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Does Dividend Policy Matter?

JEREMY EDWARDS*

1. INTRODUCTION

There are few areas of economics in which the gulf between theoretical analysis and practical experience is as wide as it appears to be in the case of company dividend policy. Dividend policy is seen as a matter of great importance by firms and the stock market, yet in conventional economic theory dividend policy is often regarded as being irrelevant and in certain important circumstances the payment of dividends is viewed as strictly inferior to a policy of retaining profits within the company. This unsatisfactory state of affairs has far-reaching consequences: without a convincing economic theory of dividend policy it is difficult to understand, for example, how a tax reform favouring equity finance might affect dividend behaviour and hence the capital structure and investment decisions of firms. The purpose of this paper is to explain the nature of the conflict between the theory and practice of dividend policy.

An important point to be made clear at the outset is that dividend policy must not be confused with investment policy. To isolate the effects of changes in dividend policy it is necessary that the firm's investment policy in the current period, and its expected investment policy in all future periods, be held constant when the dividend payment is changed. This means that an increase in dividends must be accompanied by an increase in external sources of funds (and conversely for a decrease in dividends) so that the same investment plan can be financed. In order not to confuse dividend policy with the separate issue of the choice of the firm's debt-equity ratio attention is restricted to the case where variations in dividends are accompanied by variations in the amount of new equity finance raised. Thus the proposition that in certain circumstances dividend policy is irrelevant is a proposition about the effects of changes in dividend payments and

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corresponding changes in new share issues so that investment is constant, as the following section makes clear. Conventional economic theory regards the value of a firm's equity as being given by the present value of the expected future net cash payments the firm will make to its shareholders and these payments will predominantly be dividends.¹ Changes in the stream of expected future dividends which result from a change in the firm's investment policy or a change in expectations will affect the value of the firm's equity, but there is no dispute that in this sense dividends matter. The proposition that dividend policy is irrelevant does not deny that changes of this form are important, nor does it deny that, for instance, a firm which is legally prohibited from ever making cash payments to its shareholders will have an equity value of zero. The question of whether dividend policy matters is a question about the effects of a change in the dividend payment when investment and borrowing are held constant, so that there is an accompanying change in the amount of new equity finance raised by the firm.

2. THE IRRELEVANCE PROPOSITION

This section considers the classic argument of Miller and Modigliani (1961) that in the absence of differential personal taxation of income and capital gains dividend policy is a matter of irrelevance for both firms and shareholders. For simplicity it is assumed that the rates of personal tax on income and capital gains are both zero, although it may easily be checked that the argument only requires that they be equal.

The argument that dividend policy is irrelevant in these circumstances is simple. The firm has available to it in a particular period a certain amount of profit after corporation tax and interest payments. Some part of this profit can be used to finance investment in the period which, together with investment in all future periods, is taken to be fixed. Given this investment plan the stock market has come to some valuation of the firm's total equity based on the uncertain future stream of net cash flows to the shareholders associated with the investment plan. It is assumed that market expectations about the uncertain future stream of net cash flows are not affected by the size of the current dividend payment. Given unchanged investment and borrowing, changes in dividends require corresponding changes in new equity finance. So an increase in the dividend payment to current shareholders requires a corresponding increase in the value of new equity raised, and the wealth of current shareholders (equal to the sum of the dividend payment and the total value of the firm's equity less the value of new equity sold) is thus independent of the dividend decision. Changes in dividends

¹In the UK these payments may also include distributions made in respect of a winding-up, which are treated as a return of capital. In the USA and (since 1981) the UK they may also include proceeds from share repurchases by the firm, although companies' ability to purchase their own shares in the UK is heavily circumscribed (see Gammie, 1982).

lead to offsetting changes in the value of equity owned by current shareholders (equal to the total equity value less the value of new equity issued), so that, for example, if the dividend is reduced then a shareholder who would have used the higher dividend receipt to finance current consumption now finances the same consumption by selling some of his or her shareholding, the value of which is higher by the amount of the dividend reduction.² Shareholders can therefore declare their own dividends by appropriate sales of their shares, and hence dividend policy in the current period is of no consequence. The argument can be repeated for dividend policy in future periods given a fixed investment plan, and thus dividend policy overall is irrelevant.

The irrelevance proposition has been objected to on a number of grounds. One objection is that some investors are not indifferent between receiving returns from shareholdings in the form of dividends and capital gains. Trusts and endowment funds may only be allowed to spend that part of the return from shareholdings which comes in the form of dividends: capital gains are regarded as additions to principal which cannot be spent. Some financial institutions are not permitted to hold shares which do not have established dividend records. Clearly for these shareholders dividend policy is not a matter of irrelevance; but the majority of shareholders are not in this position, so this cannot serve as an explanation of the importance attached to dividend policy by the stock market in general.

