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Cass Business School
City of London

**THE DIVIDEND POLICY IN EUROPE: THE CASES OF THE
UK, GERMANY, FRANCE AND ITALY**

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**THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS
FOR THE
DEGREE OF DOCTOR OF PHILOSOPHY**

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ABBREVIATIONS

- * **ACT:** Advanced Corporation Tax
- * **AF:** Avoir Fiscal
- * **AR:** Abnormal Return
- * **AR_{ATR}:** Abnormal Returns After Tax Reform
- * **AR_{BTR}:** Abnormal Returns Before Tax Reform
- * **ASK_{ex}:** Ask Price on the Ex-dividend Day
- * **BAS_{ex}:** Bid-Ask Spread on the Ex-Dividend Day
- * **BID_{ex}:** Bid Price on the Ex-Dividend Day
- * **CAPM:** Capital Asset Pricing Model
- * **CAR:** Cumulative Abnormal Return
- * **D/E:** Debt/Equity Ratio
- * **D:** Gross Dividends
- * **d:** Net Dividends
- * **DGM:** Dividend Growth Model
- * **DIT:** Dual Income Tax
- * **DPR:** Dividend Payout Ratio
- * **DPS:** Dividend Per Share
- * **DVM:** Dividend Valuation Model
- * **DY:** Dividend Yield
- * **EPS:** Earnings Per Share
- * **FA:** Finance Act
- * **FCF:** Free Cash Flow
- * **g:** Annual Growth Rate
- * **ICTA:** Income and Corporation Taxes Act
- * **ILOR:** Imposta Locale Sui Redditi
- * **IRPEG:** Imposta Sul Reddito Delle Persone
- * **K_e:** Cost of Equity
- * **LSSV:** La Porta, Silanes, Shleifer and Vishny
- * **m:** Personal Income Tax Rate
- * **MM (1961):** Miller and Modigliani (1961)
- * **MMQ:** Minimum Marketable Quantity
- * **NMS:** Normal Market Size

- * **NOI:** Net Operating Income
- * **NPV:** Net Present Value
- * **PAT:** Profit After Tax
- * **P_{cum}:** Share Price Cum Dividend, i.e. Before the Ex-Dividend Day
- * **P_{ex}:** Ex-dividend Day Share Price
- * **P_p:** Purchase Share Price
- * **s:** Imputation Tax Credit
- * **T_c :** Corporation Tax
- * **T_{c,de}:** Corporation Tax on Distributed Earnings
- * **T_{c,re}:** Corporation Tax on Retained Earnings
- * **TD:** Tax Discrimination Variable
- * **TD_{FR}:** Tax Discrimination Variable in France
- * **TD_{GER,LT}:** Tax Discrimination Variable in Germany, Long-Term
- * **TD_{GER,ST}:** Tax Discrimination Variable in Germany, Short-term
- * **TD_{IT}:** Tax Discrimination Variable in Italy
- * **TD_{UK}:** Tax Discrimination Variable in the United Kingdom
- * **T_g:** Notional Tax Rate (Italy)
- * **T_L:** Local Tax
- * **T_L:** Local Tax Rate (Italy)
- * **TRA:** Tax Reform Act
- * **T_w :** Withholding Tax
- * **UK:** United Kingdom
- * **VAT:** Value Added Tax
- * **z:** Capital Gains Tax Rate

DEDICATED TO
MY BELOVED ONES

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ABSTRACT

This thesis attempts to provide a comparative and comprehensive understanding of corporate dividend policy in European Countries. I examine the dividend policy of the firm in the UK, Germany, France and Italy. The thesis is motivated by the importance of dividend policy theory in the area of finance, the mixed theoretical and empirical evidence, the predominately US based literature and by the financial, institutional and corporate governance differences between European countries.

The thesis examines the “big three imperfections” of the dividend policy: taxation, asymmetric information and agency costs. The uniqueness of the thesis is its European character. The main argument is that differences in taxation and corporate governance systems between European countries can prove a useful tool for providing some answers to the dividend puzzle. With respect to dividend taxation systems the UK operates a partial imputation system while Germany, France and Italy operate full imputation systems. With respect to the corporate governance systems the UK is characterised as a market-based country while Germany, France and Italy are characterised as bank-based systems.

