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Dividend policy: a review

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Abstract

Purpose – This paper aims to briefly review principal theories of dividend policy and to summarize empirical evidences on these theories.

Design/methodology/approach – Major theoretical and empirical papers on dividend policy are identified and reviewed.

Findings – It is found that the famous dividend puzzle is still unsolved. Empirical evidence is equivocal and the search for new explanation for dividends continues. Also a number of stylized empirical facts about dividends discovered by researchers are noted.

Research limitations/implications – As with any review paper, the major limitation is that necessarily some papers will be left out. Also as newer research is published the review paper will become more dated.

Originality/value – This paper will give the reader a comprehensive understanding of the dividend puzzle and the major paradigms of dividend policy. The paper will also give the reader the major stylized facts about dividend policy.

Keywords Dividends, Payments, Corporate finance

Paper type Literature review

1. Introduction

Explaining dividend policy has been one of the most difficult challenges facing financial economists. Despite decades of study, we have yet to completely understand the factors that influence dividend policy and the manner in which these factors interact. Two decades ago, Black (1976) wrote, “The harder we look at the dividend picture, the more it seems like a puzzle, with pieces that just don’t fit together” (p. 5). The situation is pretty much the same today. In a recent survey of dividend policy, Allen and Michaely (1995) conclude that “[m]uch more empirical and theoretical research on the subject of dividends is required before a consensus can be reached” (p. 833). The fact that a major textbook such as Brealey and Myers (2002) lists dividends as one of the ten important unsolved problems in finance reinforces this conclusion.

The first empirical study of dividend policy was provided by Lintner (1956), who surveyed corporate managers to understand how they arrived at the dividend policy. Lintner found that an existing dividend rate forms a bench mark for the management. Companies’ management usually displayed a strong reluctance to reduce dividends. Lintner opined that managers usually have reasonably definitive target payout ratios. Over the years, dividends are increased slowly at a particular speed of adjustment, so that the actual payout ratio moves closer to the target payout ratio.



Bond and Mougoue (1991) reexamine the partial adjustment model of dividend payment suggested by Lintner. They find that when earnings follow a linear autoregressive process, then there are many combinations of target payout rate and the speed of adjustment that would fit the same earnings stream and dividend stream. They conclude that, for firms with autocorrelated earnings, Lintner's partial adjustment model gives results that are not unique; thus, for such firms the partial adjustment model is not a succinct description of dividend policy.

2. Dividend irrelevance and tax clienteles

While Lintner (1956) provided the stylistic description of dividends, the watershed in the theoretical modelling of dividends was almost surely the classic paper Miller and Modigliani (1961), which first proposed dividend irrelevance. Essentially, their model is a one-period model under certainty. Given a firm's investment program, the dividend policy of the firm is irrelevant to the firm value, since a higher dividend would necessitate more sale of stock to raise finances for the investment program. The crucial assumption here is that the future market value will remain unaffected by current dividends.

The argument rests on the assumptions that the investment program is determined independently and that every stockholder earns the same return (i.e. the discount rate remains constant). Miller and Modigliani's dividend-irrelevance argument is elegant, but this does not explain why companies, the public, investment analysts are so interested in dividend announcements. Clearly, the observed interest in dividend announcement must be related to some violation of the Miller and Modigliani assumptions.

Miller and Modigliani, while formulating their famous dividend irrelevance propositions, observed that in the presence of taxation, investors will form clienteles with specific preferences for particular levels of dividend yields. This specific preference for dividends may be determined, *inter alia*, by the marginal tax rates faced by the investor. Altering the dividend level, according to Miller and Modigliani, leads only to a change in the clientele of shareholders for the firm.

Part of the dividend puzzle arises from the fact that dividends are typically taxed at a higher rate compared to the income from capital gains. This has certainly been historically true although in recent years we have noticed a move to eliminate/reduce tax on dividends. We should, therefore, expect investors to prefer cash from capital gains over cash from dividends. Miller and Scholes (1978) provide an ingenious scheme to convert dividend income to capital gains income. Their work provides a fresh rationale for the dividend irrelevance position. Their argument is based upon a common income tax provision which allows interest expenses to be deducted from income before applying tax. Miller and Scholes show that by borrowing an appropriate amount, the interest amount can be set off against the dividend income in a way that reduces the taxable income to zero. Miller and Scholes contend that the increases in risk due to borrowing can be countered by investing the borrowed amount in a risk-free insurance contract, where the amount accumulates at the risk-free rate. In this way, they argue, the tax shield on the interest expense can be used to neutralize the tax incidence on the dividend income without incurring any additional risk due to increased borrowing.