A second objection is that the irrelevance proposition ignores the fact that shareholders will incur transactions costs in selling shares to declare their own dividends. It is certainly true that the existence of transaction costs makes it likely that shareholder wealth will be affected by changes in dividend policy, but it is not obvious that transactions costs will imply a preference for dividends. If a company increases its dividend payments it must issue new shares in order to finance the given investment, and the

²It may be useful to formulate the argument in terms of simple algebra. Let N^1 be the number of shares which have been issued before the current period, D^1 the total dividend paid when no new equity is issued, D^2 the total dividend paid when new equity is issued, $N^2 - N^1$ the number of new shares issued, p^1 and p^2 the price of a single share under the two different dividend policies, and V the constant total value of the equity. V is constant because it depends on the firm's investment plan and stock market expectations about the returns from it, both of which are taken to be independent of dividend policy. By definition

$$V = p^1 N^1 = p^2 N^2 \quad (1)$$

Because a given investment plan has to be financed

$$D^2 - D^1 = p^2 (N^2 - N^1) \quad (2)$$

Using (2) in (1) gives

$$p^1 N^1 = D^2 - D^1 + p^2 N^1$$

so that

$$p^2 = p^1 - ((D^2 - D^1)/N^1)$$

Thus the price of a share owned by a current shareholder is lower when the dividend is increased by an amount equal to the additional dividend per share. The wealth of current shareholders is thus independent of dividend policy.

issuing of new shares also involves transactions costs: Merrett, Howe and Newbould (1967) put the average administrative and underwriting costs of a rights issue in the UK at about 2.6% of the proceeds of the issue. For shareholders living on dividends and thus requiring a constant flow of funds the transaction costs involved in regularly disposing of a small proportion of their total shareholding—commission charges and stamp duty—will exceed the new issue costs and hence lead to a preference for dividends. But shareholders who receive dividends which they would rather have had retained are subjected to the transactions costs involved in reinvesting dividends, which, when added to the new issue costs, imply a preference for retentions. The effect of transactions costs in the context of dividend policy is not unambiguous and such costs cannot provide a satisfactory explanation of the importance of dividends, although clearly they are likely to have some influence on dividend decisions.

A third objection to the irrelevance proposition is that a reduction in the firm's dividend will not leave current shareholders' wealth unchanged because those shareholders who wish to declare their own dividends by selling shares will have to sell to investors who do not currently hold shares in the company; these investors will not have such favourable expectations about the company's prospects as the existing shareholders, so the price at which shares can be sold to these extra-marginal investors will be such that current shareholder wealth is decreased by a reduction in dividends. This argument is incorrect because it ignores the fact that if shareholders were using dividend receipts to finance consumption in the original (high-dividend) equilibrium then some of the new shares issued when the dividend payment was high would have been bought by investors who had previously not held any of the firm's shares: in the low-dividend equilibrium these new shareholders acquire an equity stake in the firm by purchasing existing shares from existing shareholders rather than by buying new shares. Consequently there is no need to provide extra-marginal investors with an additional incentive to hold shares in the firm if the dividend is cut, and current shareholders' wealth remains independent of dividend policy.

A fourth, very common, objection might be called the 'bird in the hand' argument. It is well summarized by Wood (1975): 'dividends, by putting cash into the shareholder's hands, confer a benefit on him which is certain and tangible in a sense in which retained earnings, however lucratively invested, do not'. This, Wood argues, is not because of the uncertainty surrounding the future profits from the company's investments but because of the volatility of the stock market—the fact that the stock market's capitalisation of any particular stream of profits is itself highly uncertain—which means that there is no guarantee that the retention of profits will enable shareholders to realize a commensurate capital gain on their shares. But this argument, although superficially plausible, is also incorrect. There is no denying that the price of a share, and consequently the total value of a firm's equity, exhibits substantial volatility over time. But the irrelevance

argument given above concerns a comparison of the effects of alternative dividend policies at a given point in time. So long as changes in dividends do not affect the total value of the firm's equity by altering market expectations of future profits the argument given above remains valid. If a firm reduces its dividend payment those shareholders who wished to receive dividend income can immediately sell shares and realize the capital gain corresponding to the dividend cut, and this opportunity for shareholders to declare their own dividends is unaffected by the possibility that in a week's time the firm's share price may have soared or collapsed.