In general results show that there are significant differences between dividend taxation systems in European countries that result in variations of the tax discrimination variable. In all countries ex-day returns are positive and significant suggesting that ex-day prices fall by less than the amount of dividends. Results confirm that in countries where the differential taxation between dividends and capital gains is high, ex-day returns are high. Also, I find that changes in the tax systems that affect taxes on dividend and/or capital gains alter significantly ex-day returns.

Furthermore, the corporate governance differences between market-based and bank-based countries result in different levels of information asymmetries and/or agency conflicts. Results in all the countries show significant share price reaction on the dividend announcement days. Evidence provides support to the information content of dividend hypothesis. Moreover, I do not find evidence to reject the signalling hypothesis over the overinvestment hypothesis.

1. THE DIVIDEND POLICY IN EUROPE: UNITED KINGDOM, GERMANY, FRANCE AND ITALY – AN INTRODUCTION

“ The effect of a firm’s dividend policy on the current price of its shares is a matter of considerable importance, not only to the corporate officials who must set the policy, but to investors planning portfolios and to economists seeking to understand and appraise the functioning of the capital markets”

Miller and Modigliani, 1961

This thesis empirically investigates the dividend policy in Europe and particularly in the United Kingdom,¹ Germany, France and Italy. My interest in this topic arose not only from the importance of dividend policy in the area of finance, but from the fact that explaining dividend policy has been one of the most difficult challenges facing financial economists. Despite decades of study, theoretical and empirical literature has yet to completely understand the factors that influence dividend policy and the manner in which these factors interact. Two decades ago, Black (1976) noted that “The harder we look at the dividend picture, the more it seems like a puzzle, with pieces that just don’t fit together” (page 5). The situation is pretty much the same today. In a recent survey of dividend policy, Allen and Michaely (1995) conclude, “Much more empirical and theoretical research on the subject of dividends is required before a consensus can be reached” (page 833); while Brealey and Myers (2003) list dividends as one of the ten important unsolved problems in finance.

Nevertheless, the literature has to offer valuable and significant theories and explanations to the dividend puzzle and the dividend theory of the firm. The different theories developed, can be categorised into three *major* areas – **Taxation Effect Hypothesis,**² **Signalling Information Content of Dividends Hypothesis,**³ and **Agency Conflict Hypothesis.**⁴ However, studies *mainly* concentrate on the US market and country comparative studies are limited. Since literature has also proposed that dividend policy is significantly related to the market, financial, organisational, institutional and legal characteristics of the firm,⁵ the differences in corporate governance systems and taxation systems between European countries constitute a major motivation for a cross-country comparative study. The European countries under consideration are categorised into market-oriented countries (UK) and bank-oriented countries (Germany, France and Italy) when

¹ Henceforth UK

² Brennan (1970), Poterba and Summers (1985), Miler and Scholes (1978, 1982), King (1977), Auerbach (1979), Bradford (1981), Elton and Gruber (1970), Kalay (1982), Lasfer (1995, 1996),

³ Bhattacharya (1979), John and Williams (1985), Miller and Rock (1985), Ambarish, John and Williams (1987).

⁴ Jensen and Meckling (1976), Easterbrook (1984), Jensen (1986), Rozeff (1982), Lang and Litzengerger (1989)

⁵ For example La Porta, Silanes, Shleifer and Vishny (2000), consider the legal protection of minority shareholders in an attempt to explain the dividend policy around the world.

