

## The Dividend Puzzle

Fischer Black

Why do corporations pay dividends?

Why do investors pay attention to dividends?

Perhaps the answers to these questions are obvious. Perhaps dividends represent the return to the investor who put his money at risk in the corporation. Perhaps corporations pay dividends to reward existing shareholders and to encourage others to buy new issues of common stock at high prices. Perhaps investors pay attention to dividends because only through dividends or the prospect of dividends do they receive a return on their investment or the chance to sell their shares at a higher price in the future.

Or perhaps the answers are not so obvious. Perhaps a corporation that pays no dividends is demonstrating confidence that it has attractive investment opportunities that might be missed if it paid dividends. If it makes these investments, it may increase the value of the shares by more than the amount of the lost dividends. If that happens, its shareholders may be doubly better off. They end up with capital appreciation greater than the dividends they missed out on, and they find they are taxed at lower effective rates on capital appreciation than on dividends.

In fact, I claim that the answers to these questions are not obvious at all. The harder we look at the dividend picture, the more it seems like a puzzle, with pieces that just don't fit together.

### THE MILLER-MODIGLIANI THEOREM

Suppose you are offered the following choice. You may have \$2 today, and a 50-50 chance of \$54 or \$50 tomorrow. Or you may have nothing today, and a 50-50 chance of \$56 or \$52 tomorrow. Would you prefer one of these gambles to the other?

Probable you would not. Ignoring such factors as the cost of holding the \$2 and one day's interest on \$2, you would be indifferent between these two gambles.

The choice between a common stock that pays a dividend and a stock that pays no dividend is similar, at least if we ignore such things as transaction costs and taxes. The price of the dividend-paying stock drops on the ex-dividend date by about the amount of the dividend. The dividend just drops the whole range of possible stock prices by that amount. The investor who gets a \$2 dividend finds

himself with shares worth about \$2 less than they would have been worth if the dividend hadn't been paid, in all possible circumstances.

This, in essence, is the Miller-Modigliani theorem.<sup>1</sup> It says that the dividends a corporation pays do not affect the value of its shares or the returns to investors, because the higher the dividend, the less the investor receives in capital appreciation, no matter how the corporation's business decisions turn out.

When we say this, we are assuming that the dividend paid does not influence the corporation's business decisions. Paying the dividend either reduces the amount of cash equivalents held by the corporation, or increases the amount of money raised by issuing securities.

### IF A FIRM PAYS NO DIVIDENDS

If this theorem is correct, then a firm that pays a regular dividend equal to about half of its normal earnings will be worth the same as an otherwise similar firm that pays no dividends and will never pay any dividends. Can that be true? How can a firm that will never pay dividends be worth anything at all?

Actually, there are many ways for the stockholders of a firm to take cash out without receiving dividends. The most obvious is that the firm can buy back some of its shares. This has the advantage that most investors are not taxed as heavily on shares sold as they are on dividends received.

If the firm is closely held, it can give money to its shareholders by giving them jobs at inflated salaries, or by ordering goods from other firms owned by the shareholders at inflated prices.

If the firm is not closely held, then another firm or individual can make a tender offer which will have the effect of making it closely held. Then the same methods for taking cash out of the firm can be used.

Under the assumptions of the Modigliani-Miller theorem, a firm has value even if it pays no dividends. Indeed, it has the same value it would have if it paid dividends.

### TAXES

In a world where dividends are taxed more heavily (for most investors) than capital gains, and where capital gains are not taxed until realized, a corporation that pays no dividends will be more attractive to taxable individual investors than a similar corporation that pays dividends. This will tend to increase the price of the non-dividend-paying corporation's stock. Many corporations will be tempted to eliminate dividend payments.

Of course, corporate investors are taxed more heavily on realized capital gains

<sup>1</sup>See Merton H. Miller and Franco Modigliani, "Dividend Policy, Growth, and the Valuation of Shares," *Journal of Business* 34 (October, 1961): 411-433. Also Franco Modigliani and Merton H. Miller, "The Cost of Capital, Corporation Finance, and the Theory of Investment: Reply," *American Economic Review* 49 (September, 1959): 655-669.

than on dividends. And tax-exempt investors are taxed on neither. But it is hard to believe that these groups have enough impact on the market to outweigh the effects of taxable individuals.