3. PERSONAL TAXES AND THE RELEVANCE OF DIVIDEND POLICY

The returns to a shareholder comprise dividends and capital gains, and if the personal tax rates on dividends and capital gains are not identical then dividend policy is no longer a matter of irrelevance to shareholders, because their net-of-tax wealth (for a given investment plan) will depend on payout policy. Shareholders who pay a higher rate of tax on dividend receipts than they do on capital gains will prefer the firm's equity finance for its investment to come entirely from retained profits, with dividends being paid only to the extent that they cannot profitably be invested, as this allows them to maximise the proportion of the return on their investment which comes in the form of relatively lightly-taxed capital gains. The converse is true for shareholders whose tax rate on dividends is less than that on capital gains.

Thus differential taxation of dividends and capital gains means that dividend policy is no longer irrelevant. Unfortunately, however, differential taxation does not provide a straightforward explanation of the importance attached to dividend policy in practice. The effective rates of tax on dividends and capital gains vary substantially, both between shareholders at a given time because of differences in their tax rates, and also over time because of changes in the overall system of corporation tax. This variation means that it is not generally possible to make unambiguous statements as to whether dividends are favoured or discriminated against by the personal tax system, but there are some cases in which it is possible to say definitely that shareholders should either be indifferent to dividend policy or strictly prefer companies to use retained profits as the source of equity finance and only pay dividends which cannot profitably be invested. As we shall see, observed behaviour in these cases seems to contradict this theoretical prediction.

i) A classical system of corporation tax

Under the 'classical' system of corporation tax which operates in the USA, and was also employed in the UK between 1965 and 1973, dividends are taxed at the marginal rate of income tax of the shareholder receiving them with no allowance given for corporation tax already paid on the dividends. Capital gains are generally taxed at lower rates than dividends. Thus in the

UK between 1965 and 1973 the maximum rate of tax on long-term capital gains (which arise on shares held for at least twelve months) was 30%, which was always less than the standard rate of income tax. Furthermore capital gains tax is charged only upon realization of the gain, which means that the effective rate of capital gains tax is less than the nominal rate of 30% by an amount reflecting the extent to which the shareholder benefits by deferring payment of the tax beyond the date at which the gain accrues. Thus, with the exception of tax-exempt shareholders who pay neither income tax nor capital gains tax and so should remain indifferent, shareholders in the UK between 1965 and 1973 should have preferred, for a given investment plan of the firm, low dividend payout policies. A reduction in the dividend leads to a corresponding increase in the value of the equity owned by existing shareholders, but the additional capital gains tax liability from the appreciation in share values is more than offset by the reduction in income tax resulting from the lower dividend, so taxpaying shareholders' net-of-tax wealth is increased by the cut in dividends. Tax-exempt shareholders are unaffected by the dividend reduction. Hence in the UK between 1965 and 1973 low dividend policies should have been preferred.

The situation is broadly similar in the USA. Most individuals face lower tax rates on capital gains than on dividends, so should prefer low-dividend policies,³ while tax-exempt individual and institutional shareholders should be indifferent to dividend policy. Corporate investors are taxed more heavily on realized capital gains than on dividends, but it is difficult to believe that they could exert a sufficiently strong influence to outweigh the general presumption that low-dividend policies should be favoured in the USA.

Several predictions about dividend behaviour in the UK between 1965 and 1973 and in the USA follow from this analysis. One is that firms should not simultaneously pay dividends and raise new equity finance, for doing so imposes an unnecessary tax burden on their shareholders. But simultaneous dividend payment and new share issue was not uncommon in the UK between 1965 and 1973: for a sample of 396 companies in the six-year period from 1967 to 1972—giving a total of 2376 observations on annual dividend and new equity behaviour—there were 631 cases in which new equity was issued, and in 405 of them dividend per share was not simply

³It has been suggested by Miller and Scholes (1978) that Section 163(d) of the US Internal Revenue Code implies that the effective rate of tax on dividends is no higher than that on capital gains. This regulation—the investment interest limitation—effectively restricts the deduction of interest from an individual's taxable income to mortgage payments plus dividend and interest income plus 10,000 dollars. If a taxpayer is constrained by the limit on interest deductions then increased dividends allow the taxpayer to increase borrowing for investment in tax shelter annuities sufficiently to eliminate the additional tax liability on the dividends, and hence there is no tax preference for capital gains over dividends. However Feenberg (1981) shows from tabulations of actual 1977 tax returns that the circumstances under which the Miller-Scholes hypothesis applies are relevant for the recipients of only 2.5 per cent of dividend income, and hence it is difficult to ascribe a significant role to this hypothesis as an explanation of observed dividend policy in the USA.

paid but actually increased from the previous year's level. Simultaneous dividend payout and new equity issue also occurs in the USA, and there are examples of severe adverse reaction from shareholders when companies attempt to avoid imposing this unnecessary tax burden on them. Brealey and Myers (1981) quote the case of General Public Utilities, whose management decided in 1968 to reduce its cash dividend in order to avoid a new share issue. Individual shareholders advised the company president to see a psychiatrist, institutional shareholders threatened to sell their stock, the share price fell by nearly 10 per cent, and in the end the company abandoned the idea.