considering the corporate governance systems;⁶ while in terms of the dividend taxation systems, these may be partial (as in the UK) or full imputation systems (as in Germany, France and Italy). The purpose is to test whether dividend policy theories can be applied in markets outside the US, as well as to observe and compare the differences of theory predictions under different taxation, market and financial environments. Particularly, I test whether different dividend taxation systems result in lower (higher) taxation burden when profits are distributed as dividends and whether this is reflected in the share price on the ex-dividend day; therefore, the predictions of the taxation hypothesis would differ in different countries. Similarly, I assume that under different corporate governance systems, there exist lower (higher) information asymmetry and/or agency conflicts; therefore, the role of dividend as a signalling mechanism to mitigate information asymmetry and/or as a mechanism to alleviate agency conflicts between managers and shareholders is less (more) important. According to the theory predictions the importance of dividends would be reflected in the share price behaviour on the announcement days.⁷ Rajan and Zingales (1995), investigate the Capital Structure using international data and note that the extent to which other countries are similar to the US, they provide an independent sample to test the theory and evidence developed, whereas differences would increase the ability to discriminate among alternative theories. Taking advantage of the recent improvement and availability of international data I conduct a comparative study across European countries, the first of its kind, to investigate the dividend policy in an attempt to shed light on the long existing and contradicting literature of dividend policy.

In the next section of this introductory chapter I highlight the importance of the dividend policy of the firm and discuss the major theories developed around this issue: the rightist position who argue that dividends affect positively the value of the firm,⁸ the leftist who argue that dividends have a negative effect on the value of the firm,⁹ and the Miller and Modigliani (1961) dividend irrelevance proposition. Miller and Modigliani argue that under certain assumptions¹⁰ dividend policy does not have any impact on the firm's value and thus, it does not affect the shareholders' wealth. Miller and Modigliani theory and assumptions are discussed in Section 1.2. Perhaps the most important contribution of the Miller and Modigliani pioneer paper is the careful description of the conditions under which dividend policy is irrelevant. The subsequent studies that have relaxed the Miller and Modigliani assumptions are discussed in Section 1.3. In Section 1.4 the aim and motivation of my study are discussed. European country differences in taxation systems and corporate governance systems, which are described in Section 1.5, are expected to affect the

⁶ See Franks and Mayer (1994, 1997), Berglöf (1990), Zysman (1983)

⁷ See for example Pettit (1972), Lang and Litzenberger (1989).

⁸ This is generally known as the Bird-in-the-hand fallacy (Gordon, 1959).

⁹ Mainly because of the higher taxation imposed on dividends as compared to capital gains. For example, in the US dividends are taxed twice, firstly at the corporation level and secondly, as income in the hands of the investors.

testing of dividend policy and the hypotheses to be tested in my study. In the last section, the rest of the thesis is presented.

1.1 THE IMPORTANCE AND THE BASIC THEORY OF DIVIDEND POLICY

Dividend policy continues to be a well-examined area of managerial decision-making. It is interesting because a good descriptive model of a firm's dividend policy is important for managers and portfolio managers in studying aspects of firm behaviour such as interactions between investing and financing decisions. More precisely, the attractiveness of the dividend policy lies in the fact that the dividend decision is one of the three major categories of corporate long-term financial decisions, that the firm's management face.¹¹ Management can affect shareholder wealth through *Capital Investment*, *Capital Structure* and *Dividend Decisions*. The investment decisions of the firm determine the level of future earnings and future potential dividend. Secondly, capital structure influences the cost of capital, which determines, in a way, the accepted investment opportunities; and thirdly, dividend policy influences the amount of equity in the capital structure of the firm through retained earnings. As a consequence it also influences the cost of capital. Allen and Michaely (1995) strengthen the importance of dividends as they note that theories of asset pricing, capital structure, mergers and acquisitions and capital budgeting all rely on a view of how and why dividends are paid.

By the term “**Dividend Policy**”, one is referring to the practice that management follows in making dividend payout decisions, or, the size and pattern of cash distributions to the shareholders over time. When deciding how much to distribute to shareholders, financial managers must keep in mind that the firm's objective is to maximise shareholder value. Consequently, the **target payout ratio**, defined as the percentage of net income to be paid out as cash dividends, should be based on a large extent on investors' preferences for dividends over capital gains. Shareholders attach value to shares because they expect to receive a stream of dividends and hope to receive an eventual capital gain. Other things being equal, shareholders prefer higher to lower dividends, but issues such as capital investment strategy and taxation may cloud the relationship between dividend policy and share value. Based on this reservation, the *Dividend Valuation Model (DVM)* has been developed, which states that the value of a share now, P_0 , is the sum of the future discounted dividends plus the value of the share when sold, in the future:

$$P_0 = \frac{D_1}{(1+k_e)} + \frac{D_2}{(1+k_e)^2} + \dots + \frac{D_n}{(1+k_e)^n} + \frac{P_n}{(1+k_e)^n}, \quad (1)$$

