

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/230720120>

# Dividend Policy: A Review of Theories and Empirical Evidence

ARTICLE · JANUARY 2010

---

CITATIONS

11

---

READS

23,410

3 AUTHORS, INCLUDING:



[Husam-Aldin Al-Malkawi](#)

ALHOSN University

14 PUBLICATIONS 93 CITATIONS

SEE PROFILE

# Dividend Policy: A Review of Theories and Empirical Evidence

**Husam-Aldin Nizar Al-Malkawi**

*Corresponding Author, Faculty of Business, ALHOSN University  
P.O. Box 38772 - Abu Dhabi, UAE  
E-mail: h.almalkawi@alhosnu.ae*

**Michael Rafferty**

*Senior Research Analyst, WRC, University of Sydney, Australia  
E-mail: m.rafferty@econ.usyd.edu.au*

**Rekha Pillai**

*Faculty of Business, ALHOSN University, Abu Dhabi, UAE  
E-mail: r.pillai@alhosnu.ae*

## Abstract

The literature on dividend policy has produced a large body of theoretical and empirical research, especially following the publication of the dividend irrelevance hypothesis of Miller and Modigliani (1961). No general consensus has yet emerged after several decades of investigation, and scholars can often disagree even about the same empirical evidence. This paper aims at providing the reader with a comprehensive understanding of dividends and dividend policy by reviewing the main theories and explanations of dividend policy including dividend irrelevance hypothesis of Miller and Modigliani, bird-in-the-hand, tax-preference, clientele effects, signalling, and agency costs hypotheses. The paper also attempts to present the main empirical studies on corporate dividend policy. However, due to the enduring nature and extensive range of the debate about dividend policy which has spawned a vast amount of literature that grows by the day, a full review of all debates is not feasible. The paper reaches at a conclusion that the famous statement of Fisher Black about dividend policy "the harder we look at the dividends picture, the more it seems like a puzzle, with pieces that just do not fit together" (Black, 1976, p. 5) is still valid.

**Keywords:** Dividends, Dividend Policy, Dividend Policy Theories

**JEL Classification Codes:** G30, G32

## 1. Introduction

In corporate finance, the finance manager is generally thought to face two operational decisions: the investment (or capital budgeting) and the financing decisions. The capital budgeting decision is concerned with what real assets the firm should acquire while the financing decision is concerned with how these assets should be financed. A third decision may arise, however, when the firm begins to generate profits. Should the firm distribute all or proportion of earned profits in the form of dividends to the shareholders, or should it be ploughed back into the business? Presumably, in taking any course of action, managers should concentrate on how to maximise the wealth of shareholders for whom the

firm is being managed. Managers must not only consider the question of how much of the company's earnings are needed for investment, but also take into consideration the possible effect of their decisions on share prices (Bishop et al., 2000).

The term 'dividend policy' refers to "the practice that management follows in making dividend payout decisions or, in other words, the size and pattern of cash distributions over time to shareholders" (Lease et al., 2000, p.29). This issue of dividend policy is one that has engaged managers since the birth of the modern commercial corporation. Surprisingly then dividend policy remains one of the most contested issues in finance. The study of dividend policy has captured the attention of finance scholars since the middle of the last century. They have attempted to solve several issues pertaining to dividends and formulate theories and models to explain corporate dividend behaviour.

The dividend enigma has not only been an enduring issue in finance, it also remains unresolved. Almost three decades ago Black (1976) described it as a "puzzle", and since then an enormous amount of research has occurred trying to solve the dividend puzzle. Allen, Bernardo and Welch (2000, p.2499) summarised the current consensus view when they concluded "Although a number of theories have been put forward in the literature to explain their pervasive presence, dividends remain one of the thorniest puzzles in corporate finance".

The enduring nature and extensive range of the debate about dividend policy has spawned a vast amount of literature that grows by the day. For this reason, a full review of all debates is not feasible<sup>1</sup>. However, this paper endeavours to give justice to the importance of both the topic of dividend policy as an area of financial economic research, and also to the literature that has been produced addressing that topic, by reviewing the most important and influential studies in this area. It attempts to outline the main theories and explanations of dividend policies and to review the main empirical studies on corporate dividend policy.

The remaining of this paper is organized as follows. Section 2 gives a short background of corporate dividend policy. Section 3 analyses the theories of dividend policy starting with the dividend irrelevance hypothesis of Miller and Modigliani, and then the alternative hypotheses including bird-in-the-hand, tax-preference, clientele effects, signalling, and agency costs hypotheses. Section 4 summarises the paper.

## **2. Background of Corporate Dividend Policy<sup>2</sup>**

The issue of corporate dividends has a long history and, as Frankfurter and Wood (1997) observed, is bound up with the development of the corporate form itself. Corporate dividends date back at least to the early sixteenth century in Holland and Great Britain when the captains of sixteenth century sailing ships started selling financial claims to investors, which entitled them to share in the proceeds, if any, of the voyages<sup>3</sup>. At the end of each voyage, the profits and the capital were distributed to investors, liquidating and ending the venture's life. By the end of the sixteenth century, these financial claims began to be traded on open markets in Amsterdam and were gradually replaced by shares of ownership. It is worth mentioning that even then many investors would buy shares from more than one captain to diversify the risk associated with this type of business.

At the end of each voyage, the enterprise liquidation of the venture ensured a distribution of the profits to owners and helped to reduce the possibilities of fraudulent practice by captains (Baskin, 1988). However, as the profitability of these ventures was established and became more regular, the process of liquidation of the assets at the conclusion of each voyage became increasingly inconvenient and costly. The successes of the ventures increased their credibility and shareholders became more

---

<sup>1</sup> Lease et al. (2000), Allen and Michaely (2002) and more recently Baker (2009) provide excellent surveys of dividend policy literature.

<sup>2</sup> This section based heavily on Baskin (1988) and Frankfurter and Wood (1997).

<sup>3</sup> This type of business was called Commenda. Under the commenda, the commendator provided the capital and the commendatarius managed the investment (Walker, 1931, p.97).

confident in their management (captains), and this was accomplished by, among other things, the payment of “generous dividends” (Baskin, 1988). As a result, these companies began trading as going concern entities, and distributing only the profits rather than the entire invested capital. The emergence of firms as a “going concern” initiated the fundamental practice of firms to decide what proportion of the firms’ income (rather than assets) to return to investors and produced the first dividend payment regulations (Frankfurter and Wood, 1997). Gradually, corporate charters began to restrict the payments of dividends to the profits only.

The ownership structure of shipping firms gradually evolved into a joint stock company form of business. But it was chartered trading firms more generally that adopted the joint stock form. In 1613, the British East India Company issued its first joint stock shares with a nominal value. “No distinction was made, however, between capital and profit” (Walker, 1931, p.102). In the seventeenth century, the success of this type of trading company seemed poised to allow the spread of this form of business organization to include other activities such as mining, banking, clothing, and utilities. Indeed, in the early 1700’s, excitement about the possibilities of expanded trade and the corporate form saw a speculative bubble form, which collapsed spectacularly when the South Sea Company went into bankruptcy. The Bubble Act of 1711 effectively slowed, but did not stop, the development of the corporate form in Britain for almost a century (Walker, 1931).

In the early stages of corporate history, managers realized the importance of high and stable dividend payments. In some ways, this was due to the analogy investors made with the other form of financial security then traded, namely government bonds. Bonds paid a regular and stable interest payment, and corporate managers found that investors preferred shares that performed like bonds (i.e. paid a regular and stable dividend). For example, Bank of North America in 1781 paid dividends after only six months of operation, and the bank charter entitled the board of directors to distribute dividends regularly out of profits. “Paying consistent dividends remained of paramount importance to managers during the first half of the 19th century” (Frankfurter and Wood, 1997, p.24)

In addition to the importance placed by investors on dividend stability, another issue of modern corporate dividend policy to emerge early in the nineteenth century was that dividends came to be seen as an important form of information. The scarcity and unreliability of financial data often resulted in investors making their assessments of corporations through their dividend payments rather than reported earnings. In short, investors were often faced with inaccurate information about the performance of a firm, and used dividend policy as a way of gauging what management’s views about future performance might be. Consequently, an increase in dividend payments tended to be reflected in rising stock prices. As corporations became aware of this phenomenon, it raised the possibility that managers of companies could use dividends to signal strong earnings prospects and/or to support a company’s share price because investors may read dividend announcements as a proxy for earnings growth.

To summarise, the development of dividend payments to shareholders has been tied up with the development of the corporate form itself. Corporate managers realized early the importance of dividend payments in satisfying shareholders expectations. They often smoothed dividends over time believing that dividend reductions might have unfavourable effects on share price and therefore, used dividends as a device to signal information to the market. Moreover, dividend policy is believed to have an impact on share price. Since the 1950’s, the effect of dividend policy on firm value and other issues of corporate dividend policy have been subjected to a great debate among finance scholars. The next section considers these developments from both a theoretical and an empirical point of view.

### **3. Dividend Policy Theories**

The previous section established that dividend policy was bound up with the development of the corporate form itself. It was seen that the emergence of dividend policy as important to investors was, to some extent, driven by the evolving state of financial markets. Investing in shares was initially seen

as analogous to bonds, so regularity of payments was important. It was also seen that in the absence of regular and accurate corporate reporting, dividends were often preferred to reinvested earnings, and often even regarded as a better indication of corporate performance than published earnings accounts. However, as financial markets developed and became more efficient, it was thought by some that dividend policy would become increasingly irrelevant to investors. Why dividend policy should remain so evidently important has been theoretically controversial.

Three main contradictory theories of dividends can be identified. Some argue that increasing dividend payments increases a firm's value. Another view claims that high dividend payouts have the opposite effect on a firm's value; that is, it reduces firm value. The third theoretical approach asserts that dividends should be irrelevant and all effort spent on the dividend decision is wasted. These views are embodied in three theories of dividend policy: high dividends increase share value theory (or the so-called 'bird-in-the-hand' argument), low dividends increase share value theory (the tax-preference argument), and the dividend irrelevance hypothesis. Dividend debate is not limited to these three approaches. Several other theories of dividend policy have been presented, which further increases the complexity of the dividend puzzle. Some of the more popular of these arguments include the information content of dividends (signalling), the clientele effects, and the agency cost hypotheses. These are discussed in turn below beginning with dividend irrelevance hypothesis.

### **3.1. Dividend Irrelevance Hypothesis**

#### **3.1.1. The Basic Irrelevance Thesis**

Prior to the publication of Miller and Modigliani's (1961, hereafter M&M) seminal paper on dividend policy, a common belief was that higher dividends increase a firm's value. This belief was mainly based on the so-called "bird-in-the-hand" argument, discussed in more detail shortly. Graham and Dodd (1934), for instance, argued that "the sole purpose for the existence of the corporation is to pay dividends", and firms that pay higher dividends must sell their shares at higher prices (cited in Frankfurter et al., 2002, p.202). However, as part of a new wave of finance in the 1960's, M&M demonstrated that under certain assumptions about perfect capital markets, dividend policy would be irrelevant.

Given that in a perfect market dividend policy has no effect on either the price of a firm's stock or its cost of capital, shareholders wealth is not affected by the dividend decision and therefore they would be indifferent between dividends and capital gains. The reason for their indifference is that shareholder wealth is affected by the income generated by the investment decisions a firm makes, not by how it distributes that income. Therefore, in M&M's world, dividends are irrelevant. M&M argued that regardless of how the firm distributes its income, its value is determined by its basic earning power and its investment decisions. They stated that "...given a firm's investment policy, the dividend payout policy it chooses to follow will affect neither the current price of its shares nor the total returns to shareholders" (p.414). In other words, investors calculate the value of companies based on the capitalised value of their future earnings, and this is not affected by whether firms pay dividends or not and how firms set their dividend policies. M&M go further and suggest that, to an investor, all dividend policies are effectively the same since investors can create "*homemade*" dividends by adjusting their portfolios in a way that matches their preferences.

M&M based their argument upon idealistic assumptions of a perfect capital market and rational investors. The assumptions of a perfect capital market necessary for the dividend irrelevancy hypothesis can be summarized as follows: (1) no differences between taxes on dividends and capital gains; (2) no transaction and flotation costs incurred when securities are traded; (3) all market participants have free and equal access to the same information (symmetrical and costless information); (4) no conflicts of interests between managers and security holders (i.e. no agency problem); and (5) all participants in the market are price takers. Given the importance of M&M's argument in the dividend policy debate, the following section provides their proof of irrelevancy.

### 3.1.2. M&M Proof of Irrelevancy<sup>4</sup>

To understand the M&M proposition of dividend irrelevancy, we shall start with the basic valuation model of common stock, which is the dividend discount model (DDM). Generally, the DDM states that the value of a stock is a function of future dividends (as a proxy for earnings) and the required rate of return on the stock. For example, the value of a share at time zero (today) is simply the present value of all future dividends discounted at an appropriate discount rate. This can be expressed as follows:

$$P_0 = \sum_{t=1}^{\infty} \frac{D_t}{(1+r_t)^t} \quad , \quad (1)$$

where,  $P_0$  is the current share price;  $t$  is the time of the dividend;  $D_t$  is the dividends paid at period  $t$ ; and  $r_t$  is the required rate of return for period  $t$ . The DDM suggests that future discounted dividends ( $D_t$ ) are the underlying determinant of the value of the current share price ( $P_0$ ), and not any future share price. The share price is the critical determinant of the firm value ( $V_0$ ). Accordingly, more dividends increase the value of the firm, other things being equal. This intuition was generally accepted by most of the economists until M&M published their paper, initiating a new direction in the dividend controversy thereafter.