Another prediction is that insofar as shareholders are subject to lower tax rates on capital gains than dividends, companies will have an incentive to find ways of converting what is essentially a dividend into a capital gain, and to prevent this tax-avoidance taking place the tax authorities will have to declare certain types of capital gains to be dividends for tax purposes. Thus in the USA, in order to prevent companies making regular cash payments to shareholders in the form of repurchases of their own shares rather than dividends, Section 302 of the Internal Revenue Code prohibits firms from buying back shares in lieu of distributing dividends. Similarly in the UK some companies offered shareholders the option of either a cash dividend or a number of shares with value equal to that of the cash dividend; this latter form of payment (a 'scrip dividend') was described as tax avoidance in 1975 and deemed to be income for tax purposes.

But the prediction that, under the classical system, shareholders should prefer to hold shares which made regular payments that were taxed as capital gains rather than as income is contradicted by the case of the US firm Citizens' Utilities Company, discussed by Long (1978). Since 1956 Citizens' Utilities has had two classes of shares which are virtually identical in all respects except dividend payout: Series A shares receive stock dividends of 'equal fair value' (before personal taxes) to the cash dividends received by Series B shares. Under an Internal Revenue Service ruling of 1955 and a clause in the 1969 Tax Reform Act the stock dividends of Series A share are taxable as capital gains rather than as ordinary income. No other publicly held US firm has such a ruling. Citizens' Utilities is therefore special in that the relationship between dividend payout and share price can be examined while risk, investment policy, borrowing policy and so on are genuinely held constant. If the overwhelming majority of Citizens' Utilities shareholders face effective tax rates on capital gains which are no higher than the rates they face on income (as evidence on the Citizens' Utilities shareholder populations suggests is the case) then the equilibrium ratio of the prices of Series A to Series B shares would be expected never to be below the ratio of Series A dividends to Series B dividends, as Series A dividends are never subject to higher taxes than Series B dividends. But the evidence shows that the ratio of the prices of Series A to Series B shares is consistently below the ratio of Series A to Series B dividends. The unique

characteristics of Citizens' Utilities shares have been widely described in the financial press, so that shareholder ignorance of these special features does not seem a plausible explanation for this anomalous behaviour. It seems that the behaviour of the price ratio can only be accounted for by the hypothesis that, despite the higher taxes paid on dividends, shareholders have some other reasons for preferring cash dividends.

Thus experience from 'classical' systems of corporation tax provides significant evidence to suggest that something other than differential personal taxation of dividends and capital gains is important in explaining the importance attached to dividend policy in practice. The question then arises as to what extent experience under the present UK imputation system of corporation tax also suggests that companies adopt dividend policies which impose unnecessary tax burdens on their shareholders.

ii) An imputation system of corporation tax

Under the imputation system a company making a dividend distribution pays Advance Corporation Tax (ACT) on the dividends. This represents shareholders' basic rate income tax liability on the dividends and can be set off against the company's overall corporation tax bill, subject to the limitation that the ACT set off plus the dividend to which it relates must be no greater than the company's taxable profits. The complications raised by unrelieved ACT will be ignored for the moment. Individual shareholders are liable to tax (or refunds of tax) on dividends only to the extent that their marginal income tax rate differs from the rate of imputation, which is set equal to the basic rate of income tax (currently 30%); thus tax-exempt institutions receive a refund while individuals on the top rate pay additional income tax on their dividends. The effect of personal taxes on dividend policy depends on the effective capital gains tax rate that would result if profits were retained within the company rather than paid out and investment were held constant, so that the value of the equity appreciated by the amount of the reduction in dividends. The rate of capital gains tax on realisation (which has been partially indexed since 1982) is zero for tax-exempt institutions and either zero or 30% for all other shareholders, but the effective rate will generally be less than 30% because of the taxpayer's ability to defer payment until the gain is realised.