¹⁰ Mainly under perfect market conditions

Where, k_e is the cost of equity, D is the amount of dividend and n is the year in which the share is sold. Therefore, the value of the share at any time may be found by valuing all future expected dividend payments over the lifetime of the company. If the company lifespan is assumed infinite and the annual dividend is constant, then the value of the share would be equal to:

$$P_0 = \sum_{t=1}^{\infty} \frac{D_t}{(1+k_e)^t} = \frac{D_1}{k_e}, \quad (2)$$

Where $D_1 = D_2 = \dots D_n$

This model implies that the company is distributing all its earnings as dividends, thus $D_t = E_t$. It is, however, too restrictive as dividends grow through time and companies do not pay all their earnings as dividends. A simplified version of this case is to assume that dividends grow at a constant rate g , implying that $D_1 = D_0(1+g)$, $D_2 = D_1(1+g) = D_0(1+g)^2$, etc. In this case, Equation (1) results in the following form, referred to as the *Dividend Growth Model (DGM)*:

$$P_0 = \frac{D_0(1+g)}{(k_e - g)} = \frac{D_1}{(k_e - g)} \quad (3)$$

The growth rate, g , is usually expressed as the product of the return on equity (ROE) times the retention ratio (earnings less dividends over earnings). The dividend growth model however, is subject to some key assumptions namely, that dividends grow at a constant rate and that k_e is higher than g .

If the company increases the payout ratio, then dividend, D , increases. This increase in the numerator, taken alone, would cause the share price to rise. However, if dividend is increased then less money will be available for reinvestment, and consequently the expected growth rate, g , will decline. This will tend to lower the share prices. Therefore, the company's **Optimal Dividend Policy** must strike a balance between current dividends and future growth so as to maximise the share price.

However, the opinion of the economists as to whether dividend policy affects the value of the firm differs. One endearing feature of economics is that it can always accommodate not just two but three opposing points of view. And indeed this is the case with the controversy about dividend

¹¹ See Copeland and Weston (1992), Brealey and Myers (2001), Lease, John, Kalay, Loewenstein and Sarig (1999)

policy. The question of whether paying dividends or paying larger than smaller dividends has a positive, negative or neutral effect on share prices is yet to be answered. Three theories have been developed.

Firstly, the conservative or rightist position represented by Graham and Dodd (1951),¹² states that dividends affect positively the value of the firm, that is, an increase in dividends, increases firm value. According to the rightists, dividends are valued more by investors than capital gains, mainly because of the risk involved in capital gains. In their security analysis, Graham and Dodd (1934) propose that investors buy shares in order to receive dividends. That is, dividends represent the return to the investor who puts money at risk in the corporation. At the same time, paying dividends is the ultimate goal of the firm. Corporations pay dividends to reward existing shareholders and to encourage others to buy new issues of common shares at high prices. Perhaps investors pay attention to dividends because through dividends, or the prospect dividends, they receive a return on their investment or the chance to sell their shares at a higher price in the future. One of the most popular and durable arguments for dividends is the Bird-in-the-hand theory,¹³ which posits that since share prices are highly variable, dividends represent a more reliable form of return than capital gains. The greater certainty associated with dividends leads investors to place higher value on dividends (bird in the hand) than on equivalent amount of uncertain and riskier capital gains (bird in the bush), regardless of how much the birds enjoy themselves in the bush.

Secondly, on the left, the radical economists believe that dividends affect the value of the firm negatively. They support that whenever dividends are taxed more heavily than capital gains,¹⁴ firms should pay the lowest cash dividend they can get away with and then available cash should be retained or used to repurchase shares. By shifting their distribution policies in this way, corporations can transmute dividends into capital gains. If this financial alchemy results in lower taxes, it should be welcomed by any taxpaying investor. This is the basic point made by the leftist party when it argues for low-dividend payout.