In a perfect capital market the required rate of return for an investor on equity shares ( $r$ ) is equal to dividends plus capital gains. That is (assuming one period world),

$$r = \frac{D_1 + (P_1 - P_0)}{P_0} \quad , \quad (2)$$

where,  $P_0$  is the current market price of shares;  $P_1$  is the expected market price at the end of period one (the ex-dividend price of the share); and  $D_1$  is the dividend at the end of the period. Rearranging equation (2) we can obtain the current market price of shares as:

$$P_0 = \frac{D_1 + P_1}{(1+r)} \quad ; \quad (3)$$

Note that equation (3) can be derived also from the basic valuation model (1). Now, if we let  $n$  be the number of shares outstanding at time zero, then the current value of the firm ( $V_0$ ) is

$$nP_0 = V_0 = \frac{nD_1 + nP_1}{(1+r)} \quad ; \quad (4)$$

Recall that M&M stated that in a perfect capital market, firm value is independent of dividend policy. To illustrate, we can employ the sources and uses of funds equation. Given the assumption that the market value of the firm is independent of capital structure ([Modigliani and Miller, 1958](#)), debt financing is excluded from the analysis. On one hand, the firm's sources of funds are cash flow from operations ( $CF_1$ ) and any new equity financing ( $mP_1$ ), where  $m$  is number of shares issued at time one. On the other hand the uses of funds are dividends payments ( $nD_1$ ) and investment made during the period ( $I_1$ ). Since sources must equal the uses of funds, thus:

$$CF_1 + mP_1 = nD_1 + I_1 \quad ; \quad (5)$$

Rearranging equation (5), we obtain

$$nD_1 = CF_1 + mP_1 - I_1 \quad ; \quad (6)$$

Substituting equation (6) into equation (4), for  $D_1$  we have

---

<sup>4</sup> The following is a synthesis of several accounts (see, for example, Bishop et al., 2000, Lease et al., 2000, and Allen and Michaely, 2002).

$$V_0 = \frac{CF_1 + mP_1 - I_1 + nP_1}{(1+r)} ; \quad (7)$$

$$V_0 = \frac{CF_1 - I_1 + (n+m)P_1}{(1+r)} ; \quad (8)$$

Since  $(n+m)P_1 = V_1$ , hence

$$V_0 = \frac{CF_1 - I_1 + V_1}{(1+r)} . \quad (9)$$

As dividends do not appear in the equation (9), and since operating cash flows ( $CF_1$ ), investments ( $I_1$ ) and required rate of return ( $r$ ) are not functions of dividend policy (either by their nature or by assumption), the value of the firm is thus independent of its current dividend policy (see M&M, 1961, p.414). This analysis can be repeated for more periods and the results will remain the same; that is, the value of the firm is unaffected by dividend policy.

The notion that in perfect capital markets dividend policy should be irrelevant is a logical extension of the neoclassical proposition of perfect competition into financial economics. Its elegance and simplicity were recognised by M&M. For instance, they observed in their initial paper that, “Like many other propositions in economics, the irrelevance of dividend policy, given investment policy, is ‘obvious, once you think of it’” (M&M, 1961, p.414).

The above discussion suggests that the firm’s investment policy is the key determinant of its value and dividend policy is the residual. Operating cash flows depend on investments. In other words, the firm’s investments in positive net present value (NPV) projects will increase the cash flows from operation, which is the only way to increase the value of the firm. In summary, given the assumptions of perfect capital markets, the firm’s future cash flow from investment activities is the sole determinant of the value of the firm. The firm’s payout policy must therefore be independent of its value (Bishop et al., 2000).

### 3.1.3. Empirical Evidence

The M&M dividend irrelevance proposition has provided the foundation for much subsequent research on dividend policy. However, as stated by Ball et al. (1979, p.14), empirical tests of M&M’s “dividend irrelevance theorem have proven difficult to design and to conduct”. Recall that M&M built their conclusions on a certain set of assumptions of perfect capital markets. Relaxing one or more of these assumptions has formed the basis for most of theoretical and empirical studies.

In line with the dividend irrelevance hypothesis, [Black and Scholes \(1974\)](#) examined the relationship between dividend yield and stock returns in order to identify the effect of dividend policy on stock prices<sup>5</sup>. They constructed 25 portfolios of common stocks listed on the New York Stock Exchange (NYSE), extending the capital asset pricing model (CAPM) to test the long run estimate of dividend yield effects. The study employed the following regression model:

$$E(\tilde{R}_i) = \gamma_0 + [E(\tilde{R}_M) - \gamma_0] \beta_i + \frac{\gamma_1(\delta_i - \delta_M)}{\delta_M} + \varepsilon_i , \quad (10)$$

where,  $E(\tilde{R}_i)$  is the expected return on portfolio  $i$ ,  $E(\tilde{R}_M)$  is the expected return on the market portfolio,  $\gamma_0$  is an intercept to be compared with short-term risk free rate  $R$ ,  $\beta_i$  is the systematic risk of portfolio  $i$ ,  $\gamma_1$  is the impact of dividend policy,  $\delta_i$  is the dividend yield on portfolio  $i$ ,  $\delta_M$  is the dividend yield on the market, and  $\varepsilon_i$  is the error term.

<sup>5</sup> It is worth pointing out that Black and Scholes’s study tested the tax-effect hypothesis, but it is presented here because its conclusion strongly supported M&M’s irrelevance proposition.

Black and Scholes used a long-term definition of dividend yield (previous year's dividends divided by the year-end share price). Their results showed that the dividend yield coefficient ( $\gamma_1$ ) is not significantly different from zero either for the entire period (1936-1966) or for any of shorter sub-periods. That is to say, the expected return either on high or low yield stocks is the same. Black and Scholes, therefore, concluded that, "we are unable to show that differences in yield lead to differences in stock prices" (p.18). Stated another way, in their study neither high-yield nor low-yield payout policy of firms seemed to influence stock prices. Black and Scholes's conclusion lent important empirical support to M&M's dividend irrelevance argument. Other studies by leading financial economic researchers such as Miller and Scholes (1978,1982), Hess (1981) Miller (1986), and more recently, Bernstein (1996) provided evidence in support of the dividend irrelevance hypothesis (hereafter DIH).

While some empirical research supported the DIH, other research was not so supportive or provided evidence directly challenging the irrelevance hypothesis<sup>6</sup>. Building on Black and Scholes's work, Ball et al. (1979) examined the effect of dividends on firm value using Australian data over the period 1960 to 1969. Ball et al., however, failed to find conclusive evidence to support M&M's irrelevance proposition. Baker, Farrelly and Edelman (1985) surveyed the chief financial officers (CFOs) of 562 firms listed on the New York Stock Exchange (NYSE) from three industry groups (150 utilities, 309 manufacturing, and 103 wholesale/retail). Based on 318 responses, they found that respondents strongly agreed that dividend policy affects common stock prices. In another survey study, Partington (1985) found that Australian senior managers viewed dividend payments as a way to satisfy shareholders and support the share price. In a more recent study, Baker and Powell (1999) surveyed 603 CFOs of US firms listed on the NYSE, and observed that 90 percent of respondents believed that dividend policy affects a firm's value as well as its cost of capital. Further studies by the same authors tend to confirm that dividend policy actually matters in the determination of firm value<sup>7</sup>. Other studies including Siddiqi (1995) and Casey and Dickens (2000) have provided evidence inconsistent with DIH.

Despite all the empirical work testing the DIH, the impact of dividend policy on the value of a firm remains unresolved. As showed earlier, the proposition of dividend irrelevancy was based on several binding assumptions about the nature of perfect capital markets. This is an 'a priori' model of how markets should work if they were perfect. Naturally, once we depart M&M's world of perfect capital market and relax one or more of the assumptions of perfect capital markets, the issue of dividend policy becomes more complicated. Introducing market imperfections might change the view that dividend decision is irrelevant. Importantly, if dividend policy is relevant it may interact with other decisions made by the firm about investment and financing. In other words, there may conceivably be a range of reasons why dividend policy might matter. As noted in the introduction of this paper, the findings that dividends do matter have spurred a range of theoretical (and descriptive) explanations as to the cause of relevancy. The following sections review the main alternatives to DIH, starting with the 'bird-in-the-hand' argument.

## **3.2. High Dividends Increase Stock Value (Bird-In-The-Hand Hypothesis)**

### **3.2.1. The Basic Argument**

One alternative and older view about the effect of dividend policy on a firm's value is that dividends increase firm value. In a world of uncertainty and imperfect information, dividends are valued differently to retained earnings (or capital gains). Investors prefer the "bird in the hand" of cash dividends rather than the "two in the bush" of future capital gains. Increasing dividend payments, ceteris paribus, may then be associated with increases in firm value. As a higher current dividend reduces uncertainty about future cash flows, a high payout ratio will reduce the cost of capital, and

---

<sup>6</sup> A representative sample of that debate would include: Lintner (1962), Gordon (1963) Walter (1963), Baumol (1963), Brigham and Gordon (1968), and Van Horn and McDonald (1971).

<sup>7</sup> See Baker, Veit, and Powell (2001) and Baker, Powell and Veit (2002a, 2002b).



hence increase share value. That is, according to the so-called “bird-in-the hand” hypothesis (henceforth BIHH) high dividend payout ratios maximize a firm’s value. Graham and Dodd, for instance, argued that a dollar of dividends has, on average, four times the impact on stock prices as a dollar of retained earnings (see Diamond, 1967,p.16). Studies that provide support for the BIHH include Gordon and Shapiro (1956) Gordon (1959, 1963), Lintner (1962), and Walter (1963).

M&M (1961) have criticized the BIHH and argued that the firm’s risk is determined by the riskiness of its operating cash flows, not by the way it distributes its earnings. Consequently, M&M called this argument the bird-in-the-hand fallacy. Further, Bhattacharya (1979) suggested that the reasoning underlying the BIHH is fallacious. Moreover, he suggested that the firm’s risk affects the level of dividend not the other way around. That is, the riskiness of a firm’s cash flow influences its dividend payments, but increases in dividends will not reduce the risk of the firm. The notion that firms facing greater uncertainty of future cash flow (risk) tend to adopt lower payout ratios seems to be theoretically plausible (see, for example, Friend and Puckett, 1964). Empirically, Rozeff (1982) found a negative relationship between dividends and firm risk. That is, as the risk of a firm’s operations increases, the dividend payments decrease (see also Jensen, Solberg, and Zorn, 1992).

### 3.2.2. Empirical Evidence

Gordon (1959) suggested that there were three possible hypotheses for why investors would buy a certain stock. First to obtain both dividends and earnings second, to obtain dividends, and finally to get the earnings. He examined these hypotheses by estimating different regression models using cross-section sample data of four industries (chemicals, foods, steels, and machine tools) for two years 1951 and 1954. The dividend hypothesis was tested using a linear regression, which is similar to the following equation,

$$P_{it} = \alpha_0 + \alpha_1 D_{it} + \alpha_2 R_{it} + \varepsilon_{it} \quad (11)$$

where, for firm  $i$  and period  $t$ ,  $P$ ,  $D$ , and  $R$  are the share price, dividends, and the retained earnings, respectively. The reciprocal of the dividend coefficient  $\alpha_1$  is the estimated required rate of return on common stocks without growth, and the coefficient on retained earnings  $\alpha_2$  is the price for growth. Gordon found that dividends have greater influence on share price than retained earnings. In addition, he argued that the required rate of return on a share increases with the fraction of retained earnings because of the uncertainty associated with future earnings. Similarly, Gordon (1963) argued that higher dividend payouts decrease the cost of equity or the required rate of return on equity. Using British data for the period between 1949 and 1957, Fisher (1961) reached a similar finding that dividends have greater impact on share prices than retained earnings.

Equation (11), however, was subject to several criticisms. Firstly, it does not take into account the risk variation among firms drawn from different industries, and this may lead to an upward bias in the coefficient on dividends  $\alpha_1$ . That is, high risk associated with a stock may result in low price and low payout, while low risk associated with a stock may result in high payout and low price. Secondly, the equation accounts only for the growth coming from investments that are financed with retained earnings, while it ignores the growth that may come from the use of external financing. This may bias the coefficient of retained earnings  $\alpha_2$ . Thirdly, since dividends are more stable than reported earnings, the short-run fluctuations in income will be mainly reflected in change in retained earnings. If share prices and dividends are related to normal rather than reported income, the equation is biased in favour of dividends. Finally, dividends are measured more precisely than retained earnings because the estimated retained earnings depend on the accounting procedure followed to measure total earnings, which will place an additional downward bias on the retention coefficient  $\alpha_2$  (see Friend and Puckett, 1964, and Diamond, 1967).

To correct for the potential bias resulting from the criticisms mentioned above (especially 1 and 2), Diamond (1967) introduced into the regression equation (11) the average three-year earning-price

ratio centred on  $t-1$ . He examined the impact of dividends and retained earnings on share prices for a sample of 255 US firms from eight industries for 1961 and 1962. Diamond found only weak support for the notion that investors have preference for dividends over retained earnings. Alternatively, he found that in industries where rates of growth were relatively high, retained earnings were preferred marginally more than dividends, whereas in mature industries with low growth rate a dollar of dividends is slightly preferred to a dollar of retained earnings. This suggests a negative relationship between a firm's growth and dividend payout<sup>8</sup>. The results obtained by Diamond (1967) are consistent with earlier findings of Friend and Puckett (1964).