Therefore, in the absence of complications associated with unrelieved ACT, tax-exempt institutions should prefer companies to pay out dividends and use new equity finance, as although no tax is paid on the capital gain that would result from retention when the profits are paid out as dividends tax-exempt shareholders can claim a refund of tax equal to 3/7 of the dividends received. Basic rate income tax payers should also prefer dividends to be paid out and new equity finance to be used, as dividends are free of basic rate income tax while there would be a positive tax liability on the corresponding capital gain that would result from retention. Any shareholder whose marginal income tax rate exceeds 51% should definitely

prefer companies to use retentions as the source of equity finance irrespective of when they realise capital gains, while shareholders who will defer realisation for a significant length of time will prefer retentions even if their marginal income tax rates are considerably lower. (The details behind these calculations are given in the Appendix below).

Now consider how unrelieved ACT affects the analysis. For a company which has sufficient taxable profits to offset the ACT associated with its dividends the total corporation tax payment it makes is unaffected by its dividend policy: the dividend payout merely alters the division of the total payment between ACT and mainstream corporation tax. But if taxable profits are not large enough for ACT to be offset then a higher dividend involves a higher total tax payment by the company. To illustrate, consider a tax-exhausted company which has profits of £1,000 and wishes to invest £1,000. If the company retains all its profits share values will appreciate correspondingly. If it pays out all its profits as dividends and raises £1,000 of new equity finance current shareholders will receive only £700 in dividends as £300 must be paid in ACT which cannot be set off against other tax. Although this unrelieved ACT can be carried forward to be set off against future tax liabilities, there is still a significant additional tax charge associated with dividends because unrelieved ACT is carried forward in nominal terms only and so the present value of the eventual set off is less than the £300 which is not relieved immediately. Unrelieved ACT reduces the extent to which shareholders should prefer high dividend payout, but does not eliminate it entirely. Tax-exempt shareholders will continue to prefer dividends except in the limiting case when unrelieved ACT is never subsequently set off against future tax: in this case tax-exempt shareholders should regard dividend policy as irrelevant. Unrelieved ACT means that the income tax rate above which individual shareholders prefer companies to retain rather than distribute falls nearer to the 30% basic rate. For example, investors with an effective capital gains tax rate of 15% and a nominal discount rate of 10% holding shares in a company which will not be able to set off its ACT until five years after paying dividends will prefer retentions so long as their marginal income tax rate exceeds 33%, while if there is an eight year delay before ACT is relieved all individual shareholders with these values of the discount rate and effective capital gains tax rate who pay income tax will prefer retentions. In the limiting case where ACT is never relieved individual shareholders are either indifferent to dividend policy or strictly prefer retentions. (Again, see the Appendix for details).

Given the diversity of shareholder tax positions in the UK under the present imputation system, it is almost impossible to make clear-cut statements as to whether a company is imposing unnecessary tax burdens on its shareholders by its dividend policy. Thus the simultaneous payment of dividends and issuing of new equity by a company which has unrelieved ACT, which has occurred frequently in recent years and has commonly

been regarded as a tax-inefficient way of financing investment, will in general be in the interest of institutional shareholders such as pension funds. As we have seen, tax-exempt shareholders will prefer full distribution except in the limiting case of permanently unrelieved ACT, when they will be indifferent to dividend policy. Nevertheless it is clear that simultaneous distribution and raising of new equity by a company which will be unable to relieve ACT for several years does impose unnecessary tax burdens on a substantial number of its individual shareholders.

In situations of this type, where some shareholders should favour high dividend payout and others low, there would seem to be an incentive for companies to adopt specific dividend policies which would make their shares attractive to particular 'clienteles' of shareholders in similar tax positions. For clientele effects to be significant it is obviously necessary for dividend policies to be stable over time. However there are some difficulties with the theory that clientele effects will lead firms to adopt different dividend policies. One is that the personal tax position of shareholders should make them either prefer full payout with all equity finance coming from new issues, or prefer that all equity finance come from retentions with dividends being paid only to the extent that they cannot profitably be reinvested, or be indifferent to dividend payout policy. But the observed stability of dividend policy is not of this form: it tends to be of the form that dividends should be a fixed proportion of some long-run measure of earnings. Companies which pay dividends and issue new shares usually do not pay out all current profits as dividends: they still use some retentions, which would not be in the interests of a clientele of shareholders with lower effective tax rates on dividends than capital gains. Similarly companies which have used retentions as their sole source of equity finance for several years are observed to make a new issue of equity without cutting their dividend to zero at the same time; this too is difficult to explain in terms of a clientele of shareholders with tax preferences for retentions as the primary source of equity funds.