Finally, the middle of the roaders, Miller and Modigliani, in their pioneering theoretical paper show that in a world without taxes, transaction costs, or other market imperfections, the dividend

¹² In 1951, Graham and Dodd, highlighted the importance of dividends:

“... The considered and continuous verdict of the stock market is overwhelmingly in favour of liberal dividends as against niggardly ones. The common stock investor must take this judgement into account in the valuation of stock for purchase. It is now becoming standard practice to evaluate common stock by applying one multiplier to that portion of the earnings paid out in dividends and a much smaller multiplier to the undistributed balance”

¹³ See Gordon (1963), Lintner (1962)

¹⁴ Even when the taxation rates on dividends and capital gains are equal, for example after the 1986 Tax Reform Act (TRA) in the US, there is a tax disadvantage to dividends because capital gains are only taxed on realisation. See Constantinides (1983, 1984)

policy is irrelevant to the firm value. It is widely accepted that Miller and Modigliani made a scientific inquiry into the motives and consequences of corporate dividend policy, which constitutes the starting point of one of the longest and most intractable controversies in the literature of finance.

1.2 MILLER AND MODIGLIANI (1961) DIVIDEND IRRELEVANCE PROPOSITION

Miller and Modigliani (1961) content that a firm's value is determined solely by its investment decisions and that the dividend payout ratio is a *mere detail*, as the net payout is only a residual i.e. the difference between earnings and investments. They maintain that the effect of any particular dividend policy could be exactly offset by other forms of financing, such as the sale of new common equity shares.

The essence of the Miller and Modigliani theory is that investors can create their own dividends by selling shares of stock. If the firm retains earnings and invests them in new projects, existing shareholders can sell stock and consume the proceeds, leaving themselves in the same position as if the firm had paid a dividend. Alternatively, if management elects to pay a dividend, new stock must be issued to undertake new projects. If shareholders prefer to reinvest rather than consume, then they can do so by buying a pro rata share of the new stock issue with the dividends paid. In this instance, shareholders would be in the same position that they would have been in, if no dividend had been paid. Therefore, regardless, of corporate dividend policy, investors can create their own dividend position costlessly. This is referred to as the home made dividend. The situation will also lead to the "*Clientele Hypothesis*" according to which, the firms' dividend policy tends to attract "*clienteles*" consisting of those investors who are in favour of the firm's particular dividend policy. For these reasons, stockholders are indifferent to corporate dividend policy; as a consequence, the value of the firm is independent of its dividend policy.¹⁵

Perhaps the most important contribution of the Miller and Modigliani paper was the careful and detailed description of the conditions under which dividend policy is relevant.¹⁶ Dividend policy may be relevant if one or more of the assumptions underlying the Miller and Modigliani theory are violated. The Miller and Modigliani assumptions are listed below:

- **INDEPENDENCE OF THE COMPANY'S INVESTMENT AND DIVIDEND POLICIES:** The firm's investment policy is fixed; known by investors and not affected by its dividend policy. The firm follows a value maximising policy by accepting all *Positive Net Present Value* projects.
- **PERFECT CAPITAL MARKETS:**

¹⁵ A simple proof of the Miller and Modigliani dividend irrelevancy model is provided in Appendix 1.

¹⁶ See Allen and Michaely (1995) for a detailed discussion of the MM (1961) dividend irrelevance theory and the underlying assumptions.