More recently, Baker, Powell and Veit (2002a) surveyed managers of NASDAQ firms to assess their view about dividend policy issues including the BIHH. Their questionnaire contains one statement about the BIHH, stating "investors generally prefer cash dividends today to uncertain future price appreciation". Based on 186 responses, only 17.2 percent agree with the statement, 28 percent no opinion, and 54.9 percent disagree. Therefore, they conclude, "...this finding does not provide support for the bird-in-the-hand explanation for why companies pay dividends"(p.278)<sup>9</sup>.

Empirical support for the BIHH as an explanation for paying dividends is generally very limited, and the argument has been challenged especially by M&M (1961) who argued that the required rate of return (or the cost of capital) is independent of dividend policy, suggesting that investors are indifferent between dividends and capital gains. Indeed based on the tax-preference explanation, discussed shortly, researchers such as Litzenberger and Ramaswamy (1979), among others, develop an explanation of dividend policy that reaches the opposite result. That is, investors are disadvantaged in receiving cash dividends. The next section examines the argument that low dividends are preferred to higher dividends.

### **3.3. Low Dividends Increase Stock Value (Tax-Effect Hypothesis)**

#### **3.3.1. The Basic Argument**

The M&M assumptions of a perfect capital market exclude any possible tax effect. It has been assumed that there is no difference in tax treatment between dividends and capital gains. However, in the real world taxes exist and may have significant influence on dividend policy and the value of the firm. In general, there is often a differential in tax treatment between dividends and capital gains, and, because most investors are interested in *after-tax* return, the influence of taxes might affect their demand for dividends. Taxes may also affect the supply of dividends, when managers respond to this tax preference in seeking to maximize shareholder wealth (firm value) by increasing the retention ratio of earnings.

The tax-effect hypothesis suggests that low dividend payout ratios lower the cost of capital and increase the stock price. In other words low dividend payout ratios contribute to maximising the firm's value. This argument is based on the assumption that dividends are taxed at higher rates than capital gains. In addition, dividends are taxed immediately, while taxes on capital gains are deferred until the stock is actually sold. These tax advantages of capital gains over dividends tend to predispose investors, who have favourable tax treatment on capital gains, to prefer companies that retain most of their earnings rather than pay them out as dividends, and are willing to pay a premium for low-payout companies. Therefore, a low dividend payout ratio will lower the cost of equity and increases the stock price. Note that, this prediction is almost the exact opposite of the BIHH, and of course challenges the strict form of the DIH.

In many countries a higher tax rate is applied to dividends as compared to capital gains taxes. Therefore, investors in high tax brackets might require higher pre-tax risk-adjusted returns to hold

---

<sup>8</sup> Fama and French (2001) found that firms with higher growth and investments tended to have lower payouts.

<sup>9</sup> In an earlier survey, Baker and Powell (1999) found a similar rate of agreement (17.7 percent) about the bird-in-the hand explanation of dividend relevance.

stocks with higher dividend yield. This relationship between pre-tax returns on stocks and dividend yields is the basis of a posited tax-effect hypothesis.

Brennan (1970) developed an after-tax version of the capital asset pricing model (CAPM) to test the relationship between tax risk-adjusted returns and dividend yield. Brennan's model maintains that a stock's pre-tax returns should be positively and linearly related to its dividend yield and to its systematic risk. Higher pre-tax risk adjusted returns are associated with higher dividend yield stocks to compensate investors for the tax disadvantages of these returns. This suggests that, *ceteris paribus*, a stock with higher dividend yield will sell at lower prices because of the disadvantage of higher taxes associated with dividend income. The Brennan model can be described as:

$$E(R_{it} - R_{ft}) = \gamma_0 + \gamma_1 \beta_{it} + \gamma_2 (D_{it} - R_{ft}) \quad , \quad (12)$$

where,  $R_{it}$  is the return on stock  $i$  in period  $t$ ,  $R_{ft}$  is the riskless rate of interest,  $\beta_{it}$  is beta coefficient for stock  $i$  in period  $t$  (systematic risk), and  $D_{it}$  is the dividend yield of stock  $i$  in period  $t$ . It is assumed that the coefficient  $\gamma_2$  is interpreted as an implicit tax bracket and is independent of the level of the dividend yield  $D$ . If the coefficient of dividend yield ( $\gamma_2$ ) is statistically different from zero and positive, the results are interpreted as evidence of a tax effect. That is, higher pre-tax risk-adjusted returns are necessary to compensate investors for holding high-dividend-paying stocks because of the disadvantage associated with dividend income. The following section presents the debate concerning the above argument.

### 3.3.2. Empirical Evidence

A large body of empirical research is devoted to testing Brennan's model and to understanding the relationship between dividend yields and stock returns. For example, Black and Scholes (1974) tested Brennan's model and found no evidence of a tax effect. Recall from Section 0 that the coefficient of dividend impact in Black and Scholes's model was found to be insignificant. Therefore, they concluded that low or high-dividend yield stocks do not affect the returns of stocks either before or after taxes. However, Litzenberger and Ramaswamy (1979) strongly challenged the results of Black and Scholes and criticised their methods, especially their definition of dividend yield. Litzenberger and Ramaswamy extended Brennan's (1970) model and used a monthly dividend yield definition in classifying stock into yield classes, a positive dividend-yield class and zero dividend-yield class.

The results of Litzenberger and Ramaswamy show that the coefficient on dividend yield variable ( $\gamma_2$ ) is positive and highly significant, under OLS, GLS, and MLE<sup>10</sup>. Therefore, they provided empirical support for Brennan's (1970) model. Litzenberger and Ramaswamy (1979,p.190) concluded that, "for every dollar increase in return in the form of dividends, investors require an additional 23 cents in before tax returns". Of interest, the dividend coefficient  $\gamma_2$  (0.236) obtained by Litzenberger and Ramaswamy is consistent in magnitude with that reported by Black and Scholes (1974). The implication of Litzenberger and Ramaswamy's findings is that firms could increase their share prices by reducing dividends. However, if this prediction holds, one may raise a question about why corporations pay dividends at all?

Miller and Scholes (1982) challenged Litzenberger and Ramaswamy's conclusion, and criticised their short-term (monthly) definition of dividend yield. They suggested that tests employing a short-term dividend yield definition are inappropriate for detecting the impact of differential tax treatment of dividends and capital gains on stock returns. Furthermore, Miller and Scholes argued that the positive yield-return relation was caused by information bias. The reason for this argument is that Litzenberger and Ramaswamy ignored the information effect of dividend omissions. An announcement of dividend omissions (perceived as bad news) may result in an upward bias in the dividend yield

<sup>10</sup> Blume (1980) reported positive and significant dividend yield coefficient, using long-run measure of yield.

coefficient, since it reduces the return of the zero yield-dividend class. Miller and Scholes attempted to correct for the information bias and then re-ran Litzenberger and Ramaswamy tests. They found that the dividend yield coefficient was not statistically different from zero. Hess (1981) found similar results to Miller and Scholes. In his study, Hess tested the relation between the monthly stock returns and dividend yield over the period of 1926 to 1980. He found mixed results and concluded, "... my work reinforces the findings of Miller-Scholes study...it lends further empirical support to the original M&M proposition" (p.453).

Litzenberger and Ramaswamy (1982) re-examined the relationship between dividend yield and stock returns after adjusting the dividend yield coefficient for any potential information effects. Their results, consistent with their previous findings, were that the yield coefficient is positive and statistically significant. Kalay and Michaely (2000) re-examine the Litzenberger and Ramaswamy (1979) experiment using weekly data. They attempt to find whether the positive dividend yield obtained by Litzenberger and Ramaswamy is due to tax effects or to the information effects as conjectured by Miller and Scholes (1982). Kalay and Michaely exclude all weeks containing dividend omissions. They find a positive and significant dividend yield coefficient, inconsistent with Miller and Scholes's conjecture that the positive yield coefficient is driven by information biases<sup>11</sup>. Furthermore, using daily and monthly British data, Poterba and Summers (1984) provide evidence that strongly supports the tax-effect hypothesis.

Along the lines of Litzenberger and Ramaswamy (1979) and Blume (1980), Keim (1985) used the Sharpe-Lintner CAPM to estimate the relation between long-run dividend yields and stock returns. He used a sample of 429 US firms in January 1931 and 1289 firms in December 1978. In his study, Keim constructed six dividend-yield portfolios. The first portfolio contained all zero-dividend firms, and the other five ranked from lowest to highest positive dividend-yield firms. Consistent with Blume (1980), he documented a non-linear relation between dividend yields and stock returns, and his results rejected the hypothesis that average returns are equal across portfolios. Moreover, Keim tested the impact of firm size and stock return seasonality on the relationship between stock returns and dividend yields. He found a positive and significant yield coefficient. However, much of the non-linear relation was concentrated in the month of January for small firms. Nonetheless, Keim obtained the same results even after controlling for firm size. In addition, Keim reported an inverse relationship between positive yield and firm size as measured by market capitalization. Taken together, Keim concluded, "At a minimum, the results suggest the observed relation between long-run dividend yields and stock returns may not be solely attributable to difference in marginal tax rates for dividends and capital gains" (p.487). By and large, Keim's results suggest a yield-related tax effect. However, because of the significant effect of the month of January (seasonality) on the relation between dividend yields and stock returns these findings are not totally consistent with the after-tax CAPM. This conclusion deepens the puzzle surrounding the issue of a yield-related tax effect.

More recently, using UK data Morgan and Thomas (1998) examine the relationship between dividend yields and stock returns over the period 1975 to 1993. Drawing on Keim's (1985) methodology, Morgan and Thomas tested the tax-based hypothesis in which dividend yields and stock returns are positively related. However, as they have pointed out, under the 1973 imputation tax system capital gains received a disadvantaged tax treatment when compared to dividend income; consequently the tax-based hypothesis, in the case of the UK, would predict a negative relation between dividend yields and risk-adjusted stock returns. To clarify, stocks with low yields should produce higher returns to compensate stockholders for the increased tax burden associated with capital gains, and vice versa. Contrary to prediction, Morgan and Thomas find a positive relationship between dividend yields and stock returns. Moreover, their results suggest a non-linear relation between risk-adjusted returns and dividend yield, which is inconsistent with Brennan's model. Also, firm size and seasonality seems to influence the relationship between dividend yield and stock returns. Morgan and Thomas were therefore unable to provide support for the tax-effect hypothesis. In a previously mentioned study,

---

<sup>11</sup> Also, Morgan (1982) had shown evidence inconsistent with the Miller and Scholes conjecture.

Baker et al. (2002a) surveyed the managers of 630 NASDAQ firms and found weak or no support for the tax-preference theory.

To summarise, the tax-effect hypothesis (hereafter called TEH) is based on a simple proposition. Many investors are faced with dividends being taxed at a higher rate than capital gains. In addition, dividends are taxed immediately, while taxes on capital gains are deferred until the gains are actually realized. Therefore, the TEH suggests that taxable investors will demand superior pre-tax returns from stocks that pay a large proportion of their income in the form of highly taxed dividends. In other words, investors will value the dollar of capital gains greater than a dollar of dividends, resulting in lower dividend-stocks selling at a relative premium to their higher-dividend counterparts. From the empirical studies referenced above, the evidence with respect to the TEH appears to be inconclusive.

In all of the studies discussed above the TEH has been addressed from one perspective: the relationship between dividend yields and the stock returns (CAPM-based studies). The literature, however, has also provided a vast amount of empirical research on the TEH by examining the behaviour of stock prices around the ex-dividend day (ex-dividend day studies). This issue will be addressed separately in the next section under the clientele effects hypothesis.

### **3.4. Clientele Effects of Dividends Hypothesis**

#### **3.4.1. The Basic Argument**

In their seminal paper M&M (1961) noted that the pre-existing dividend clientele effect hypothesis (hereafter DCH) might play a role in dividend policy under certain conditions. They pointed out that the portfolio choices of individual investors might be influenced by certain market imperfections such as transaction costs and differential tax rates to prefer different mixes of capital gains and dividends. M&M argued that these imperfections might cause investors to choose securities that reduce these costs. M&M termed the tendency of investors to be attracted to a certain type of dividend-paying stocks a “dividend clientele effect”<sup>12</sup>. Nonetheless, M&M maintained that even though the clientele effect might change a firm’s dividend policy to attract certain clienteles, in a perfect market each clientele is “as good as another”; hence the firm valuation is not affected; that is, dividend policy remains irrelevant.

In practice, investors often face different tax treatments for dividend income and capital gains, and incur costs when they trade securities in the form of transaction costs and inconvenience (changing portfolios). For these reasons and based on different investors’ situations, taxes and transaction costs may create investor clienteles, such as tax minimisation induced clientele and transaction cost minimisation induced clientele respectively<sup>13</sup>. These clienteles will be attracted to firms that follow dividend policies that best suit their particular situations. Similarly, firms may tend to attract different clienteles by their dividend policies. For example, firms operating in high growth industries that usually pay low (or no) dividends attract a clientele that prefers price appreciation (in the form of capital gains) to dividends. On the other hand, firms that pay a large amount of their earnings as dividends attract a clientele that prefers high dividends.