There are two possible responses to these difficulties with the view that companies should arrange their dividend policies to attract clienteles who prefer either dividends or retentions. One is to note that the argument that firms will adjust their dividend policies so that clienteles of shareholders will develop implicitly requires that there be at least two firms of any particular type, where a type of firm means a particular degree of riskiness associated with returns from its investment. If there are two firms of each type then shareholders can hold any combination of shares in firms of particular types that they wish for reasons of portfolio diversification and, without sacrificing any diversification, arrange to hold either high payout or low payout shares according to their tax preferences. But if this condition is not met then there is a problem. Suppose there is a single firm with a particular pattern of returns which is attractive to all shareholders for portfolio diversification reasons. As it was made illegal in the UK in 1975 to issue a

separate class of shares which could receive payment in the form of further shares instead of cash, it is clearly impossible for this firm to adopt a payout policy which satisfies all of its shareholders. Such a possibility may explain why firms do not seem to behave in a way which is fully consistent with clientele effects operating on dividend policy, and why firms seem to have shareholders in widely differing tax positions. But it means that dividend policy can no longer be separated from investment policy, and raises some fundamental questions about the nature of stock market equilibrium when shareholder preferences conflict.

The other possible response is to argue that the fact that dividend policies tend to involve stability in the ratio of dividends to some long-run measure of earnings (or in the rate of growth of dividends), together with the evidence from situations where the corporation tax system is 'classical' and the absence of any dramatic response to the switch from a classical to an imputation system in the UK in 1973, implies that there is some other factor which explains why dividend policy is important. It is widely held that this missing link involves the information content of dividends, and this argument is discussed in the next section.

4. THE INFORMATION CONTENT OF DIVIDENDS

The arguments in the preceding two sections have been based on the assumption that changes in the firm's current period dividend payments do not affect stock market expectations about the uncertain future profitability of the firm's investment plan. But it is possible that changes in dividend payments contain information which leads stock market participants to change their expectations. The managers of the firm, who are of course 'insiders', will in general have better information about the firm's prospects than 'outsiders' such as shareholders, actual and potential lenders to the firm, and stock market participants generally. Both management and stock market participants will be able to benefit if some reliable means can be found for the management to communicate its superior information to the stock market. Shareholders obviously have an interest in receiving information from managers about the firm's prospects in order to make better portfolio allocation decisions. Managers who wish to raise additional (tax-favoured) debt finance will want to be able to persuade potential lenders that future prospects are sufficiently good that the risk premium on extra debt finance need only be very small. If the stock market in general has not yet realised that a particular firm's prospects have recently improved, but a take-over raider has, the existing management will want to be able to inform shareholders that the firm is currently undervalued and that they should not sell at the price the raider is offering.

Dividends seem to be an obvious candidate for the role of the signal by which the management conveys information to the stock market, for the intuitively plausible reason that the payment of dividends involves the

management 'putting its money where its mouth is' and hence an increase in the dividend payment is a more convincing way for management to inform the stock market that prospects have improved than a simple statement to this effect in the annual report. If changes in dividends do act as a signal in this way then the argument that dividend policy is irrelevant in the absence of differential personal taxes fails: stock market expectations of the profitability of the given investment plan will alter as the dividend payment changes, so that the total value of the firm's equity will depend on the dividend paid.

The view that dividend policy is important because changes in dividends act as a signal conveying information from management to the stock market is consistent with the apparent emphasis that is placed on the *change* in the dividend payment rather than on its level relative to earnings: empirical evidence leaves little doubt that it is sudden changes in dividend policy that lead to sharp changes in share price. The informational role of dividends can also in principle explain why firms are sometimes observed to impose unnecessary tax burdens on their shareholders by simultaneously paying dividends and issuing new shares. On this view the benefits of having a reliable means of transmitting information from management to the stock market are great enough to outweigh the tax cost involved in simultaneously paying dividends and issuing new equity. If dividends are to be a useful signal then changes in dividends must only occur when management has new information to communicate, so that the extra tax is worth paying because the alternative—cutting the dividend and the new equity issue—would be interpreted as signalling a deterioration in the firm's prospects. As a result, shareholder wealth might well be lower if both the dividend and the new equity issue were cut (because of the lower valuation of the firm's total equity) even though some tax had been saved. The cut in dividends might also have adverse effects in other respects, for example in raising the cost of debt finance to the firm.

The idea that dividend policy is important in practice because of its role as a means by which information is conveyed from management to shareholders is by no means a new one. It was mentioned by Miller and Modigliani in their original article as a possible explanation of the relevance of dividend policy, and it has appeared many times since. But although the notion that dividends are a signal seems plausible enough, some serious difficulties emerge when it is analysed in terms of the economic theory of signalling.