Peterson *et al.* (1985) look at the extent to which investors attempt to shield their dividend income from taxation, a la Miller and Scholes (1978). They look at returns selected from individual income tax returns filed. They find that 85 per cent of the filed returns report no dividend income. They also find that about 56 per cent of those assesses reporting dividend income, do not take advantage of interest deduction schemes a la Miller and Scholes.

Recently Allen *et al.* (2000) have advanced a theory based on the clientele paradigm to explain why some firms pay dividends and others repurchase shares. A variant of the clientele theory has also been advanced by Baker and Wurgler (2004) where they posit that dividend payments are in response to demands from investors for dividends.

3. Informational asymmetry and signalling models

Deviations from the Miller and Modigliani (1961) dividend irrelevance proposition is obtainable only when the assumptions underlying the setting of Miller and Modigliani are violated. The tax-clientele hypothesis uses the market imperfection of differential taxation of dividends and capital gains to explain the dividend puzzle. Bhattacharyya (1979) develops another explanation for the dividend policy based on asymmetric information. Managers have private knowledge about the distributional support of the project cash flow and they signal this knowledge to the market through their choice of dividends. In the signalling equilibrium higher value of the support is signalled by higher dividend. In other words, the better the news, the higher is the dividend.

Heinkel (1978) considers a set up where different firms have different return-generating abilities. This information is transmitted to the market by means of dividends, or equivalently, from investing at less than the first best level. In the equilibrium of Heinkel's model, the firm with less productivity invests up to its first best level and declares no dividend, while the firm with higher productivity invests less than its first best level of investment, and declares the difference between the amount raised and the amount invested as the dividend. The firm with higher productivity acts in this way in order to distinguish itself from the firm with less productivity. Dividends are still irrelevant in the sense that both firm types could raise an extra X dollars with a new issue to pay an extra X dollars as a dividend with no signalling effect. The signalling cost in this model comes from reduced investment from first best level. In contrast, the signalling cost in Bhattacharyya (1979) comes from taxation and non-symmetric cost of raising funds in the capital market.

Bhattacharyya and Heinkel's work was followed by a number of other papers which posited that dividends are used by managers to transmit information to the capital market. Notable works in signalling paradigm of dividend policy are those of Miller and Rock (1985), John and Williams (1985), Ambarish *et al.* (1987), and Williams (1988). These signalling models typically characterize the informational asymmetry by bestowing the manager or the insider with information about some aspect of the future cash flow. In the signalling equilibriums obtained in these models, the higher the expected cash flow, the higher is the dividend. In Miller and Rock (1985), the signalling cost is the opportunity cost of less than first best investment. In John and Williams (1985), Ambarish *et al.* (1987), and Williams (1988), the differential taxation of dividends vis-a-vis capital gains sustains the signalling equilibriums. In these papers dividends sustain a fully separating equilibrium. By contrast, Kumar (1988) demonstrates that dividends could also sustain a semi-separating equilibrium where the manager has private information about the productivity of the firm.

Bar-Yosef and Venezia (1991) set up a rational equilibrium expectation model. Bayesian investors expect that dividends will be proportional to cash flows. Managers have advance noisy information about the future cash flow. The investors observe the dividend and update their belief about the cash flow. Under these circumstances, Bar-Yosef and Venezia show that the optimal dividend is proportional to the cash flow.

Brennan and Thakor (1990) focus on a different question compared to the other signalling type papers on dividend policy. Most dividend policy papers model the

dividend decision, as a decision about the amount to be distributed as dividends. In contrast, this paper views the amount of cash to be distributed as exogenously given. It considers three forms of disbursement: dividend declaration, non-proportionate share repurchase through open market operation, and non-proportionate share repurchase through tender offer. Brennan and Thakor assume that there are two classes of shareholders – informed and uninformed. They show that in a tender offer, the uninformed shareholder always tenders, whereas the informed holds onto his/her shares. The situation is reversed in an open market operation, where the informed shareholder always sell his/her holding and the uninformed never does.

4. Free cash flow hypothesis

The rich theoretical development in modelling dividends as signals of private managerial/entrepreneurial information also gave rise to empirical research seeking to determine the fit of the signalling theory to real world data. Typically, the empirical literature[1] attempted to test the signalling paradigm counterpoised against an alternative rationale for dividends advanced by Jensen (1986), based on the principal-agent framework. According to this framework, dividends are used by shareholders as a device to reduce overinvestment by managers. The managers control the firm; therefore, they might invest cash in projects with negative net present values, but which increase the personal utility of the managers in some way. A dividend reduces this free cash flow and thus reduces the scope for overinvestment. The two most cited works in this genre are the papers by Easterbrook (1984) and by Jensen (1986). Unfortunately, neither of these papers try to model the situation; rather, they put forward plausible hypotheses.