- **There are no taxes.** The reason for this assumption is clear. Because dividends have been traditionally taxed more heavily than capital gains, at least in the US, in the absence of taxes investors are indifferent between receiving cash in the form of dividends or capital gains.
- **There is no information asymmetry.** All investors have the same information and that investors have the same information as the managers of the firm. However, in practice this is rarely the case. Managers are insiders and are likely to know more about the current and future prospects of the firms than outsiders. Dividends may reveal some information to outsiders about the value of the firm, or may be used to change the market's perception about the firm's value.
- **There are no contracting or agency costs associated with stock ownership.** This assumption means that there is no agency problem amongst managers and shareholders.¹⁷ In this case, motivating management's decisions is possible through the use of forcing contracts. Without complete contracting possibilities, dividend policy may, for example, help to ensure that managers act in the interest of shareholders.¹⁸
- **There are no transaction or flotation costs.** If this is the case, firm managers could distribute dividends and raise external funds to finance the investments of the company.¹⁹ Similarly investors are indifferent between dividends and selling their shares to obtain cash.²⁰
- **Markets are complete.** In order to realise the importance of this argument, assume that because trading opportunities are limited, there are two groups with different marginal rates of substitution between current and future consumption. By adjusting its dividend policy, the firm may be able to increase its value by appealing to one of these groups. Explanations along these lines, have received very little attention in the literature.²¹ Nevertheless, they may be important if some investors desire stocks with a steady income stream, and markets are incomplete because of high transaction costs.

About forty years after the Miller and Modigliani dividend irrelevance proposition, dividend policy has received considerable theoretical and empirical attention in the literature and great

¹⁷ Or shareholders and other claimants in the company (for example, bondholders, creditors); See Jensen and Meckling (1976).

¹⁸ A high payout ratio may force the management to be more disciplined in the use of the firm's resources and consequently increase firm value. See Jensen (1986).

¹⁹ A number of studies violated this assumption, including Rozeff (1982), Dempsey and Laber (1992), Alli, Khan and Ramirez (1993), Schooley and Barney (1994), Hansen, Kumar and Shome (1994), Moh'd, Perry and Rimbey (1995), Holder, Langrehr and Hexter (1998) found a negative relationship between dividends and issuing costs.

²⁰ Levy and Sarnat (1990) noted that shareholders seeking to increase their investment in the firm would prefer not to receive cash dividends, thereby increase his/her investment in the firm without incurring any transaction costs. By contrast, investors who desire to decrease their investment in the firm would prefer to receive dividends thereby avoiding transactions costs, which would apply to the alternative of selling shares on the market.

amount of work has been done in an attempt to explain the dividend policy phenomenon. The Miller and Modigliani proposition is today widely accepted, and the controversy around dividend policy concentrates on the question of whether and how in the presence of market imperfections such as taxes and/or information signalling dividend policy affects the value of the firm. Clearly, the observed interest in dividends must be related to some violation of the Miller and Modigliani assumptions. In the next section I provide a brief literature review, concentrating on relaxing each of the Miller and Modigliani assumptions as well as other factors identified to affect the dividend policy of the firm.

1.3 DIVIDEND POLICY BEYOND THE MILLER AND MODIGLIANI ASSUMPTIONS

The principal conclusion of Miller and Modigliani dividend irrelevance theory is that dividend policy does not affect the required rate of return on equity, k_e . This conclusion has been debated by academics. In particular, Gordon (1963) and Lintner (1962) argue that k_e decreases as the dividend payout is increased because investors are less certain of receiving the capital gains which are supposed to result from retaining earnings than they are of receiving dividend payments. Gordon and Lintner support that investors value a dollar of expected dividends more highly than a dollar of expected capital gains because the dividend yield component, DY/P_0 , is less risky than the capital gains, g , component in the total expected return equation, $k_e = (DY/P_0) + g$. This theory is today generally referred to as the "*Bird-in-the-hand Theory*."²² However, according to Frankfurter (1999) the Miller and Modigliani thesis is just a special case of the bird-in-the-hand model. In perfect markets, there cannot be two different opportunity rates, given risk. Therefore, according both to Miller and Modigliani and the bird-in-the-hand theories, firms should be indifferent between paying any, all, or some of their earnings as dividends.