The theory of signalling was developed by Spence (1973, 1974) to analyse situations in which the information available about the quality of a commodity differs between the two sides of a market. The theory is concerned with the conditions under which agents can manipulate signals to reveal information about their goods, and when these signals will be effective, in that they reveal correctly the quality of the goods to the buyer. It is clear that this latter issue is crucial: to be effective a signal must convey

accurate information. In terms of a simple example where a good is of either high or low quality and only sellers know the quality of a particular good, this means that it must be the case that only sellers of the high quality good find it worthwhile to give a signal: sellers of the low quality good must find it in their interests not to signal, otherwise the signal clearly would not convey any useful information to buyers. The primary requirement for a signal to be effective in this sense is that there be some cost associated with the use of the signal which is negatively related to whatever it is that is being signalled—in terms of the above example, high quality sellers must have lower costs of signalling. It is clear that if the cost of signalling is higher for the low quality sellers than it is for the high quality sellers then it is possible for the latter group to find it profitable to signal while the former group finds it unprofitable to do so. In such a case signals will correctly reveal information about the quality of goods to buyers.

What then are the costs involved in using dividends as a signal? Consider two firms which are identical in all observable aspects apart from their current dividend payment; in particular they have the same current profits, investment and outstanding debt. Consequently the firm paying the higher dividend has to issue more new shares, and hence the first set of costs to consider are those associated with paying a higher dividend and raising more new equity finance which arise in the current period—the possible additional tax and transactions costs involved. So far as the tax costs are concerned there is no reason to think that the extra tax paid as a result of paying out relatively more of this period's profits as dividends will be larger for firms which will have relatively lower future earnings, as it depends solely on the personal tax position of shareholders. Similarly there is no reason for the administrative and underwriting costs involved in making a new share issue to be negatively related to future profitability. It might be argued that the underwriting costs could be larger for firms which had lower future earnings because the underwriters would offer less favourable terms, but the terms the underwriters will offer depend on their estimate of the probability that the market will take up the new issue. Hence the cost to the firm of paying a higher dividend and issuing new shares depends on the underwriters' perception of the market's attitude to the new issue; if it is assumed that the underwriters' perception is accurate this will be negatively related to the unobservable future earnings of the firm only if the market's attitude to the new issue is based on a correct assessment of the firm's future earnings, in which case it is hard to see what information the dividend payment is conveying.

It is therefore difficult to see what current period costs involved in using dividends as a signal could plausibly be argued to be negatively related to the unobservable future profit performance of the firm; so are there any future costs associated with dividends? It is possible to argue that the firm with low future profitability which pays a high dividend today will expect to have to use relatively more costly new equity finance because its future

profits will not be sufficient to maintain both the relatively high dividend and the same investment plan as the firm with high future profitability. In this way, it might be argued, the costs of paying dividends are higher for the low return firm, and so dividends can be an effective signal. But such an argument implicitly assumes some restriction on cutting dividends in the future, and it is not obvious why this should be so. It is always possible for a firm to signal in the current period that it is a high return firm; although its next period profits may be relatively low and so involve a dividend cut it will still benefit from the high valuation in the current period, so unless there is a penalty attached to cutting dividends which outweighs this benefit it will pay a high dividend in the current period and thus prevent dividends being an effective signal. If there are penalties for dividend cuts then dividends can be effective signals, but then if penalties for giving a false signal have to be invoked for dividends to be an effective signal it is not clear why the signal has to be via a payment of dividends. The signal could in such a case simply be a statement in the accounts about future prospects: if this statement proved to be false a penalty of some form could be imposed, and so the statement could be an effective signal. There is no reason why dividends should have to be paid at all as part of the signalling process, especially if doing so involves extra tax being paid.

Thus when the conditions which are required for dividend policy to be an effective signal are examined closely the idea that dividend policy is important because it is a means whereby the better-informed management conveys accurate information to the less well-informed stock market about changes in the firm's prospects becomes less plausible. The essential difficulty is that if dividend payout is to be used as an accurate way of distinguishing between otherwise identical firms which have different unobservable future profit prospects then there has to be some cost associated with dividend payment which is higher for the firm with lower earnings prospects and so makes it in the firm's interests not to pay a higher dividend. It is difficult to see what costs might fulfil this condition, and in their absence there is no incentive for the firm with lower future profit prospects not to pay a higher dividend in the present period in an attempt to reap the benefits of higher dividend payout. If this happens then dividend policy clearly does not distinguish between firms with high and low earnings prospects and so has no information content.