Allen, Bernardo and Welch (2000) suggest that clienteles such as institutional investors tend to be attracted to invest in dividend-paying stocks because they have relative tax advantages over individual investors. These institutions are also often subject to restrictions in institutional charters (such as the “prudent man rule”), which, to some extent, prevent them from investing in non-paying or low-dividend stocks. Similarly, good quality firms prefer to attract institutional clienteles (by paying dividends) because institutions are better informed than retail investors and have more ability to

---

<sup>12</sup> In the same vein, Pettit (1977) stated that “the net tendency of an individual investor to hold portfolios of securities that have particular dividend paying characteristics will be designated the “dividend clientele effect”” (p.421)

<sup>13</sup> Another possible dividend clientele effect is related to risk clienteles. High-payout stocks tend to be less risky than low-payout stocks; hence, and based on the risk factor, dividends may attract certain clientele investors (see for example Pettit, 1977 and Scholz, 1992).

monitor or detect firm quality<sup>14</sup>. Allen et al. conclude with the proposition that, "...these clientele effects are the very reason for the presence of dividends..."(2000, p. 2531).

### **Tax-Induced Clientele-Effects**

Since most of the investors are interested in *after-tax* returns, the different tax treatment of dividends and capital gains might influence their preference for dividends versus capital gains. This is the essence of the tax-induced DCH. For example, *ceteris paribus*, investors in low tax brackets who rely on regular and steady income will tend to be attracted to firms that pay high and stable dividends. In addition, some corporate or institutional investors tend to be attracted to high-dividend stocks (see, for example, Han, Lee and Suk, 1999, Dhaliwal, Erickson and Trezevant, 1999, and Short, Zhang and Keasey, 2002) On the other hand, investors in relatively high tax brackets might find it advantageous to invest in companies that retain most of their income to obtain potential capital gains, all else being equal. Some clienteles, however, are indifferent between dividends and capital gains such as tax exempt and tax deferred entities (see Elton and Gruber, 1970, among others).

### **Transaction Cost-Induced Clientele**

Another argument of the DCH is based on the proposition that dividend policy may influence different clienteles to shift their portfolio allocation, resulting in transaction costs. For example, small investors (such as retirees, income-oriented investors, and so on) who rely on dividend income for their consumption needs, might be attracted to (and even may pay a premium for) high and stable-dividend stocks, because the transaction costs associated with selling stocks might be significant for such investors. On the other hand, some investors (e.g. wealthy investors), who do not rely on their share portfolios to satisfy their liquidity needs, prefer low payouts to avoid the transaction costs associated with reinvesting the proceeds of dividends, which they actually do not need for their current consumption (Bishop et al., 2000). Note that for both groups of investors, transforming one financial asset to another, transaction costs need to be incurred. That is, M&M's notion of homemade dividends is not costless and the existence of such costs may make dividend policy not irrelevant.

The other effect of transaction costs on dividend policy is related to the fact that firms may need to restore cash paid out as dividends with new equity issues (or debt financing) to take advantage of new investment opportunities. If issuing costs are significant, then firms are most likely to rely on retained earnings rather than external financing. This is reinforced by the empirical fact that retained earnings constitute the major source of firm finance not just in developing but also even in developed capital markets. Fazzari, Hubbard and Petersen (1988) reported that, over the period of 1970 to 1984, the retained earnings amounted to 71.1 percent of the total source of funds of US manufacturing firms with an average retention ratio of 60 percent<sup>15</sup>. In these cases, there should be a negative relationship between transaction costs and dividend payments. Firms can reduce or avoid such expenses by lowering dividend payments or not paying them at all. However, in practice, many firms continue to pay cash dividends, while at the same time issuing new equity and debt, suggesting that other factors may also be at work in influencing dividend policy.

An important implication of the DCH is that, by changing its dividend policy, a firm's ownership structure might also change. Another implication of clientele theory is that firms should attempt to adopt a stable dividend policy to avoid inducing shareholders to modify their portfolios, entailing transaction costs (see for example Scholz, 1992).

The theoretical plausibility of dividend clientele hypothesis is relatively ambiguous. On the one hand, transaction costs and taxes may influence demands for dividends. But the mere existence of transaction costs or differential taxes is not on its own a rationale for a general theoretical explanation of the determination of dividend policy. Not surprisingly, therefore, most of the literature that has

---

<sup>14</sup> This prediction is consistent with the signalling hypothesis. In fact, Allen, Bernardo and Welch (2000) proposed a model that links signalling and agency arguments with the clientele effects of dividend hypothesis.

<sup>15</sup> Note that the average retention ratio varies with the firm size. Smaller firms have greater retention ratio than larger firms.

tested the DCH has produced mixed results<sup>16</sup>. The next section examines the empirical studies, which endeavour to deal with DCH from different perspectives.

### 3.4.2. Empirical Evidence

The empirical studies that examined the clientele effect hypothesis have taken different paths. A number of studies, discussed shortly, have studied investors' portfolios and their demographic attributes including taxes. Pettit (1977) provided empirical evidence for the existence of a clientele effect by examining the portfolio positions of 914 individual investors. He found a significant positive relationship between investors' ages and their portfolios' dividend yield, and a negative relationship between investors' incomes and dividend yield. Pettit suggested that elderly low-income investors tend to rely more on their portfolios to finance their current consumption, and avoid the transaction costs associated with selling stocks. Consequently, they have more of a tendency to invest in high-dividend stocks. Pettit also showed that investors whose portfolios have low systematic risk prefer high-payout stocks, and he found evidence for tax-induced clientele effect. However, using a sample constructed from the same database used in Pettit's (1977) study, Lewellen et al. (1978) found only very weak supportive evidence of the clientele effect hypothesis. In a later study, Scholz (1992) developed an empirical model to test the DCH directly by examining individual investor portfolio data. He found that differential tax treatment of dividends and capital gains influences investors' decisions in choosing between higher-or-lower-dividend yield portfolios, consistent with dividend-/tax-clientele hypothesis.

Another strand of empirical testing has examined the relationship between dividend changes and clientele changes. Richardson, Sefcik and Thompson (1986) tested a sample of 192 US firms that initiated dividends for the first time during the period of 1969 through 1982. They attempted to investigate whether the observed (post-dividend-initiations) increase in firms' stocks trading volume is due to the signalling effect or was a product of investors in various tax clienteles adjusting their portfolios. They found that the increased trading volume associated with dividend policy changes was mainly related to the information contained in the dividend announcement, and only a small part was related to clientele adjustment. Richardson et al. concluded that "...the evidence supporting the existence of clientele trading is somewhat weak" (p.330).

More recently, Dhaliwal, Erickson and Trezevant (1999) examined institutional shareholding changes following dividend initiations. Based on the theory of tax-induced clienteles, Dhaliwal et al. expected an increase in institutional ownership subsequent to dividend initiations. Using a sample of 133 dividend initiators from the 1982 to 1995 period, the results obtained are consistent with their prediction. They reported that 80 percent of their sample firms experience an increase in institutional shareholders following dividend initiation. Dhaliwal et al. found that this increase was statistically and economically significant<sup>17</sup>. They concluded that the dividend/tax-clientele effect is "strong enough" to influence investors' decisions. Seida (2001) provided evidence consistent with Dhaliwal et al.'s (1999) findings and the DCH. Earlier research by Bajaj and Vijh (1990), Ang, Blackwell and Megginson (1991), and Denis, Denis and Sarin (1994) provided empirical support for the existence of the dividend clientele hypothesis.

Finally, another strand attempts to infer the tax characteristics of a firm's marginal investors by examining the movements of stock prices around the ex-dividend days, and therefore provides an indirect test of the DCH. The basic intuition of the relation between stock price and ex-dividend day is that, in a rational capital market, and in a world of certainty, share prices should drop by approximately the amount of dividend per share on the day the stock goes ex-dividend<sup>18</sup>. When the stock goes ex (without)-dividend the investor has no claim to dividend payments, and thus will not pay the same

---

<sup>16</sup> Miller (1977) and Auerbach (1983) have presented theoretical models that are consistent with the presence of clientele effects.

<sup>17</sup> For further supporting evidence, see also Han, Lee and Suk (1999)

<sup>18</sup> Any other share price behaviour suggests arbitrage opportunities (see Kalay, 1982 and Lease et al. 2000).

amount as if the stock traded cum (with)-dividend. The stock price on the ex-dividend day should therefore be lower than in the cum-dividend period to reflect the lost dividend (Lease et al., 2000).

This notion, however, may not perfectly hold in some circumstances, because dividends are usually taxed more heavily than capital gains. Investors in high tax brackets will therefore be better off receiving their income in the form of capital gains rather than dividends. The tax effect may mean that the drop in stock price may be less than the dividend because investors value dividends less than capital gains.

In a seminal paper, Elton and Gruber (1970) presented empirical evidence about the tax-induced clientele hypothesis by observing the share price behaviour around the ex-dividend day<sup>19</sup>. Examining shares listed on the NYSE paying a dividend between April 1, 1966 and March 31, 1967, Elton and Gruber found that share prices fell by less than the amount of the dividend on ex-dividend days. They also found a positive relationship between the dividend yield of a stock and the proportionate size of its ex-dividend price drop. Elton and Gruber interpreted their results as evidence that differential taxes induced a preference for capital gains relative to cash dividends, therefore supporting the tax clientele hypothesis (that is, investors in high tax brackets invest in low-dividend yield stocks and vice versa). Elton and Gruber (1970, p.73) concluded, "... firms not only seem to attract a clientele but they attract a *rational* clientele – one which should prefer their dividend policy".

Kalay (1982) criticising Elton and Gruber argued that the marginal tax rates of the investors cannot be inferred from the ex-dividend day price-drop-to-dividend ratio (hereafter "price-drop ratio") and the observed positive relationship between price-drop ratio and dividend yield may not be due to tax induced clientele effects. He presented another explanation, known as the "short-term traders" hypothesis. Kalay argued that, assuming certainty, if the ex-dividend price ratio drop is less than one (less than the amount of dividends), short-term traders who face the same tax rate on dividends and capital gains could make arbitrage profits. That is, investors can buy a stock before it goes ex-dividend and sell it soon after<sup>20</sup>. However, this arbitrage process could be hampered by transaction costs<sup>21</sup>. Kalay suggest that transaction costs are insignificant for broker dealers who are the potential short-term traders, while Elton, Gruber and Rentzler (1984) argue that it matters even for broker dealers. Karpoff and Walkling (1988, 1990) show that excess ex-dividend-day returns are positively correlated with transaction costs (measured by bid-ask spread), and this relationship increases for stocks with high-dividend yields. They also suggest that short-term trading around ex-dividend days is higher for high-yield stocks (see also Michaely and Vila, 1996), implying that short term trading (or dividend capture) may influence the ex-dividend day stock price changes, and hence any clientele effects may not be the only explanation for these changes.

Examination of the ex-dividend day behaviour of share prices has also been extended to different stock markets, including Australia (Brown and Walter 1986), Canada (Lakonishok and Vermaelen, 1983 and Booth and Johnston, 1984), Finland (Hietala, 1990), Greece (Dasilas, 2009) Japan (Kato and Loewenstein, 1995), and New Zealand (Bartholdy and Brown, 1999). These studies have found mixed support for the ex-dividend day effect.

It is worth noting that dividend clientele hypothesis predictions, to some extent, may contradict other explanations of dividend policy such as the signalling and agency costs hypotheses, discussed shortly. For example, according to the signalling hypothesis, dividends convey information about a firm's future prospects, and in that sense investors with preferences for capital gains (for tax reasons) may still prefer firms with high-payout ratios, contradicting the prediction of the tax-induced clientele hypothesis. Also, based on agency theory, dividends may mitigate the free cash in hand of managers

---

<sup>19</sup> Several empirical studies analyse ex-dividend day behaviour of share prices for US firms. A partial listing includes Kalay (1982), Elton, Gruber and Rentzler (1984), Eades, Hess and Kim (1984), Barclay (1987), Karpoff and Walkling (1988, 1990), Grammatikos (1989), Bali and Hite (1998), Koski and Scruggs (1998), and Elton, Gruber and Blake (2005).

<sup>20</sup> This practice is known as dividend capture (see Karpoff and Walkling, 1990).

<sup>21</sup> The arbitrage profit could be also inhibited by the risk or the uncertainty of ex-dividend price. For further details on this issue see for example, Heath and Jarrow (1988), Grammatikos (1989). More recently, Michaely and Vila (1996) documented that risk and transaction costs affect the abnormal trading volume non-positively.



and reduce the agency problems, and for these reasons investors may also prefer high-dividend stocks even though they are tax-disadvantaged. The next two sections discuss these contending explanations in more detail.