Black (1976) examines each one of Miller and Modigliani assumptions in an attempt to solve the dividend puzzle as to why firms pay dividends. When considering dividend taxation, Black notes that investors and corporations are not indifferent to the level of dividends but they prefer smaller dividends or no dividends at all. On the other hand, transaction costs do not tell us much about why corporations pay dividends because if investors are concerned about transaction costs then non-dividend paying companies can arrange for other forms of distributing cash, such as automatic share repurchase plans. Moreover, dividend changes often convey information about the management perception of the firm; therefore we are unable to answer the question of why corporations pay dividends if dividend policy gives information to investors about the true management beliefs. Black also considers the creditors of the company who are in conflict with

²¹ See Allen and Michaely (1995), Brealey and Myers (2001) for a discussion. Also DeAngelo and Masulis (1980) amongst others.

²² One bird in the hand is better than two in the bush (regardless of how much the birds enjoy themselves in the bush).

the shareholders. That is, what helps the creditors will harm the shareholders; therefore, if the company pays dividends then the extra cash flow of the company will not end up in the hands of the creditors. However, if the company pays no dividends, then creditors might agree to better credit conditions and this would eliminate the negative effects of cutting the dividend on the position of the shareholders relative to the creditors. Moreover, the puzzle of why firms pay dividends gets more complicated when considering the investment policy of the company. Dividend decreases is a low cost way to raise money for new investments but on the other hand, dividend increases will prevent unprofitable investments. Black concludes that the harder we look at the dividend picture, the more it seems like a puzzle, with pieces that just don't fit together. Studies that relaxed the Miller and Modigliani assumptions and dealt with the dividend policy of the firm could be categorised in three major areas: Taxation, Signalling information content of dividends, and the agency conflict, which are examined in this study.²³

1.3.1 TAXATION EFFECT HYPOTHESIS

In the real world the Miller and Modigliani assumption of no taxation is violated. Three opposing views have been developed as to the effect of taxation on the dividends. The "*Tax Irrelevance View*" (Miller and Scholes, 1978) argues that taxes have no influence on dividends because shareholders can avoid dividend taxes; the "*New View*" (Zadrow, 1991), supports that taxes have no impact on dividends because dividends are simply the residual after investments have been financed from post-corporate taxes. This view is also known as the "*Capitalisation View*."²⁴ Thirdly, the "*Traditional View*" supports that dividend taxation is an additional cost on corporate profits. Studies in the literature that compare between the three taxation views include McKenzie and Thompson (1996); Poterba and Summers (1985); Harris, Hubbard and Kemsley (1999); Hubbard, Kemsley and Nissim (2001); Allen and Michaely (1995, 2001) amongst others. The tax related literature on dividends is extensive but remains inconclusive and mixed. Two basic tax approaches to the dividend puzzle have been developed in the literature.

The first examines the relationship between (risk-adjusted) before-tax rates of return and dividend yields. This is a variant of the *Capital Asset Pricing Model (CAPM)* first developed by Brennan (1970). If the effective tax rate on dividends exceeds the effective tax rate on capital gains for the marginal investor, then, all else equal, the before-tax (risk adjusted) rate of return on stocks with higher anticipated dividend yields must be higher to compensate for the higher tax rate on

²³ An additional view is provided by the behavioural models under which, the Miller and Modigliani assumption that investors are rational (i.e. prefer more wealth to less wealth) is violated. However, this has been a rare target of research in finance because this theory is not directly testable. The two major contributions to this area of dividend policy are the work of Thaler and Shefrin (1981) and Shefrin and Stateman (1984). The explanation presented is that investors prefer a managed dividend policy to provide discipline in their investment and consumption decisions.

dividends relative to capital gains. Tests of the Brennan relationship have been carried out by Morgan (1982), Poterba and Summers (1984, 1985), Keim (1985), Rosenberg and Marathe (1979) and Kalay and Michaely (1993, 2000) amongst others. Moreover, Litzenberger and Ramaswamy (1979, 1980, 1982) test the Brennan (1970) CAPM and interpret the positive dividend yield coefficient as evidence of a tax effect. Investor's aversion to dividends should result in higher expected returns and lower share prices. Litzenberger and Ramaswamy studies have been supported by Blume (1980), Hess (1983), Keim (1985), Morgan and Thomas (1998) amongst others. However, the empirical evidence based on this approach has been mixed. Black and Scholes (1974) express strong scepticism about the logic of the tax case against dividends and conclude that firms cannot influence the share prices by pursuing a high yield or low yield dividend policy. Moreover, Gordon and Bradford (1980), Miller and Scholes (1982) and Chen Grundy and Stambaugh (1990) amongst others find support for the notion that the dividend/capital gains tax differential does not affect before tax returns.