5. CONCLUSION

It is difficult to write a satisfactory conclusion to a paper the purpose of which is to explain why dividend policy is not well understood. It is clear that there are some shareholders who, because of legal restrictions, prefer the returns from their shareholdings to come as dividends rather than capital gains, but it is also clear that there are too few of these shareholders to explain the widespread importance attached to dividend policy. Under

some tax systems, for example the current UK imputation system, many, but not all, shareholders will prefer dividends to capital gains for tax reasons. In such circumstances clientele effects would be expected to arise, but as was noted in Section 3 observed behaviour does not seem to be consistent with such a theoretical prediction. This may be because the separation between dividend and investment policy can no longer be maintained once there are distinct groups of shareholders, or it may be because some other factor is important in explaining dividend policy. Evidence from situations where the tax system is such that for the vast majority of shareholders capital gains are never taxed more heavily than dividends, for example the UK between 1965 and 1973 and the USA, suggests that there probably is a factor other than differential taxation which is important in explaining dividend policy. The possible information content of dividends is widely regarded as this further reason for the importance of dividends, but the discussion in Section 4 made it clear that there are serious difficulties with this view.

Many empirical studies have already been conducted in an attempt to resolve the conflict between the theory and practice of dividend policy, and the reader may wonder why reference to empirical studies in this article has been so limited. The reason is that, in the author's judgement, existing empirical studies have amply documented the importance of dividend policy in practice but have failed to provide a satisfactory explanation of this importance.⁴ Thus dividend policy remains a puzzle, and further research is urgently needed, for until it is better understood there will be a significant gap in our knowledge of company behaviour which, for instance, means that the analysis of tax effects on company financial and investment behaviour is subject to severe limitations.

APPENDIX

ACT and shareholders' tax rates on dividends

If there are no complications involving unrelieved ACT a company's total corporation tax payment is independent of its dividend policy, so that a given sum (say £1) can either be retained or paid out as dividends. Given a constant investment policy, if £1 is retained then the value of existing shares is higher by an amount equal to £1. The shareholder's capital gains tax liability in this case is z , where z is the effective rate of tax on accrued capital gains. If the £1 is paid out as a dividend the shareholder pays additional income tax at a rate equal to the difference between his marginal income tax

⁴Three recent articles which the interested reader may consult to form his or her own judgement of the results of empirical studies of dividend policy are: Anderson (1983), Divecha and Morse (1983), and Miller and Scholes (1982). Taken together the references in these articles provide a thorough bibliography of empirical work on dividend behaviour.

rate m and 0.3 (the basic rate) on the notional grossed-up dividend of $£1/(1-0.3)$. Shareholders will be indifferent between payout and retention if the effective tax rates associated with the alternative policies are the same, so that

$$z = (m-0.3)/(1-0.3) \quad (3)$$

Clearly if $m = z = 0$ (as is the case for a tax-exempt shareholder) the income tax liability on dividends, being negative (a refund), is less than that on capital gains and so dividends are always preferred. If $m = 0.3$ then the income tax liability on dividends is zero, so dividends are preferred so long as $z > 0$. The maximum value that z can attain is 0.3, and using this in equation (3) gives 51% as the income tax rate above which retentions are unambiguously preferred.

When a company has unrelieved ACT £1 of profit if distributed increases ACT by £0.3 and net dividends by £0.7. At some date in the future this unrelieved ACT can be set off against subsequent tax liabilities, at which point net dividends increase by a further £0.3. If n is the number of years before unrelieved ACT can be set off and r is the shareholder's discount rate then the effective tax rate on dividends is given by two components:

- i) the immediate charge, equal to the unrelieved ACT of £0.3 plus the income tax liability on the notional grossed-up dividend of
- ii) the present value of the subsequent relief of £0.3 plus the income tax liability on £0.3/(1-0.3), which is given by

$$\frac{1}{(1+r)^n} \left\{ 0.3 - \frac{(m-0.3)0.3}{1-0.3} \right\}$$

The effective tax rate on £1 which is paid out as dividends when a company has unrelieved ACT is thus:

$$0.3 + \frac{(m-0.3)0.7}{1-0.3} - \frac{1}{(1+r)^n} \left\{ 0.3 - \frac{(m-0.3)0.3}{1-0.3} \right\} \quad (4)$$

If the £1 is retained it produces an appreciation of £1 on which the effective capital gains tax rate is z . Comparing z with expression (4) and substituting appropriate values for m , r , and n gives the results in the text. Note that the results for permanently unrelieved ACT are obtained by letting n tend to infinity in (4).

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