1,2,...$$
$$Div_0^i \neq Div_0^j$$

where

$EBIT_t^i$ = the expected future cash flows from operations for the i*th* firm in the time period t

I_t^i = the expected investment outlay for the i*th* firm in the time period t

Div_t^i = the expected dividend payout for the i*th* firm in the time period t. Thus Div_0^i is the current dividend payout for the i*th* firm.

For the sake of simplicity, we assume that both firms are 100% equity. This avoids the problem of confusing capital structure effects with dividend policy effects. By assumption the two firms have the same risk because their streams of operating cash flows are identical. The rate of return for both the firm's shares is:

$$r_{t+1}^E = \frac{d_{t+1}^i + P_{t+1}^i - P_t^i}{P_t^i}$$

where d_{t+1}^i is the dividends per share paid at time t + 1 and P_t^i is the price per share at time t. The rate of return is just the dividends plus capital gains divided by the current market value of shares. By rearranging terms the last formula can be written:

$$P_t^i = \frac{d_{t+1}^i + P_{t+1}^i}{1 + r_{t+1}^E}$$

which is just a present value formula. By multiplying this equation by the current number of shares outstanding n_t^i we have:

$$V_t^i = \frac{Div_{t+1}^i + n_t^i P_{t+1}^i}{1 + r_{t+1}^E} \quad (1)$$

where V_t^i is the market value of the firm at time t and Div_{t+1}^i is the dividend payout paid at time t + 1. Hence the value of the firm is seen to be equal to the discounted sum of two cash flows: any dividends paid out, Div_{t+1}^i, and the end-of-period value of the firm. To show that this present value is independent of dividend payout, we shall examine the sources and uses of funds for the two firms in order to rewrite (1) in a way that is independent of dividends.

There are two major sources of funds for an all-equity firm. First, it receives cash from operations $EBIT_t^i$. Second, it may choose to issue new shares. We denote m_{t+1}^i the number of new shares issued at time t + 1. There are also two major uses of funds: dividend paid out, Div_{t+1}^i, and planned cash outlays for investment, I_{t+1}^i. By definition, sources and uses must be equal. Therefore, we have the following identity:

$$EBIT_{t+1}^i + m_{t+1}^i P_{t+1}^i = I_{t+1}^i + Div_{t+1}^i \quad (2)$$

The shares outstanding at time t + 1 are:

$$n_{t+1}^i = n_t^i + m_{t+1}^i$$

Therefore the numerator of equation (1) can be written as:

$$Div_{t+1}^i + \left(n_{t+1}^i - m_{t+1}^i\right) P_{t+1}^i$$

which is, using equation (2), equal to:

$$EBIT^i_{t+1} - I^i_{t+1} + n^i_{t+1}P^i_{t+1} = EBIT^i_{t+1} - I^i_{t+1} + V^i_{t+1}$$

Therefore equation (1) can be rewritten as:

$$\boxed{V^i_t = \frac{EBIT^i_{t+1} - I^i_{t+1} + V^i_{t+1}}{1 + r^E_{t+1}}} \quad (3)$$

The last formula prove that the value of the firm is unaffected by dividend policy. Given that there are no taxes or transaction costs, the firm can choose any dividend policy whatsoever without affecting the stream of cash flows received by shareholders. It could, for example, elect to pay dividends in excess of cash flows from operations and still be able to undertake any planned investment. The extra funds needed are supplied by issuing new equity. On the other hand, it could decide to pay dividends less than the amount of cash left over from operations after making investments. The excess cash would be used to repurchase shares. It is the availability of external financing in such a world that makes the value of the firm independent of dividend policy.

Assume that a firm decides to pay dividends to its shareholders. To do so, it sells new shares. Since the value of the firm is unaffected by the above decision there must be a *transfer of value* from the old to the new shareholders. The new ones get the newly printed shares, each one worth less than before the dividend was announced, and the old ones suffer a capital loss on their shares. The capital loss born by the old shareholders just offset the extra cash dividend they receive.

Assume that the firm pays no dividend and repurchases a number of its outstanding shares. In that case the unaffectedness of the firm's value is caused by a reduction of the number of shares while its remaining share is worth more than before.

We can also prove that two firms that are identical in every respect except for their current dividend payout must have the same current value. Equation (3) has four terms all of which are equal for two firms i and j described in the beginning of the section. Note that the end-of-period values must be the same, for firm i and j, since the future cash flows, investments and dividends are identical for both of them. Therefore,

$$V^i_0 = V^j_0$$

This result means that dividend policy is irrelevant because it has no effect on shareholders' wealth. The choice to deliver value via cash dividends or using the same cash to repurchase shares is a matter of indifference to shareholders. The Miller-Modigliani argument is that investment decisions are completely independent of payout policy. The firm can pay any level of dividends it wishes without affecting investment decisions. If dividends plus investment outlays use more cash flows than is provided from operations, the firm should seek external financing. The desire to maintain a level of dividends need not ever affect the investment decision.