### **3.5. The Information Content of Dividends (Signalling) Hypothesis**

#### **3.5.1. The Basic Argument**

Another hypothesis for why M&M's DIH is inadequate as an explanation of financial market practice is the existence of asymmetric information between insiders (managers and directors) and outsiders (shareholders). M&M assumed that managers and outside investors have free, equal and instantaneous access to the same information regarding a firm's prospects and performance. But managers who look after the firm usually possess information about its current and future prospects that is not available to outsiders. This informational gap between insiders and outsiders may cause the true intrinsic value of the firm to be unavailable to the market. If so, share price may not always be an accurate measure of the firm's value. In an attempt to close this gap, managers may need to share their knowledge with outsiders so they can more accurately understand the real value of the firm. Historically, due to a lack of complete and accurate information available to shareholders, the cash flow provided by a security to an investor often formed the basis for its market valuation (Baskin and Miranti, 1997). In this way dividends came to provide a useful tool for managers in which to convey their private information to the market because investors used visible (or actual) cash flows to equity as a way of valuing a firm. Many academics and financial practitioners also suggest that dividends might have implicit information about a firm's prospects. Even M&M (1961) suggest that when markets are imperfect share prices may respond to changes in dividends. In other words, dividend announcements may be seen to convey implicit information about the firm's future earnings potential. This proposition has since become known as the "information content of dividends" or signalling hypothesis. However, M&M dismissed the possibility that this occurred by suggesting that the empirical evidence does not support the notion that investors prefer dividends to retained earnings.

According to the signalling hypothesis, investors can infer information about a firm's future earnings through the signal coming from dividend announcements, both in terms of the stability of, and changes in, dividends. However, for this hypothesis to hold, managers should firstly possess private information about a firm's prospects, and have incentives to convey this information to the market. Secondly, a signal should be true; that is, a firm with poor future prospects should not be able to mimic and send false signals to the market by increasing dividend payments. Thus the market must be able to rely on the signal to differentiate among firms. If these conditions are fulfilled, the market should react favourably to the announcements of dividend increase and unfavourably otherwise (Ang, 1987, and Koch and Shenoy, 1999).

As managers are likely to have more information about the firm's future prospects than outside investors, they may be able to use changes in dividends as a vehicle to communicate information to the financial market about a firm's future earnings and growth. Outside investors may perceive dividend announcements as a reflection of the managers' assessment of a firm's performance and prospects. An increase in dividend payout may be interpreted as the firm having good future profitability (good news), and therefore its share price will react positively. Similarly, dividend cuts may be considered as a signal that the firm has poor future prospects (bad news), and the share price may then react unfavourably. Accordingly, it would not be surprising to find that managers are reluctant to announce a reduction in dividends. Lintner (1956) argued that firms tend to increase dividends when managers believe that earnings have permanently increased. This suggests that dividend increases imply long-run sustainable earnings. This prediction is also consistent with what is known as the "dividend-smoothing hypothesis". That is, managers will endeavour to smooth dividends over time and not make substantial increases in dividends unless they can maintain the increased dividends in the foreseeable future. Lipson, Maqueira and Megginson (1998, p.44) observed that, "managers do not initiate dividends until they believe those dividends can be sustained by future earnings".

It is worth noting that, although management can use changes in dividends as a signal to convey information to the market, in some cases dividend changes may be an ambiguous signal. This can be illustrated through the case of FPL Group, the parent company of Florida Power & Light Company (see, Soter, Brigham and Evanson, 1996). On May 9, 1994 FPL announced a 32 percent cut in its quarterly dividends. The market responded negatively to the announcement and FPL's stock price dropped by about 20 percent, because the market perceived it as a signal of bad future prospects. However, the FPL board had in fact decided to retain funds for new investments to improve the company's future performance. After realizing the reason for the dividend reduction, financial analysts concluded that the action was not a signal of financial distress. Thereafter, FPL's stock price recovered. The market was initially mistaken but the case is a good example of the possible (and sometimes contradictory) signalling effects of dividend announcements.

Although the information content of dividends (signalling) has been noted earlier, it was not modelled until the late 1970s and early 1980s. The most cited dividend signalling models can be found in Bhattacharya (1979), John and Williams (1985), and Miller and Rock (1985)<sup>22</sup>. In general, these models are based on several assumptions. There is asymmetric information between corporate insiders (managers) and outside investors (shareholders). Dividends contain information about the firm's current and future cash flows, and managers have incentives to convey their private information to the market through dividend payments in order to close the information gap. The announcement of a dividend increase will be taken as good news and the market will bid up share prices accordingly. Similarly, an announcement that a dividend will be cut suggests unfavourable prospects and will tend to see the firm's share price fall<sup>23</sup>. Dividends are considered a credible signalling device because of the dissipative costs involved. For example, in Bhattacharya's (1979) model the cost of signalling is the transaction cost associated with external financing. In Miller and Rock's (1985) model the dissipative cost is the distortion in the optimal investment decision, whereas in John and William's (1985) model the dissipative signalling cost is the tax penalty on dividends relative to capital gains. Therefore, only good-quality firms (under valued) can use dividends to signal their prospects, and poor-quality firms cannot mimic by sending a false signal to the market because of the costs involved in that action. A major criticism addressed to these models is why firms choose dividends to signal their prospects while other less costly means are available such as share repurchases (see, for example, Allen and Michaely, 2002).

### **3.5.2. Empirical Evidence**

In the preceding section, the theory of dividend signalling was developed around the proposition that corporate insiders are more informed about the firm's current performance and future prospects than outsiders. This suggests that the market perceives dividends (and repurchases) as signals of a management's view about the firm's fortunes, and therefore share prices react to that signal. The empirical work on dividend signalling has examined two main issues. Firstly, whether share prices move in the same direction with dividend change announcements. Secondly, whether dividend changes enable the market to predict future earnings.

Finance scholars have addressed these issues extensively, but once again the results have been mixed and inconclusive. The first question has received much attention in the literature, because if the announcement of dividend changes does not have the predicted impact on share prices this will cast doubt on the validity of the information content of dividend hypothesis. Pettit (1972) observed that dividend announcements do communicate valuable information, and showed that the market reacts positively to the announcement of dividend increases (significant increase in stock prices), and negatively to the announcement of dividend decreases (significant drop in stock prices). Pettit also

---

<sup>22</sup> The literature of dividend signalling has produced other models to represent the theory of asymmetric information (see, for example, Ofer and Thakor, 1987, Kumar, 1988, and Bernheim, 1991, Allen, et al., 2000)

<sup>23</sup> For studies that reach a similar conclusion, see for example: Charest (1978), Aharony and Swary (1980), Asquith and Mullins (1983) Kalay and Loewenstein (1985), Denis et al. (1994), Yoon and Starks (1995), and Bali (2003).

added, "...dividend announcement, when forthcoming, may convey significantly more information than the information implicit in an earnings announcement" (p.1002). Aharony and Swary (1980) suggest that dividend and earning announcements are not perfect substitutes and a proper test for the signalling hypothesis needs to take into account the effect of earnings announcements. Aharony and Swary found support for the results obtained by Pettit even after controlling for contemporaneous earnings announcements. Woolridge (1983) also found a significant increase (decrease) in common stock returns following the unexpected dividend increase (decrease) announcements.

Asquith and Mullins (1983) examined the market's reaction to dividend announcements for a sample of 168 firms that initiated dividends either for the first time in their corporate history or resumed paying dividends after at least a ten-year hiatus. Asquith and Mullins tested the average daily excess stock returns ten days before and ten days after the announcement of dividend initiation. For the two-day announcement period their result shows that there is an excess return of about +3.7 percent. Moreover, using cross-sectional regression Asquith and Mullins found a positive and significant relationship between the magnitude of initial dividends and the abnormal returns on the announcement day. This suggests that the size of dividend changes may also matter. In another empirical study, Asquith and Mullins (1986) reinforce their earlier findings and offer more support to the information content of dividend hypothesis.

Michaely, Thaler and Womack (1995) have gone further by examining the impact of both initiations and omissions of cash dividends on share prices reaction. They observed 561 dividend initiation events and 887 dividend omission events over the period of 1964 to 1988. Michaely et al. documented that, during three days surrounding the announcements, the average excess return was about -7.0 percent for omissions and +3.4 percent for dividend initiations. Note that the market reactions to dividend omissions are greater than for dividend initiations. This implies that the market reacts optimistically toward dividend initiations (or increases); however, the market is more pessimistic in response to the announcements of dividend omissions (or decreases). Michaely et al. also found significant long-run drifts in stock prices in response to dividend initiations and omissions. They reported +7.5 percent excess returns after one year of initiation announcements and +24.8 percent after three years. For dividend omissions they reported abnormal returns of -11.0 percent in the first year and -15.3 percent after three years.

More recently, Bali (2003) presented evidence consistent with the preceding results. He reported an average 1.17 percent abnormal return for dividend increases and -5.87 percent for decreases. In addition, Bali examined the long run drifts of stock prices reaction to dividend increases and decreases and reinforced Michaely et al.'s (1995) findings.

From the empirical findings of these studies there seems to be general agreement that share prices follow the same direction as the dividend change announcements. Dividend increases and dividend initiations (decreases and omissions) are associated with subsequent significant increases (decreases) in share prices. Moreover, the reaction of share prices in the event of dividend decreases and dividend omissions is found to be more severe.

The signalling power of dividends, however, may not be the same in markets other than US markets. For example, in a comparison study of dividend policies between Japanese and US firms Dewenter and Warther (1998) revealed that the influence of dividends as a signalling mechanism in Japan is significantly lower as compared to the US. They studied 420 US firms and 194 Japanese firms. The results of Dewenter and Warther's study can be summarised as follows: for the narrow 2-day window (0, +1)<sup>24</sup> in the event of dividend omissions the mean returns are -2.53 percent and -4.89 percent, while for dividend initiations +0.03 percent and +2.38 percent for Japanese and US firms, respectively. For a wide 62-day window (-60, +1) average returns are -6.48 percent and -17.03 percent, while for dividend initiations +0.1 percent and +10.24 percent for Japanese and US firms respectively. The results indicate that the impact of dividend omission and initiation announcements on US stock prices is significantly larger than on Japanese stock prices. Moreover, Dewenter and Warther conclude

---

<sup>24</sup> This period is the day of and the day after the announcement.

that Japanese firms are subject to less information asymmetry especially among keiretsu (industrial groups) member firms. These differences in the findings are attributable to the differences in corporate governance structures between Japan and the US, and moreover to the nature of corporate ownership in Japan. Conroy, Eades and Harris (2000) provide evidence consistent with Dewenter and Warther's (1998) study for Japanese firms.

Using a sample of 200 German firms listed on Frankfurt Stock Exchange, Amihud and Murgia (1997) found support for the notion that dividend changes convey information about firms' values. They examined the stock price reaction to dividend announcements using 255 events of dividend increase and 51 events of dividend decrease for the period of 1988 to 1992, and compared the results with findings of studies based on US data. Amihud and Murgia reported that the average excess return (AER) of stock prices is + 0.965 percent for dividend increase and -1.73 percent for dividend decrease. In addition, Amihud and Murgia have observed that though the earnings news preceded dividend change announcements, dividends still have significant information. However, the findings of this study are inconsistent with tax-based signalling models (for example, John and William, 1985, and Bernheim, 1991) because dividends in Germany are not tax-disadvantaged. Recall that the tax-based signalling models propose that higher taxation on dividends makes them informative about a firm's value. Thus, according to these models, if dividends do not suffer from a tax penalty (as in the case Germany) share prices should not react to dividend changes.

Travlos, Trigeorgis and Vafeas (2001) provided evidence from an emerging market in favour of the dividend signalling hypothesis. They used a sample of 41 announcements of cash dividend increase and 39 announcements of stock dividends for firms listed on the Cyprus Stock Exchange for the period of 1985 to 1995, and examined market reaction to the announcement of cash dividend increases and stock dividends. Travlos et al. found positive and significant abnormal returns for both cash dividend increases and stock dividend announcements and interpreted their results as consistent with the signalling hypothesis.

Numerous studies have addressed another question of the information content of dividends hypothesis; that is, whether dividend changes enable the market to predict the future earnings of a firm. Empirical work that addresses this issue has yielded puzzling results. For example, Watts (1973) used a sample of 310 firms for the years 1946 to 1967, and annual definitions of dividends and earnings to test the hypothesis that current and past dividends provide more information to predict future earnings than that contained in current and past earnings. Watts tested the relationship between annual future earnings in year  $t+1$  and the level of dividends in years  $t-1$  and  $t$ . Also, he examined the association between the abnormal increase/decrease in stock prices and unanticipated changes in dividends. Watts regressed the coming year earnings ( $t+1$ ) on current year dividends ( $t$ ). He documented that the average estimated coefficients of current dividends (across firms) are found to be positive; however, the average significance level was too small. Moreover, Watts reported similar results regarding the relationship between unanticipated dividend changes and share prices and concluded, "...in general, the information content of dividends can only be trivial" (p.211). Gonedes (1978) has reported similar results.

Using a sample of 1025 firms listed on the NYSE and on the American Stock Exchange (AMEX) between 1979 and 1991, Benartzi, Michaely and Thaler (1997) studied the relationship between firms' future earnings and dividend changes. They did not find evidence to support the notion that changes in dividends have the power to predict changes in future earnings. Their results lend support to Watts' findings. Alternatively, Benartzi et al. found that dividend changes are strongly linked to contemporaneous and lagged earnings changes. Benartzi et al.'s results challenge the signalling hypothesis. DeAngelo, DeAngelo, and Skinner (1996) also found no evidence that dividends provide valuable information about future earnings.