On the one hand, Easterbrook (1984) hypothesizes that dividends are used to take away the free cash from the control of the managers and pay it off to shareholders. This ensures that the managers will have to approach the capital market in order to meet the funding needs for new projects. The need to approach the capital markets imposes a discipline on the managers, and thus reduces the cost of monitoring the managers. Additionally, Easterbrook hypothesizes that the imperative to approach the capital market also acts as a counterweight to the managers' own risk aversion.

Jensen (1986) on the other hand, contends that in corporations with large cash flows, managers will have a tendency to invest in low return projects. According to Jensen, debt counters this by taking away the free cash flow. Jensen contends that takeovers and mergers take place when either the acquirer has a large quantum of free cash flow or the acquired has a large free cash flow which has not been paid out to stakeholders. Although Jensen does not deal with the issue of dividends, empirical researchers of dividend policy often use Jensen's article for motivating tests of the free cash flow hypothesis of dividend policy.

The empirical evidence on the three hypotheses are mixed, as we observe in Table I. Dividend policy thus continues to remain a puzzle. We can however enumerate some interesting stylized facts. In Table II we compile the stylized facts as they emerge from a study of the empirical literature.

5. Conclusion

We have seen that the empirical evidence is equivocal about the existing theories of dividend policy. Research has discovered a large number of stylized facts but the explanation of dividend policy in an integrated framework still eludes us. In his PhD dissertation, Bhattacharyya (2000) explains dividend policy by using the asymmetric

Table I.
Findings of empirical
research vis-a-vis the
three hypotheses of
dividend policy

Research	Dividend clientele hypothesis		Signalling hypothesis		Agency hypothesis	
	Do not reject	Reject	Do not reject	Reject	Do not reject	Reject
Aharony and Swary (1980)			✓			
Bernheim and Wantz (1995)			✓			✓
Black and Scholes (1974)		✓				
Chaplinsky and Seyhun (1990)	✓					
Chen <i>et al.</i> (1990)		✓				
Christie (1994)				✓		✓
Denis <i>et al.</i> (1994)	✓		✓			✓
Dhillon and Johnson (1994)					✓	
Downes and Heinkel (1982)				✓		
Kao and Wu (1994)			✓			
Lakonishok and Vermaelen (1986)	✓					
Lang and Litzenberger (1989)				✓	✓	
Lewellen <i>et al.</i> (1978)		✓				
Litzenberger and Ramaswamy (1982)	✓					
Long <i>et al.</i> (1994)						✓
Manuel <i>et al.</i> (1993)			✓			
Michaely (1991)		✓				
Penman (1983)			✓			
Poterba (1986)		✓				
Sant and Cowan (1994)			✓			
Khorana and Servaes (1999)					✓	
Yoon and Starks (1995)						✓

information paradigm. However, unlike the signalling models (where the informed manager/insider uses the dividend as a signalling device), he posits dividend policy as a component of a screening contract set up by an uninformed principal. In signalling models, hidden information is the source of informational asymmetry. In the dissertation, he uses a richer source of informational asymmetry – that due to moral hazard (because the effort exerted by agent is not observable) and that due to hidden information (because the productivity of agent is not observable). He assumes that the manager wants to maximize his net wealth and the principal recognizes this and sets up a discriminating contract to utilize the skill of the agent in the productive enterprise.

He finds that contrary to the findings of the dividend models based on the signalling paradigm, dividend – conditional on cash availability – bears an inverse relationship to managerial type. That is, for a given level of available cash, the manager with lower productivity declares a higher dividend than that declared by a manager with higher productivity. He concludes that his model can be used to explain many of the empirical findings obtained by other researchers. An interesting corollary of his model is that when we include costly private effort and differences in productivity, the relationship between dividend and managerial type shifts from being monotone increasing to monotone decreasing. This relationship shows that incorporation of costly effort and difference in productivity modify the result (Miller and Rock, 1985) obtained. Miller and Rock study a model which does not include managerial effort. Another interesting implication of this dissertation is that dividends can be shown to be relevant in the presence of moral hazard and hidden information, even when the agency contract is optimally chosen.