13.4.2. The "dividends are bad" school

The "dividends are bad" school argues that whenever dividends are taxed more heavily than capital gains, firms should pay the lowest cash dividend they can get away with. Available cash should be retained or used to repurchase shares. If dividends are taxed more heavily than capital gains, investors should pay less for stocks with high dividend yields. In other words, they should accept a higher *pretax* rate of return from securities offering returns in the form of dividends rather than

capital gains. Of course, the *after-tax* rate of return should be independent of the payout policy, since this depends on the systematic risk of the security.
The following table illustrates this. The stocks of firm A and B are equally risky. So, the after-tax rate of the return should be the same, equal to 10%. Investors expect these two stocks to give the same total pretax payoff of $112.50. But firm A does not pay dividend, so the payoff is considered as a capital gain. We find that firm's B stock selling for less than A's. The reason is obvious: Investors prefer stock A because its return comes in the form of capital gains. And, according to the table capital gains are less taxed than dividends. So, the difference between the stock prices of A and B is exactly the present value of the extra taxes investors face if they buy B. The management of B could save these extra taxes by eliminating the $10 dividend and using the released funds to repurchase stock instead. Its stock price should rise to $100 as soon as the new policy is announced.

	Firm A (no dividend)	Firm B (high dividend)
Total pretax payoff	112.50	112.50
Dividend	0	10
Next year's price	112.50	102.50
Today's price	100	97.78
Capital gain	112.50 – 100 = 12.50	102.50 – 97.78 = 4.72
Tax on dividends at 40%	0	0.4×10 = 4
Tax on capital gains at 20%	0.2×12.50 = 2.50	0.2×4.72 = 0.94
Total after-tax income	12.50 – 2.50 = 10	(10 – 4) + (4.72 – 0.94) = 9.78
After-tax return (perpetuity)	10/100 = 10%	9.78/97.78 = 10%

It is true that when companies make very large one-off distributions of cash to shareholders, they generally choose to do so by share repurchase than by a large temporary hike in dividends. But if dividends attract more tax than capital gains, why should any firm ever pay a cash dividend?
The "dividends are bad" party seems to call not just for low payouts but for zero payouts whenever capital gains have a tax advantage. Few people would go quite that far. A firm that eliminates dividends and starts repurchasing stock on a regular basis may find that tax authorities recognizes the repurchase program for what it really is and taxes the payments accordingly. Nevertheless, the "dividends are bad" party argues that the market rewards firms with low payout ratios. It claims that firms that pay dividends and as a result have to issue shares from time to time are making a serious mistake. Any such firm is essentially financing its dividends by issuing stocks; it should have cut dividends at least to the point at which stock issues are not necessary. This would not only save taxes from shareholders but it would also have avoided the transaction costs of the stock issues.
The previous analysis is based on the assumption that dividends are more heavily taxed than capital gains. But since 1986 in the US the tax rates on ordinary income and capital gains are the same. So, some believed that all the tax disadvantages of dividends should had disappeared. Others noted that, even with the same tax rates, dividends carried a tax disadvantage because investor had no choice as to when to report the dividend as income; taxes were due when the firm paid out dividends. In contrast, investors retained discretionary power over when to recognize and pay taxes

on capital gains since 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 to offset against the gain, the investor could now reduce the taxes paid. Second, deferring a stock sale until investor's death could result in tax savings.
The tax disadvantage of dividends may also affect investor's choices of stocks. We would expect that lightly taxed institutional investors or pension funds to hold high dividend yield stocks and retail investors to prefer low-yield stocks. Moreover, this preference for low-yield stocks has been somewhat more marked for high-income individuals.

13.4.3. The "dividends are good" school

MM's argument implies that the value of the company is determined by the company's assets and the cash flows that they generate. Thus, the firm value cannot be increased by changing the amount or the form of distribution. Moreover, the "dividends are bad" school argues that there is tax disadvantage in dividend payments. However, firms continue to pay dividends and they typically view such payments positively. Thus, there should be some good reasons to do that. The "dividends are good" school argues that dividends are good and can increase firm value. Below we consider the arguments of this party.

- **Some investors like dividends**: Not all investors like dividends, many fill it is a tax burden, but there are also many who view dividends positively. These investors, such as institutional investors or pension funds, do not pay much in taxes and consequently do not care about the tax disadvantage associated with dividends. Or they might need and value the cash flow generated by the dividend payment, and they prefer to raise the cash flow in the form of dividends rather than by selling the stock in order to avoid transaction costs. Therefore, stockholders in high tax brackets who do not need the cash flow from dividends tend to invest in companies that pay low or no dividends. By contrast, stockholders in low tax brackets who need the cash from dividend payments, as well as tax-exempt institutions that need current cash flows, will usually invest in companies with high dividends. This clustering of stockholders in companies with dividend policies that match their preferences is called the **clientele effect**.
- **Dividends operate as an information signal**: Dividends can be used as a credible tool to convey information to markets. When firms announce that they will increase dividends they create a cost to themselves, since they commit to paying these dividends in the long term. Their willingness to make this commitment indicates to investors that they believe they have the capacity to generate these cash flows in the long term. This positive signal should therefore lead investors to reevaluate the cash flows and firm value 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 and long-term financial trouble. Consequently, such actions lead to a drop in stock prices. We should view this explanation for dividends increases and decreases cautiously, however. Given the substantial tax burden of increased dividends created for stockholders, this may not be the more efficient way to convey

information to the market, especially for larger firms which can do that more economically and effectively (for example, through an analyst report on the company).