In two separate papers, Laub (1976) and Pettit (1976) challenged Watts' findings. They suggested that dividends convey information about future earnings prospects beyond those predicted by past earnings. Further, Nissim and Ziv (2001) found that dividend changes and earnings changes are

positively correlated, and provide support for the signalling hypothesis<sup>25</sup>. However, their results were not the same for dividend increases and decreases. Nissim and Ziv did not find an association between dividend decreases and future profitability after controlling for current and expected profitability, and they assumed that this result is possibly due to the accounting conservatism. Note that, unlike the first question that we addressed about the reaction of stock prices to dividend changes, the proposition that dividend changes transmit information about future earnings seems to have weak support.

Mixed support exists about issues relating to the information content of dividends hypothesis, a common concept in the dividend literature. As we noted from the studies referenced above, firms use dividend policy to communicate information about their future prospects to the market, and this provides another possible explanation of why firms pay dividends. Moreover, signalling could play a pivotal role in determining firms' dividend policies and their values.

The signalling hypothesis makes an important assumption that managers *want* to signal the proper value of the firm via dividends. However, a separate thesis has been developed on the basis that managers may have incentives *not* to pay dividends and will therefore need to be forced (or given incentives) to pay dividends. This aspect has been developed under basis of the agency costs hypothesis of dividends.

### **3.6. Agency Costs and Free Cash Flow Hypothesis of Dividend Policy**

#### **3.6.1. The Basic Argument**

One of the assumptions of M&M's perfect capital market is that there are no conflicts of interests between managers and shareholders. In practice, however, this assumption is questionable where the owners of the firm are distinct from its management. In these cases managers are always imperfect agents of shareholders (principals). This is because managers' interests are not necessarily the same as shareholders' interests, and they might conduct actions that are costly to shareholders, such as consuming excessive perquisites or over-investing in managerially rewarding but unprofitable activities. Shareholders therefore incur (agency) costs associated with monitoring managers' behaviour, and these agency costs are an implicit cost resulting from the potential conflict of interest among shareholders and corporate managers. The payment of dividends might serve to align the interests and mitigate the agency problems between managers and shareholders, by reducing the discretionary funds available to managers (Rozeff, 1982, Easterbrook, 1984, Jensen, 1986, and Alli, Khan and Ramirez, 1993).

Another source of the agency costs problem that may be influenced by dividend policy is the potential conflict between shareholders and bondholders. Shareholders are considered as the agents of bondholders' funds. In this case, excess dividend payments to shareholders may be taken as shareholders expropriating wealth from bondholders (Jensen and Meckling, 1976). Shareholders have limited liability and they can access the company's cash flow before bondholders; consequently, bondholders prefer to put constraints on dividend payments to secure their claims. Conversely, for the same reasons, shareholders prefer to have large dividend payments (Ang, 1987).

In an often-cited article, Easterbrook (1984) argued that dividends could be used to reduce the free cash flow in the hands of managers. In addition, Eastbrook hypothesised that dividend payments will oblige managers to approach the capital market to raise funds. In this case investment professionals such as bankers and financial analysts will also be able to monitor managers' behaviour. Therefore, shareholders are able to monitor managers at lower cost (and minimise any collective action problems). This suggests that dividend payments increase management scrutiny by outsiders and reduce the chances for managers to act in their own self-interest. However, Easterbrook suggested that increasing dividend payments might force managers to take undesirable actions like increasing firm leverage, which may sometimes increase the riskiness of the firm.

---

<sup>25</sup> Healy and Palepu (1988) reported a positive association between unexpected dividend changes and subsequent unexpected earnings.

Along the lines of Easterbrook's argument, Jensen (1986) provided another explanation for paying dividends based on the agency costs hypothesis. Jensen contended that firms with excess (free) cash flow give managers more flexibility for using the funds in a way that benefit themselves but not shareholders' best interests. He argued that managers have incentives to enlarge the size of their firms beyond the optimal size to amplify the resources under their control and moreover to increase their compensation, which is often related to firm size (see also Gaver and Gaver, 1993). Thus, if a firm has a substantial surplus of cash the overinvestment problem will be more pronounced, and managers may undertake negative NPV projects. Extracting the excess funds of free cash flow that management controls can reduce this overinvestment problem. Increasing dividend payouts may help to mitigate the free cash flow under managers' control, thereby preventing them from investing in negative NPV or poor projects. As a result, paying more dividends will reduce the agency costs between managers and shareholders. Moreover, Jensen has pointed out that debt might play a similar role to dividends in reducing the agency costs of free cash flow by reducing the funds under management control.

As noted earlier, M&M suggested that a firm's dividend policy is independent of its investment policy. By contrast, the free cash flow hypothesis implies that dividend policy and the investment decision are interrelated. It is argued that an increase in dividend payments will reduce the "overinvestment" problem, which will have a positive impact on the market value of the firm, *ceteris paribus* (Lang and Litzenberger, 1989).

However, accepting the notion that increasing dividends will reduce the funds available to managers and force them to be in the market to acquire funds means that shareholders should be willing to tolerate the risk of the firm being more indebted and also accept paying higher personal tax rates on dividends. In other words, shareholders have to trade off between the costs and benefits of acquiring more dividends.

### 3.6.2. Empirical Evidence

The issue of agency costs hypothesis as an explanation of corporate dividend policy has been widely addressed in empirical research. Rozeff (1982), for instance, was one of the first to formally model agency costs using a large sample of US firms. Rozeff's regression model and the hypothesised signs of the variables can be described as follows:

$$PAY = \beta_0 - \beta_1 INS - \beta_2 GROW1 - \beta_3 GROW2 - \beta_4 BETA + \beta_5 STOCK + \varepsilon, \quad (13)$$

where *PAY* is the average payout ratio over a seven year period (1974-1980), *INS* is the percentage of common stock held by insiders over the seven year period, *GROW1* is the realized average growth rate of a firm's revenues over a five year period (1974-1979), *GROW2* is the forecasted growth of sales over the five year period (1974-1979), *BETA* is the firm's estimated beta coefficient reported in the Value Line Investment Survey, and *STOCK* is the natural log of the number of shareholders at the end of the seven year period.

The key idea of Rozeff's (1982) model is that the optimal dividend payout is at the level where the sum of transaction costs and agency costs are minimised, therefore the model is called "cost minimisation model". Rozeff's model contained two proxies for agency costs, namely *INS* and *STOCK*. Note that the hypothesised signs of these variables (*INS* and *STOCK*) are negative and positive, respectively. This indicates that there should be a negative relationship between the percentage of stock held by insiders (insider ownership) and the payout ratio, and a positive relationship between the number of shareholders (dispersion of ownership) and the dividend payout ratio. Rozeff suggested that the benefits of dividends in reducing agency costs are smaller for companies with lower dispersion of ownership and/or higher insider ownership. He found the agency costs variables significant and consistent with their hypothesised sign. Rozeff's (1982) results provide empirical support for the agency costs hypothesis. A decade later, Dempsey and Laber (1992) updated the work of Rozeff using an extended period over the years 1981-1987 and strongly supported Rozeff's findings (see also Lloyd, Jahera and Page, 1985).

Using factorial analysis to model the determinants of corporate dividend policy Alli et al. (1993) found the ownership dispersion factor insignificant in relation to dividend decision, inconsistent with Rozeff (1982). However, the insider ownership variable was found to be significant and negatively related to dividend payouts. The overall results of Alli et al.'s study support the agency cost hypothesis of dividend policy.

Jensen, Solberg and Zorn (1992) applied three-stage least squares to examine the determinants of cross-sectional differences in insider ownership, debt, and dividend policy. They used a sample of 565 firms for the year 1982 and 632 firms for the year 1987. From the dividend equation, the insider ownership variable was found statistically significant with a negative sign. This implies that there is a negative relationship between insider holdings and dividend payments. The result of Jensen et al. is consistent with Rozeff (1982) and therefore with the agency costs hypothesis.

In more recent studies, Holder, Langrehr and Hexter (1998) examined 477 US firms over the period 1980 to 1990. They reported that insider ownership and dividend payouts are significantly and negatively related and that the number of shareholders positively influences payouts. In addition, Holder et al. found support for Jensen's free cash flow hypothesis. Likewise, Saxena (1999) examined a sample of 235 unregulated and 98 regulated firms listed on the NYSE over the period of 1981 to 1990 and reinforced the findings of the Holder et al.'s study. Both studies are consistent with the agency costs hypothesis and provide evidence that agency cost is a key determinant of the firm dividend policy. Al-Malkawi (2005) applied panel data models, Tobit and Probit specifications, for companies listed in an emerging market namely Amman Stock Exchange for the period 1989-2000. He found strong empirical support for the agency cost hypothesis in such market.

Further empirical support for the agency cost hypothesis and in particular for the free cash flow hypothesis came from Lang and Litzenberger (1989). While this study pre-dates many of the agency costs studies discussed above, it does so from a different model of agency cost analysis, namely the free cash flow hypothesis of Jensen (1986). Lang and Litzenberger tested a sample of 429 dividend-change announcements for US firms for the period of 1979 to 1984. Lang and Litzenberger used Tobin's  $Q$  ratio (hereafter  $Q$ ) to distinguish between overinvesting-firms and value-maximising ones. They began with the proposition that, if  $Q$  for a given firm is less than unity ( $Q < 1$ ), the firm may be overinvesting. Similarly, if  $Q$  is greater than one ( $Q > 1$ ), a firm may be at the value-maximising level of investment.

Based on Lang and Litzenberger's overinvestment hypothesis, firms with  $Q$  less than one should be expected to have larger average stock returns following dividend change announcements. To clarify, low  $Q$  firms experience positive abnormal stock returns following dividend increase announcements because the market anticipates this as a reduction in the overinvestment problem (good news). That is, increases in dividend payments reduce the cash flow that would have been otherwise invested in negative NPV projects. Conversely, dividend decreases suggest that the potential for overinvestment problems may have grown. This prediction is consistent with the free cash flow hypothesis. Lang and Litzenberger reported that the average stock returns for  $Q < 1$  firms were significant for both dividend increases and decreases. Moreover, they suggested that dividend changes for overinvesting firms ( $Q < 1$ ) signal information about investment policies. In summary, Lang and Litzenberger provide evidence in support of free cash flow hypothesis; they also argue that the excess funds hypothesis provides a better explanation of share price reaction to dividend change announcements than the cash flow signalling hypothesis.

Other empirical studies have examined the agency theory of free cash flow and have found little or no support for the excess cash flow hypothesis. For example, using a sample of 55 self-tenders and 60 special dividend announcements between 1979 and 1989 Howe, He and Kao (1992) produced findings that challenge those of Lang and Litzenberger (1989) and show that there is no relationship between  $Q$  and stocks' reaction to one-time dividend announcements. Further, Denis, Denis and Sarin (1994) investigated a sample of 5992 dividend increases and 785 dividend decreases between 1962 and

1988. They examined the relationship between dividend yield and  $Q$ , and found the relationship to be negative. They argued that this negative relation is attributable to a negative correlation between dividend yield and  $Q$ , suggesting that the market perceived this as a signal that overinvestment problems may be being reduced. Also, Denis et al. examined the level of capital expenditures for low and high  $Q$  firms in relation to dividend changes. They observed that  $Q < 1$  firms increased their investments following dividend increases and decreased them following dividend decreases. This result contradicts the overinvestment hypothesis. In addition, using a sample 4179-dividend change announcements of firms listed on the NYSE over the period 1969 to 1988, Yoon and Starks (1995) arrived at the same conclusion. The studies of both Denis et al. (1994) and Yoon and Starks (1995) provide support to the cash flow signalling hypothesis rather than free cash flow hypothesis as an explanation for the stock price reactions to dividend change announcements.

In a more recent study, Lie (2000) examined the free cash flow hypothesis using a large sample of special dividends, regular dividend increases, and self-tender offers<sup>26</sup>. He found little evidence in support of the agency cost hypothesis. Moreover, Lie suggested that neither small special dividends nor the increase in regular dividends could solve the overinvestment problem. This is inconsistent with the agency hypothesis of free cash flow.

La Porta et al. (2000) examined more than 4000 companies from 33 countries around the world including some emerging markets and provided empirical support for the agency costs hypothesis. Firstly, the researchers divided the countries into two categories: countries that provided good legal protection for minority shareholders, and countries where shareholders had poor legal protection<sup>27</sup>. Next, they analysed the effect of investor protection on dividend payouts and tested two alternative agency models: the “outcome” model and the “substitute” model. The first model implies that in countries with a more effective legal protection system, shareholders have greater rights and therefore can force managers to disgorge cash. As a result, dividends are an outcome of the legal protection of shareholders. They hypothesised that the more effective the legal protection the greater the rights of shareholders, and subsequently more dividends are paid, other things being equal.

The second or substitute model, predicts that managers can use dividends to establish a reputation if they need to go to the capital market to raise external funds. In countries with weak protection of shareholders, firms may need to establish a good reputation for their treatment of investors by paying more dividends to shareholders. That is, dividends serve as a substitute for legal protection of minority shareholders. This may especially be the case in most emerging markets. La Porta et al. hypothesised that higher payouts are expected in countries with poor legal protection, other things being equal

La Porta et al.’s results supported the outcome agency model of dividends. That is, in countries where shareholders have better protection, firms pay more dividends. Moreover, they found that firms operating in these countries and having a rapid growth rate paid fewer dividends than their counterparts with slow growth rates. This implies that shareholders use their legal power to force managers to disgorge cash when investment opportunities are low. La Porta et al.’s study is consistent with the agency costs explanation of dividend policy. In fact, their research suggests that dividends can be used to reduce the conflict between insiders and outsiders or shareholders. La Porta et al. (2000, p. 27) concluded that, “ Our data suggest that the agency approach is highly relevant to an understanding of corporate dividend policies around the world.”