Also, the IRS has a special tax that it likes to apply to companies that retain earnings to avoid the personal taxation of dividends. But there are many ways to avoid this tax. A corporation that is making investments in its business usually doesn't have to pay the tax, especially if it is issuing securities to help pay for these investments.

If a corporation insists on paying out cash, it is better off replacing some of its common stock with bonds. A shareholder who keeps his proportionate share of the new securities will receive taxable interest but at least the interest will be deductible to the corporation. Dividends are not deductible.

With taxes, investors and corporations are no longer indifferent to the level of dividends. They prefer smaller dividends or no dividends at all.

### TRANSACTION COSTS

An investor who holds a non-dividend-paying stock will generally sell some of his shares if he needs to raise cash. In some circumstances, he can borrow against his shares. Either of these transactions can be costly, especially if small amounts of money are involved. So an investor might want to have dividend income instead.

But this argument doesn't have much substance. If investors are concerned about transaction costs, the corporation that pays no dividends can arrange for automatic share repurchase plans, much like the automatic dividend reinvestment plans that now exist. A shareholder would keep his stock in trust, and the trustee would periodically sell shares back to the corporation, including fractional shares if necessary. The shareholder could even choose the amounts he wants to receive and the timing of the payments. An automated system would probably cost about as much as a system for paying dividends.

If the IRS objected to the corporation's buying back its own shares, then the trustee could simply sell blocks of shares on the open market. Again, the cost would be low.

Thus transaction costs don't tell us much about why corporations pay dividends.

### WHAT DO DIVIDEND CHANGES TELL US?

The managers of most corporations have a tendency to give out good news quickly, but to give out bad news slowly. Thus investors are somewhat suspicious of what the managers have to say.

Dividend policy, though, may say things the managers don't say explicitly. For one reason or another, managers and directors do not like to cut the dividend. So they will raise the dividend only if they feel the company's prospects are good

enough to support the higher dividend for some time. And they will cut the dividend only if they think the prospects for a quick recovery are poor.

This means that dividend changes, or the fact that the dividend doesn't change, may tell investors more about what the managers really think than they can find out from other sources. Assuming that the managers' forecasts are somewhat reliable, dividend policy conveys information.

Thus the announcement of a dividend cut often leads to a drop in the company's stock price. And the announcement of a dividend increase often leads to an increase in the company's stock price. These stock price changes are permanent if the company in fact does as badly, or as well, as the dividend changes indicated.

If the dividend changes are not due to forecasts of the company's prospects, then any stock price changes that occur will normally be temporary. If a corporation eliminates its dividend because it wants to save taxes for its shareholders, then the stock price might decline at first. But it would eventually go back to the level it would have had if the dividend had not been cut, or higher.

Thus the fact that dividend changes often tell us things about the corporations making them does not explain why corporations pay dividends.

## HOW TO HURT THE CREDITORS

When a company has debt outstanding, the indenture will almost always limit the dividends the company can pay. And for good reason. There is no easier way for a company to escape the burden of a debt than to pay out all of its assets in the form of a dividend, and leave the creditors holding an empty shell.<sup>2</sup>

While this is an extreme example, any increase in the dividend that is not offset by an increase in external financing will hurt the company's creditors. A dollar paid out in dividends is a dollar that is not available to the creditors if trouble develops.

If an increase in the dividend will hurt the creditors, then a cut in the dividend will help the creditors. Since the firm is only worth so much, what helps the creditors will hurt the stockholders. The stockholders would certainly rather have \$2 in dividends than \$2 invested in assets that may end up in the hands of the creditors. Perhaps we have finally found a reason why firms pay dividends.

Alas, this explanation doesn't go very far. In many cases, the changes in the values of the stock and bonds caused by a change in dividend policy would be so small they would not be detectable. And if the effects are large, the company can negotiate with the creditors. If the company agrees not to pay any dividends at all, the creditors would presumably agree to give better terms on the company's credit. This would eliminate the negative effects of cutting the dividend on the position of the stockholders relative to the creditors.