- **Payout policy is a tool for changing the capital structure**: Payout policy cannot be analyzed in isolation to financing decisions. Firms can use share repurchases or dividend payments as a tool to change their debt ratios. Increasing payouts increases leverage over time, and decreasing payouts decrease leverage. When dividends increase substantially, there is wealth transfer from lenders to stockholders. The payment of dividends takes cash out of the firm, cash that could have been used to cover debt obligations. Not surprisingly, bond prices decline upon the announcement of large increase in dividends. It is shareholders who gain from the loss in market value faced by bondholders.
- **Dividends reduce managerial power**: When forcing a firm to make a commitment to pay dividends could be an alternative to force managers to be disciplined in project choice and to reduce the cash available in discretionary uses.

13.4.4. The "dividend irrelevance" school

The "dividend irrelevance" school maintains that company's value is not affected by its dividend policy. Unlike the other two parties, they emphasize that the supply of dividends is free to adjust to the demand. Therefore, if companies could increase their stock price by changing their dividend payout, they will surely have done so. Presumably, dividends are where they are because no company believes that it could add value simply by upping or reducing its dividend payout.
This argument is not inconsistent with clientele effect. Investors which prefer low-payout stocks would be prepared to pay a premium to acquire these stocks. But perhaps they do not have to. Enough firms may have already noticed the existence of this clientele and switched to low-payout policies. If so, there is no incentive for *additional* firms to switch to low-payout policies. Similarly, there may well be some investors who prefer high dividends, but these investors too already have a wide choice of suitable stocks. A third group of tax-exempt investors, such as pension funds, may have no reason to prefer dividends to capital gains. These investors will be indifferent between holding low or high-payout stocks, and the value that they place on each stock will be unaffected by the company's dividend policy. This brings us back to the original MM argument stating that dividend policy does not affect value.

EXERCISES-13

1. Which types of companies would you expect to distribute a relatively high or low proportion of current earnings? Which would you expect to have a relatively high or low price-earnings ratio?
   a. High-risk companies.
   b. Companies that have experienced an unexpected decline in profits.
   c. Companies that expect to experience a decline in profits.
   d. Growth companies with valuable future investment opportunities.

2. A firm has outstanding $1 million shares with a total market value of $20 million. The firm is expected to pay $1 million of dividends next year, and thereafter the amount paid out is expected to grow by 5% a year in perpetuity. Thus the expected dividend is $1.05 million in year 2, $1.105 million in year 3, and so on. However, the company has heard that the value of a share depends on the flow of dividends, and therefore announces that next year dividend will increase to $2 million and that the extra cash will be raised immediately by an issue of shares. After that, the total amount paid out each year will be as previously forecasted, that is, $1.05 million in year 2 and increasing by 5% in each subsequent year.

a. At what price will the new shares be issued in year 1?
b. How many shares will the firm need to issue?
c. What will be the expected dividend payments on these new shares, and what therefore will be paid out to the old shareholders after year 1?
d. Show that the present value of the cash flows to current shareholders remains $20 million.

3. The MM's proof of dividend irrelevance in Section 13.4.1 assumes that the new shares are sold at a fair price. Look back at Exercise 2. Assume that new stocks are issued in year 1 at $10 a share.

a. Who gains and who loses? Calculate the amount of present value of cash flows that each party (new and old shareholders) gain or lose.
b. Is dividend policy still irrelevant? Explain.

4. Suppose a company in the following position:

Net profit	$10 million
Number of shares	1 million
Earnings per share	$10
Price-earnings ratio	20
Share price	$200

The financial manager argues that "if the company repurchases 200,000 shares at $200 a share, the number of shares will decline at 800,000 and earnings per share will increase at $12.50. Assuming that the price-earnings ratio remains at 20, the share price must be rise to $250". Discuss.

5. A firm has just announced its regular quarterly cash dividend of $1 per share.

a. When will the stock price fall to reflect this dividend payment, on the record date, the ex-dividend date, or the payment date?
b. Assume that there are no taxes. By how much is the stock price likely to fall?
c. Now assume that all investors pay tax of 30% on dividends and nothing on capital gains. What is the likely fall in the stock price?
d. Suppose, finally, that everything is the same as in part (c), except that security dealers pay tax on both dividends and capital gains. How would you expect your answer to (c) to change? Explain.

6. The shares of A and B both sell for $100 and offer a pretax return of 10%. However, in the case of company A the return is entirely in the form of dividend yield (the company pays a regular annual dividend of $10 a share), while in the

case of B the return comes entirely as capital gain (the share appreciate by 10% a year). Suppose that dividends and capital gains are both taxed at 30%.

a. Calculate the after-tax return on share A.
b. Calculate the after-tax return on share B to an investor who sells after (i) two years, and (ii) 10 years.