To summarize, the empirical results for the agency costs explanation of dividend policy are mixed. The agency costs hypothesis posits that dividends mitigate the cash under management control, and therefore reducing the possibility that managers will use the funds in their own self-interest. Dividends may also curb managers’ tendency for overinvesting. In this way, it is suggested that

---

<sup>26</sup> “In a tender offer a firm offers to purchase its stock at a specified price, usually a premium to the market price” (Asquith and Mullins, 1986, p.33).

<sup>27</sup> They suggested that, generally, in countries such as the US, UK, and Australia where common law is implemented, investors have better protection than in countries governed by civil law such as France, Germany, and Japan.



dividends serve to reduce conflict of interests between managers and shareholders. As dividend payments reduce the overinvestment problem and agency costs, they may have a positive impact on stock price, which is in turn the critical determinant of firm value.

### 3.7. Summary

The literature on dividend policy has produced a large body of theoretical and empirical research, especially following the publication of the dividend irrelevance hypothesis of M&M (1961). No general consensus has yet emerged after several decades of investigation, and scholars can often disagree even about the same empirical evidence. In perfect capital markets, M&M asserted that the value of a firm is independent of its dividend policy. However, various market imperfections exist (taxes, transaction costs, information asymmetry, agency problems, etc) and these market imperfections have provided the basis for the development of various theories of dividend policy including tax-preference, clientele effects, signalling, and agency costs.

This paper began with an overview of the evolution of corporate dividend policy. It was noted that dividend policy has been bound up with the development and history of the corporation itself. The paper also presented the basic argument and M&M proof of dividend irrelevancy. The paper then explored the main theories that counter the irrelevancy proposition. In order to provide an understanding of dividend policy theories, this article attempted to explain the basic argument for each theory followed by the most important empirical evidence on testing of these theories

Although numerous studies have examined various issues of dividend policy, they have produced mixed and inconclusive results. Perhaps the famous statement of Fisher Black about dividend policy "the harder we look at the dividends picture, the more it seems like a puzzle, with pieces that just do not fit together" (Black, 1976, p. 5) is still valid.

### References

- [1] Aharony, Joseph, and Itzhak Swary, 1980, Quarterly Dividend and Earnings Announcements and Stockholders' Returns: An Empirical Analysis, *Journal of Finance* 35, 1-12.
- [2] Allen, Franklin , Antonio E. Bernardo, and Ivo Welch, 2000, A Theory of Dividends Based on Tax Clienteles, *Journal of Finance* 55, 2499-2536.
- [3] Allen, Franklin, and Roni Michaely, 2002, Payout Policy, in George Constantinides, Milton Harris, and Rene Stulz, eds.: *North-Holland Handbooks of Economics* (Elsevier, Amsterdam), (in preparation, Downloaded from SSRN).
- [4] Alli, Kasim L., A.Qayyum Khan, and Gabriel G. Ramirez, 1993, Determinants of Corporate Dividend Policy: A Factorial Analysis, *The Financial Review* 28, 523-547.
- [5] Al-Malkawi, Husam-Aldin Nizar, 2005, "Dividend Policy of Publicly Quoted Companies in Emerging Markets: The Case of Jordan", Doctoral Thesis, School of Economics and Finance (University of Western Sydney, Sydney).
- [6] Amihud, Yakov, and Maurizio Murgia, 1997, Dividends, Taxes, and Signaling: Evidence from Germany, *Journal of Finance* 52, 397-408.
- [7] Ang, James S., ed., 1987. *Do Dividends Matter? A Review of Corporate Dividend Theories and Evidence* (Salomon Brothers Center for the Study of Financial Institutions and the Graduate Schools of Business Administration of New York University, New York).
- [8] Ang, James S., David W. Blackwell, and William L. Megginson, 1991, The Effect of Taxes on the Relative Valuation of Dividends and Capital Gains: Evidence from Dual-Class British Investment Trusts, *Journal of Finance* 46, 383-399.
- [9] Asquith, Paul, and David W. Mullins, Jr., 1983, The impact of Initiating Dividend Payments on Shareholders' Wealth, *Journal of Business* 56, 77-96.
- [10] Asquith, Paul, and David W. Mullins, Jr., 1986, Signalling with, Dividends, Stock Repurchases, and Equity Issues, *Financial Management* 15, 27-44.

- [11] Auerbach, Alan J., 1983, Stockholder Tax Rates and Firm Attributes, *Journal of Public Economics* 21, 107-127.
- [12] Bajaj, Mukesh B., and Anand M. Vijh, 1990, Dividend Clienteles and the Information Content of Dividend Changes, *Journal of Financial Economics* 26, 193-219.
- [13] Baker, H. Kent, 2009, Dividends and Dividend Policy (Ed.), Kolb Series in Finance, Wiley.
- [14] Baker, H. Kent, Gail E. Farrelly, and Richard B. Edelman, 1985, A Survey of Management Views on Dividend Policy, *Financial Management* 14, 78-84.
- [15] Baker, H. Kent, Gary E. Powell, and E. Theodore Veit, 2002a, Revisiting Managerial Perspectives on Dividend Policy, *Journal of Economics and Finance* 26, 267-283.
- [16] Baker, H. Kent, and Gary E. Powell, 1999, How Corporate Managers View Dividend Policy, *Quarterly Journal of Business and Economics* 38, 17-35.
- [17] Baker, H. Kent, Gary E. Powell, and E. Theodore Veit, 2002b, Revisiting the Dividend Puzzle: Do All of the Pieces now fit?, *Review of Financial Economics* 11, 241-261.
- [18] Baker, H. Kent, E. Theodore Veit, and Gary E. Powell, 2001, Factors Influencing Dividend Policy Decisions of Nasdaq Firms, *The Financial Review* 38, 19-37.
- [19] Bali, Rakesh, 2003, An Empirical Analysis of Stock Returns Around Dividend Changes, *Applied Economics* 35, 51-61.
- [20] Bali, Rakesh, and Gailen Hite, 1998, Ex-Dividend Day Price Behavior: Discreteness or Tax Induced Clientele, *Journal of Financial Economics* 47, 127-159.
- [21] Ball, Ray, Philip Brown, Frank J. Finn, and R. R. Officer, 1979, Dividend and the Value of the Firm: Evidence from the Australian Equity Market, *Australian Journal of Management* 4, 13-26.
- [22] Barclay, Michael J., 1987, Dividends, Taxes, and Common Stock Prices: The Ex-Dividend Day Behavior of Common Stock Prices Before the Income Tax, *Journal of Financial Economics* 19, 31-44.
- [23] Bartholdy, Jan, and Kate Brown, 1999, Ex-Dividend Day Pricing in New Zealand, *Accounting and Finance* 39, 111-129.
- [24] Baskin, Jonathan B., 1988, The Development of Corporate Financial Markets in Britain and the United States, 1600-1914: Overcoming Asymmetric Information, *The Business History Review* 62, 199-237.
- [25] Baskin, Jonathan B., and Paul J. Miranti, Jr., 1997. *A History of Corporate Finance* (Cambridge University Press, Cambridge).
- [26] Baumol, William J., 1963, On Dividend Policy and Market Imperfection, *Journal of Business* 36, 112-115.
- [27] Benartzi, Shlomo, Roni Michaely, and Richard H. Thaler, 1997, Do Changes in Dividends Signal the Future or the Past?, *Journal of Finance* 52, 1007-1034.
- [28] Bernheim, B. Douglas, 1991, Tax Policy and the Dividend Puzzle, *Rand Journal of Economics* 22, 455-476.
- [29] Bernstein, P.L., 1996, Dividends: The Puzzle, *Journal of Applied Corporate Finance* 9, 16-22.
- [30] Bhattacharya, Sudipto, 1979, Imperfect Information, Dividend Policy, and "the Bird in the Hand" Fallacy, *Bell Journal of Economics* 10, 259-270.
- [31] Bishop, Steven R., Harvey R. Crapp, Robert W. Faff, and Garry J. Twite, 2000. *Corporate Finance* (Prentice Hall Inc., Sydney).
- [32] Black, Fischer, 1976, The Dividend Puzzle, *Journal of Portfolio Management* 2, 5-8.
- [33] Black, Fischer, and Myron S. Scholes, 1974, The Effects of Dividend Yield and Dividend Policy on Common Stock Prices and Returns, *Journal of Financial Economics* 1, 1-22.
- [34] Blume, Marshall E., 1980, Stock Returns and Dividend Yields: Some More Evidence, *Review of Economics and Statistics* 62, 567-577.
- [35] Booth, L. D., and D. J. Johnston, 1984, The Ex-Dividend Day Behavior of Canadian Stock Prices: Tax Changes and Clientele Effects, *Journal of Finance* 39, 457-476.

- [36] Brennan, Michael J., 1970, Taxes, Market Valuation and Corporate Financial Policy, *National Tax Journal* 23, 417-427.
- [37] Brigham, Eugene F., and Myron J. Gordon, 1968, Leverage, Dividend Policy, and the Cost of Capital, *Journal of Finance* 23, 85-103.
- [38] Brown, Philip, and Terry Walter, 1986, Ex-Dividend Day Behaviour of Australian Share Prices, *Australian Journal of Management* 11, 139-152.
- [39] Casey, K. Michael, and Ross N. Dickens, 2000, The Effect of Tax and Regulatory Changes in Commercial Bank Dividend Policy, *Quarterly Review of Economics and Finance* 40, 279-293.
- [40] Charest, Guy, 1978, Dividend Information, Stock Returns and Market Efficiency. II, *Journal of Financial Economics* 6, 297-330.
- [41] Conroy, Robert M., Kenneth M. Eades, and Robert S. Harris, 2000, A Test of the Relative Pricing Effects of Dividends and Earnings: Evidence from Simultaneous Announcements in Japan, *Journal of Finance* 55, 1199-1227.
- [42] Dasilas, Apostolos , 2009, The ex-dividend day stock price anomaly: evidence from the Greek stock market, *Financial Markets and Portfolio Management*, Volume 23, Number 1 2009
- [43] DeAngelo, Harry, Linda DeAngelo, and Douglas J. Skinner, 1996, Reversal of Fortune: Dividend Signalling and the Disappearance of Sustained Earnings Growth, *Journal of Financial Economics* 40, 341-371.
- [44] Dempsey, Stephen J., and Gene Laber, 1992, Effects of Agency and Transaction Costs on Dividend Payout Ratios: Further Evidence of the Agency-Transaction Cost Hypothesis, *Journal of Financial Research* 15, 317-321.
- [45] Denis, David J., Diane K. Denis, and Atulya Sarin, 1994, The Information Content of Dividend Changes: Cash Flow Signaling, Overinvestment, and Dividend Clienteles, *Journal of Financial and Quantitative Analysis* 29, 567-587.
- [46] Dewenter, Kathryn L., and Vincent A. Warther, 1998, Dividends, Asymmetric Information, and Agency Conflicts: Evidence from a Comparison of the Dividend Policies of Japanese and U.S. Firms, *Journal of Finance* 53, 879-904.
- [47] Dhaliwal, Dan S., Merle Erickson, and Robert Trezevant, 1999, A Test of the Theory of Tax Clienteles for Dividend Policies, *National Tax Journal* 52, 179-194.
- [48] Diamond, James J, 1967, Earnings Distribution and the Valuation of Shares: Some Recent Evidence, *Journal of Financial and Quantitative Analysis* 2, 15-30.
- [49] Eades, Kenneth M., Patrick J. Hess, and E. Han Kim, 1984, On Interpreting Security Returns During the Ex-Dividend Period, *Journal of Financial Economics* 13, 3-34.
- [50] Easterbrook, Frank H., 1984, Two Agency Costs Explanations of Dividends, *American Economic Review* 74, 650-659.
- [51] Elton, Edwin J., and Martin J. Gruber, 1970, Marginal Stockholder Tax Rates and the Clientele Effect, *Review of Economics and Statistics* 52, 68-74.
- [52] Elton, Edwin J., and Martin J. Gruber, and Christopher R. Blake, 2005, Marginal Stockholder Tax Effects and Ex-Dividend Day Behavior: Thirty Two Years Later, *Review of Economics and Statistics* 87, 579-586.
- [53] Elton, Edwin J., Martin J. Gruber, and Joel Rentzler, 1984, The Ex-Dividend Day Behavior of Stock Prices; A Re-Examination of the Clientele Effect: A Comment, *Journal of Finance* 39, 551-556.
- [54] Fama, Eugene F., and Kenneth R. French, 2001, Disappearing Dividends: Changing Firm Characteristics or Lower Propensity to Pay?, *Journal of Financial Economics* 60, 3-43.
- [55] Fazzari, Steven M., R. Glenn Hubbard, and Bruce C. Petersen, 1988, Financing Constraints and Corporate Investment, *Brooking Papers on Economic Activity* 1, 141-195.
- [56] Fisher G.R. (1961), Some Factors Influencing Share Prices, *Economic Journal* 71,121-141.
- [57] Frankfurter, George M., and Bob G. Wood, Jr., 1997, The Evolution of Corporate Dividend Policy, *Journal of Financial Education* 23, 16-33.