<sup>2</sup>This issue is discussed in more detail in Fischer Black and Myron Scholes, "The Pricing of Options and Corporate Liabilities." *Journal of Political Economy* 81 (May/June, 1973): 637-654.

## DIVIDENDS AS A SOURCE OF CAPITAL

A company that pays dividends might instead have invested the money in its operations. This is especially true when the company goes to the markets frequently for new capital. Cutting the dividend, if there are no special reasons for paying dividends, has to be one of the lowest cost sources of funds available to the company.

The underwriting cost of a new debt or equity issue is normally several percent of the amount of money raised. There are no comparable costs for money raised by cutting the dividend.

Perhaps a company that has no profitable investment projects and that is not raising money externally should keep its dividend. If the dividend is cut, the managers may lose the money through unwise investment projects. In these special cases, there may be a reason to keep the dividend. But surely these cases are relatively rare.

In the typical case, the fact that cutting the dividend is a low cost way to raise money is another reason to expect corporations not to pay dividends. So why do they continue?

## DO INVESTORS DEMAND DIVIDENDS?

It is possible that many, many individual investors believe that stocks that don't pay dividends should not be held, or should be held only at prices lower than the prices of similar stocks that do pay dividends. This belief is not rational, so far as I can tell. But it may be there nonetheless.

Add these investors to the trustees who believe it is not prudent to hold stocks that pay no dividends, and to the corporations that have tax reasons for preferring dividend-paying stocks, and you may have a substantial part of the market. More important, you may have a part of the market that strongly influences the pricing of corporate shares. Perhaps the best evidence of this is the dominance of this view in investment advisory publications.

On the other hand, investors also seem acutely aware of the tax consequences of dividends. Investors in high tax brackets seem to hold low dividend stocks, and investors in low tax brackets seem to hold high dividend stocks.<sup>3</sup>

Furthermore, the best empirical tests that I can think of are unable to show whether investors who prefer dividends or investors who avoid dividends have a stronger effect on the pricing of securities.<sup>4</sup>

If investors do demand dividends, then corporations should not eliminate all dividends. But it is difficult or impossible to tell whether investors demand dividends or not. So it is hard for a corporation to decide whether to eliminate its dividends or not.

<sup>3</sup>See Marshall E. Blume, Jean Crockett, and Irwin Friend, "Stockownership in the United States: Characteristics and Trends." *Survey of Current Business* 54 (November, 1974): 16-40.

<sup>4</sup>See Fischer Black and Myron Scholes, "The Effects of Dividend Yield and Dividend Policy on Common Stock Prices and Returns." *Journal of Financial Economics* 1 (May, 1974): 1-22.

## PORTFOLIO IMPLICATIONS

Corporations can't tell what dividend policy to choose, because they don't know how many irrational investors there are. But perhaps a rational investor can choose a dividend policy for his portfolio that will maximize his after-tax expected return for a given level of risk. Perhaps a taxable investor, especially one who is in a high tax bracket, should emphasize low dividend stocks. And perhaps a tax-exempt investor should emphasize high dividend stocks.

One problem with this strategy is that an investor who emphasizes a certain kind of stock in his portfolio is likely to end up with a less well-diversified portfolio than he would otherwise have. So he will probably increase the risk of his portfolio.

The other problem is that we can't tell if or how much an investor will increase his expected return by doing this. If investors demanding dividends dominate the market, then high dividend stocks will have low expected returns. Even tax-exempt investors, if they are rational, should buy low dividend stocks.

On the other hand, it seems that rational investors in high brackets will do better in low dividend stocks no matter who dominates the market. But how much should they emphasize low dividend stocks? At what point will the loss of diversification offset the increase in expected return?

It is even conceivable that investors overemphasize tax factors, and bid low dividend stocks up so high that they are unattractive even for investors in the highest brackets.

Thus the portfolio implications of the theory are no clearer than its implications for corporate dividend policy.

What should the individual investor do about dividends in his portfolio? We don't know.

What should the corporation do about dividend policy? We don't know.