Sl. no.	Stylized facts	Source of evidence and remarks
1	At large number of firms listed in NYSE do not pay any dividends	"In fact, more than 25% of firms listed on the New York Stock Exchange do not pay any dividends at all" (Lee, 1996, p. 33)
2	Managers are very unwilling to reduce dividends	Lintner (1956) noted this trend in his paper. DeAngelo and DeAngelo (1990) find that for 80 NYSE firms in financial crisis, managers are more willing to cut the level of dividend than to omit the dividend altogether. Recent survey result by Brav <i>et al.</i> (2005) also confirm this
3	Large dividend reductions are valued more severely by the market than dividend omission	Christie (1994) finds that for less than 20 per cent reduction, prices fall by about 4.95 per cent, while for reductions exceeding 60 per cent, prices fall by about 8.78 per cent. In contrast, prices fall by about 6.94 per cent for dividend omissions
4	Dividend increases (decreases) are associated with increase (decrease) in capital expenditures in subsequent years	Yoon and Starks (1995)
5	For IPOs, the earnings multiple is less for dividend paying stock than for non-dividend paying stock. The value of the firm is equal to the product of earnings multiple and earnings	Downes and Heinkel (1982) set up a regression linking the value of the firm with the product of earnings and a multiple. The multiple is assumed to be a function of the firm's many descriptors, one of which is a dummy variable which captures the information whether a dividend is paid or not. The sign of the coefficient of this variable is negative
6	With changes in dividends, price reactions for stocks are in the opposite direction to the price reactions for bonds	Dhillon and Johnson (1994)
7	Volatility of earnings, volatility of analysts forecasts and beta increase after dividend omission	Sant and Cowan (1994)
8	The longer the company has been paying dividends the stronger is the reluctance of the managers to reduce dividends	DeAngelo and DeAngelo (1990)
9	Industries with high growth options pay less dividends	Smith and Watts (1992) found this result with industry level data. Gaver and Gaver (1993) verify the results of Smith and Watts (1992) using a more rigorous methodology, and firm level data. They find that growth firms have lower debt/equity ratio and significantly lower dividend yields than non-growth firms. The growth firms also pay higher compensation to the executives than non-growth firms

(Continued)

Table II.
Stylized facts
on dividends

Sl. no.	Stylized facts	Source of evidence and remarks
10	Loss is a necessary condition for dividend reductions, but is not a sufficient one	DeAngelo <i>et al.</i> (1992)
11	Dividend reductions adversely affects the chances of managers obtaining outside directorships	Kaplan and Reishus (1990)
12	Investors value a dollar of cash dividend more than a dollar of stock dividend	Poterba (1986) reached this conclusion with his study of the return behavior on two classes of stock issued by The Citizen's Utility – one class paid stock dividends, and the other class paid cash dividend
13	For large publicly traded firms, executive compensation is influenced by dividends	Ferreira White (1996) examined the compensation contracts of 62 large companies in oil and gas, food processing, and defense/aerospace industries. Twentyeight of these had a dividend provision. Healy (1985) mentions that often the upper limit on the amounts to be transferred to a bonus pool is related to cash dividend payment on common stock. Consistent with Healy's work, Lewellen <i>et al.</i> (1987) find a statistically significant positive relationship between the short term component of executive compensation (i.e. salary and bonus) and dividend payout

Table II.

Some of the empirical implications of this model are quite different from some of the implications of the signalling models and the implications of the free cash flow hypothesis. Under the signalling theories, higher firm value is signalled by higher dividends. Therefore, under the signalling paradigm, dividend increases should result in positive abnormal returns on the announcement of dividends. Also, *ceteris paribus*, the value of the firm should be an increasing function of the dividend. By contrast, this theory says that higher dividends, conditioned on cash availability (i.e. for a given level of cash availability; or, if earnings are taken as proxy for cash availability, then for a given level of earnings), is an indication of lower agent type and should result in a lower abnormal return and lower firm value (*ceteris paribus*). The free cash flow conjecture (Easterbrook, 1984; Jensen, 1986) posits that higher dividends are better because higher dividend removes free cash from the hands of the managers; consequently, the managers have less money to waste. According to this conjecture, announcement of higher dividends would also lead to higher abnormal return.

The proof of the pudding, as the adage goes, is in eating, and the validity of a theory is the degree of its congruence with empirical reality. A properly conducted research will take into account the empirical implications of all the theories and test them simultaneously. This is the task for future.

Note

1. For example see Lang and Litzenberger (1989), Denis *et al.* (1994), Bernheim and Wantz (1995), Yoon and Starks (1995).

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