- [58] Frankfurter, George M., and Bob G. Wood, Jr., 2002, Dividend Policy Theories and Their Empirical Tests, *International Review of Financial Analysis* 11, 111-138.
- [59] Friend, Irwin, and Marshall Puckett, 1964, Dividend and Stock Prices, *American Economic Review* 54, 656-682.
- [60] Gaver, Jennifer J., and Kenneth M. Gaver, 1993, Additional Evidence on the Association Between the Investment Opportunity Set and Corporate Financing, Dividend, and Compensation Policies, *Journal of Accounting and Economics* 16, 125-160.
- [61] Gonedes, Nicholas J., 1978, corporate Signalling, External Accounting, and Capital Market Equilibrium: Evidence on Dividends, Income, and Extraordinary Items, *Journal of Accounting Research* 16, 26-79.
- [62] Gordon, Myron J., 1959, Dividends, Earnings, and Stock Prices, *Review of Economics and Statistics* 41, 99-105.
- [63] Gordon, Myron J., 1963, Optimal Investment and Financing Policy, *Journal of Finance* 18, 264-272.
- [64] Gordon, Myron J., and Eli Shapiro, 1956, Capital Equipment Analysis: The Required Rate of Profit, *Management Science* 3, 102-110.
- [65] Grammatikos, Theoharry, 1989, Dividend Stripping, Risk Exposure, and the Effect of the 1984 Tax Reform Act on the Ex-Dividend Day Behavior, *Journal of Business* 62, 157-173.
- [66] Han, Ki C., Suk Hun Lee, and David Y. Suk, 1999, Institutional Shareholders and Dividends, *Journal of financial and Strategic Decisions* 12, 53-62.
- [67] Healy, Paul M., and Krishna G. Palepu, 1988, Earnings Information Conveyed by Dividend Initiations and Omissions, *Journal of Financial Economics* 21, 149-176.
- [68] Heath, David C., and Robert A. Jarrow, 1988, Ex-Dividend Stock Price Behavior and Arbitrage Opportunities, *Journal of Business* 61, 95-108.
- [69] Hess, Patrick J., ed., 1981. *The Dividend Debate: 20 Years of Discussion*, In *"The Revolution in Corporate Finance"*, 1992 (Blackwell Publishers, Cambridge, Massachusetts).
- [70] Hietala, Pekka T., 1990, Equity Markets and Personal Taxation: the Ex-Dividend Day Behaviour of Finnish Stock Prices, *Journal of Banking and Finance* 14, 327-350.
- [71] Holder, Mark E., Frederick W. Langrehr, and J. Lawrence Hexter, 1998, Dividend Policy Determinants: An Investigation of the Influences of Stakeholder Theory, *Financial Management* 27, 73-82.
- [72] Howe, Keith, M., Jia He, and G. Wenchi Kao, 1992, One-Time Cash Flow Announcements and Free Cash-Flow Theory: Share Repurchases and Special Dividends, *Journal of Finance* 47, 1963-1975.
- [73] Jensen, Gerald R., Donald P. Solberg, and Thomas S. Zorn, 1992, Simultaneous Determination of Insider Ownership, Debt, and Dividend Policies, *Journal of Financial and Quantitative Analysis* 27, 274-263.
- [74] Jensen, Michael C., 1986, Agency Costs of Free Cash Flow, Corporate Finance, and Takeovers, *American Economic Review* 76, 323-329.
- [75] Jensen, Michael C., and William H. Meckling, 1976, Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure, *Journal of Financial Economics* 3, 305-360.
- [76] John, Kose, and Joseph Williams, 1985, Dividends, Dillution, and Taxes: A Signalling Equilibrium, *Journal of Finance* 40, 1053-1070.
- [77] Kalay, Avner, 1982, The Ex-Dividend Day Behavior of Stock Prices: A Re-Examination of the Clientele Effect, *Journal of Finance* 37, 1059-1070.
- [78] Kalay, Avner, and Uri Loewenstein, 1985, Predictable Events and Excess Returns: The Case of Dividend Announcements, *Journal of Financial Economics* 14, 423-449.
- [79] Kalay, Avner, and Roni Michaely, 2000, Dividends and Taxes: A Reexamination, *Financial Management* 29, 55-75.

- [80] Karpoff, Jonathan M., and Ralph A. Walkling, 1988, Short-Term Trading Around Ex-Dividend Days: Additional Evidence, *Journal of Financial Economics* 21, 291-298.
- [81] Karpoff, Jonathan M., and Ralph A. Walkling, 1990, Dividend Capture in NASDAQ Stocks, *Journal of Financial Economics* 28, 39-65.
- [82] Kato, Kiyoshi, and Uri Loewenstein, 1995, The Ex-Dividend-Day Behavior of Stock Prices: The Case of Japan, *The Review of Financial Studies* 8, 817-847.
- [83] Keim, Donald B., 1985, Dividend Yields and Stock Returns: Implications of Abnormal January Returns, *Journal of Financial Economics* 14, 473-489.
- [84] Koch, Paul D., and Catherine Shenoy, 1999, The Information Content of Dividend and Capital Structure Policies, *Financial Management* 28, 16-35.
- [85] Koski, Jennifer Lynch, and John T. Scuggs, 1998, Who Trades Around the Ex-Dividend Day? Evidence from NYSE Audit File Data, *Financial Management* 27, 58-72.
- [86] Kumar, Praveen K., 1988, Shareholders-Manager Conflict and the Information Content of Dividends, *Review of Financial Studies* 1, 111-136.
- [87] La Porta, Rafeal, Florenico Lopez-De-Silanes, Andrei Shleifer, and Robert W. Vishny, 2000, Agency Problems and Dividend Policies Around the World, *Journal of Finance* 55, 1-33.
- [88] Lakonishok, Josef, and Theo Vermaelen, 1983, Tax Reform and Ex-Dividend Day Behavior, *Journal of Finance* 38, 1157-1179.
- [89] Lang, Larry H. P., and Robert H. Litzenberger, 1989, Dividend Announcements: Cash Flow Signalling vs. Free Cash Flow Hypothesis, *Journal of Financial Economics* 24, 181-191.
- [90] Laub, P. Michael, 1976, On the Informational Content of Dividends, *Journal of Business* 49, 73-80.
- [91] Lease, Ronald C., Kose John, Avner Kalay, Uri Loewenstein, and Oded H. Sarig, 2000. *Dividend Policy: Its Impact on Firm Value* (Harvard Business School Press, Boston, Massachusetts).
- [92] Lewellen, Wilbur G., Kenneth L. Stanley, Ronald C. Lease, and Gary G. Schlarbaum, 1978, Some Direct Evidence on the Dividend Clientele Phenomenon, *Journal of Finance* 33, 1385-1399.
- [93] Lie, Erik, 2000, Excess Funds and Agency Problems: An Empirical Study of Incremental Cash Disbursements, *Review of Financial Studies* 13, 219-248.
- [94] Lintner, John, 1956, Distribution of Incomes of Corporations Among Dividends, Retained Earnings, and Taxes, *American Economic Review* 46, 97-113.
- [95] Lintner, John, 1962, Dividends, Earnings, Leverage, Stock Prices and Supply of Capital to Corporations, *The Review of Economics and Statistics* 64, 243-269.
- [96] Lipson, Marc L, Maquieira Carlos P., and William Megginson, 1998, Dividend Initiations and Earnings Surprises, *Financial Management* 27, 36-45.
- [97] Litzenberger, Robert H., and Krishna Ramaswamy, 1979, The Effect of Personal Taxes and Dividends on Capital Asset Prices, *Journal of Financial Economics* 7, 163-195.
- [98] Litzenberger, Robert H., and Krishna Ramaswamy, 1982, The Effects of Dividends on Common Stock Prices: Tax Effects or Information Effects?, *Journal of Finance* 37, 429-443.
- [99] Lloyd, William P., John S. Jahera, and Daniel E. Page, 1985, Agency Costs and Dividend Payout Ratios, *Quarterly Journal of Business and Economics* 24, 19-29.
- [100] Michaely, Roni, Richard H. Thaler, and Kent L. Womack, 1995, Price Reactions to Dividend Initiations and Omissions: Overreaction or Drift?, *Journal of Finance* 50, 573-608.
- [101] Michaely, Roni, and Jean-Luc Vila, 1996, Trading Volume with Private Valuation: Evidence from the Ex-Dividend Day, *Review of Financial Studies* 9, 471-509.
- [102] Miller, Merton H., 1977, Debt and Taxes, *Journal of Finance* 32, 21-35.
- [103] Miller, Merton H., 1986, Behavioral Rationality in Finance: The Case of Dividends, *Journal of Business*

- [104] Miller, Merton H., and Franco Modigliani, 1961, Dividend Policy, Growth, and the Valuation of Shares, *Journal of Business* 34, 411-433.
- [105] Miller, Merton H., and Kevin Rock, 1985, Dividend Policy Under Asymmetric Information, *Journal of Finance* 40, 1031-1051.
- [106] Miller, Merton H., and Myron S. Scholes, 1978, Dividends and Taxes, *Journal of Financial Economics* 6, 333-264.
- [107] Miller, Merton H., and Myron S. Scholes, 1982, Dividend and Taxes: Some Empirical Evidence, *Journal of Political Economy* 90, 1118-1141.
- [108] Modigliani, Franco, and Merton H. Miller, 1958, The Cost of Capital, Corporation Finance and the Theory of Investment, *American Economic Review* 48, 261-297.
- [109] Morgan, Gareth, and Stephen Thomas, 1998, Taxes, Dividend Yields and Returns in the UK Equity Market, *Journal of Banking and Finance* 22, 405-423.
- [110] Morgan, Ian G., 1982, Dividends and Capital Asset Prices, *Journal of Finance* 37, 1071-1086.
- [111] Nissim, Doron, and Amir Ziv, 2001, Dividend Changes and Future Profitability, *Journal of Finance* 56, 2111-2133.
- [112] Ofer, Aharon R., and Anjan V. Thakor, 1987, A Theory of Stock Price Responses to Alternative Corporate Cash Disbursement Methods: Stock Repurchases and Dividends, *Journal of Finance* 42, 365-394.
- [113] Partington, Graham H., 1985, Dividend policy and its Relationship to Investment and Financing Policies: Empirical Evidence, *Journal of Business Finance and Accounting* 12, 531-542.
- [114] Pettit, R. Richardson, 1972, Dividend Announcements, Security Performance, and Capital Market Efficiency, *Journal of Finance* 27, 993-1007.
- [115] Pettit, R. Richardson, 1976, The Impact of Dividend and Earnings Announcements: A Reconciliation, *Journal of Business* 49, 89-96.
- [116] Pettit, R. Richardson, 1977, Taxes, Transactions costs and the Clientele Effect of Dividends, *Journal of Financial Economics* 5, 419-436.
- [117] Poterba, James M., and Lawrence H. Summers, 1984, New Evidence That Taxes Affect the Valuation of Dividends, *Journal of Finance* 39, 1397-1415.
- [118] Richardson, Gordon, Stephan E. Sefcik, and Rex Thompson, 1986, A Test of Dividend Irrelevance Using Volume Reactions to a Change in Dividend Policy, *Journal of Financial Economics* 17, 313-333.
- [119] Rozeff, Michael S., 1982, Growth, Beta and Agency Costs as Determinants of Dividend payout Ratios, *The Journal of Financial Research* 5, 249-259.
- [120] Saxena, Atul K., 1999, Determinants of Dividend Payout Policy: Regulated Versus Unregulated Firms, Working Paper, (State University of West Georgia).
- [121] Scholz, John Karl, 1992, A Direct Examination of the Dividend Clientele Hypothesis, *Journal of Public Economics* 49, 261-285.
- [122] Seida, Jim A., 2001, Evidence of Tax-Clientele-Related Trading Following Dividend Increases, *Journal of the American Taxation Association* 23, 1-21.
- [123] Short, Helen, Hao Zhang, and Kevin Keasey, 2002, The Link Between Dividend policy and Institutional Ownership, *Journal of Corporate Finance* 8, 105-122.
- [124] Siddiqi, Mazhar A., 1995, An Indirect Test for Dividend Relevance, *Journal of Financial Research* 18, 89-101.
- [125] Soter, Dennis, Eugene Brigham, and Paul Evanson, 1996, The Dividend Cut Heard' Round The World: The Case of FPL, *Journal of Applied Corporate Finance* 9, 4-15.
- [126] Travlos, Nickoas, Leons Trigeorgis, and Nikos Vafeas, 2001, Shareholder Wealth Effects of Dividend Policy Changes in an Emerging Stock Market: The Case of Cyprus, *Multinational Finance Journal* 5, 87-112.
- [127] Van Horn, James C., and John G. McDonald, 1971, Dividend Policy and New Equity Financing, *Journal of Finance* 26, 507-519.

- [128] Walker, C. E., 1931, The History of the Joint Stock Company, *The Accounting Review* 6, 97-105.
- [129] Walter, James E., 1963, Dividend Policy: Its Influence on the Value of the Enterprise, *Journal of Finance* 18, 280-291.
- [130] Watts, Ross, 1973, The Information Content of Dividends, *Journal of Business* 46, 191-211.
- [131] Woolridge, J. Randall, 1983, Dividend Changes and Security Prices, *Journal of Finance* 38, 1607-1615.
- [132] Yoon, Pyung Sig, and Laura T. Starks, 1995, Signalling, Investment Opportunities, and Dividend Announcements, *Review of Financial Studies* 8, 995-1018