A second approach to the dividend policy of the firm is to examine the *ex-dividend day behaviour of share prices* and compare the expected price drop relative to the dividend per share. Without personal taxes on equity, arbitrage arguments imply that share prices should fall by the full amount of dividend on the ex-dividend day (Elton and Gruber, 1970). If the effective tax rate on dividends exceeds that on capital gains, similar arguments suggest that the reduction in the price should be less than the amount of dividend. Scholes and Wolfson (1992) provide a detailed discussion of this approach and its shortcomings. Elton and Gruber (1970) find evidence that the dividend and capital gains tax differential is important for the marginal investor. Evidence from the US²⁵ shows that share prices fall by less than the amount of dividend, implying that the dividend and capital gains differential was positive for the marginal investor. This is interpreted as evidence consistent with the "*Tax Effect Hypothesis*". Studies consistent with Elton and Gruber (1970) include Lasfer (1995, 1996), Bell and Jenkinson (2001), Heath and Jarrow (1988), Kaplanis (1986), and Barclay (1987).

However, these tax arguments were challenged by Kalay (1982) who developed the "*Short-Trading Effect Hypothesis*", which implies that in the presence of dividends and capital gains tax differential, arbitrage opportunities for *short-term traders* exist, for example for institutional investors who are taxed at the same rate on dividends and capital gains.²⁶ These traders may enter the market around the ex-dividend days in response to these arbitrage opportunities, effectively

²⁴ Dividends are capitalised into share prices, developed by King (1977), Auerbach (1979) and Bradford (1981).

²⁵ Also see Campell and Barenok (1955)

²⁶ Dividend Capturing activities are prohibited in the UK under the anti-tax avoidance legislation dealers, tax-exempt institutions and individuals are prevented from trading around the ex-day for the sole purpose of capturing dividends and/or avoiding taxes. See Poterba and Summers (1984) for details on the 1970 Anti-Avoidance Act.

becoming the marginal or price-setting investors around those days by virtue of their lower transaction costs. In the presence of these traders, it may be difficult to infer the effective tax rate on dividends by observing price drops, which could just represent transaction costs. Moreover, if such traders are the price setters around ex-dividend days, the absence of a tax effect may not mean that dividend taxes are irrelevant to dividend policy and investment decisions, as different groups of investors, with different tax characteristics, may form the company's usual marginal investor clientele. Karpof and Walking (1988), Eades, Hess and Kim (1984, 1994), Lakonishok and Vermaelen (1986), Koski (1996) find evidence in favour of the Short-Term Trading Hypothesis in the US.

The ex-day hypothesis is also reflected by studies that focus on market microstructure effects. Two studies recognise the fact that prices fall by less than the dividend, but they put forth explanations, which are neither related to taxes nor to short-term trading around the event. Bali and Hite (1998) argue that the drop in share prices by less than the dividend is due to discreteness in prices rather than taxes. Frank and Jagannathan (1998) on the other hand, hypothesise that the collection and reinvestment of dividends is bothersome for individual investors but not for market makers who tend to buy before a stock goes ex-dividend and then sell on the ex-date. They argue that the bid-ask bounce contributes to, if not totally to explain a phenomenon others interpret as tax/short-term trading effects.

Studies overcome the problem of interpretation of ex-dividend day pricing by analysing changes in the tax law. This provides natural experiments for investigating the impact of taxes on share prices based on the notion that if taxes are relevant to the marginal investor, changes in the differential tax treatment of dividends and capital gains should be reflected in share prices as soon as the tax changes are announced or anticipated. Poterba and Summers (1985) use this approach to analyse tax changes in the United Kingdom, and find that the impact of announcements of dividend tax reductions on share prices is positively (although not statistically significant) related to dividend yields. In effect, they find that changes in dividend taxation has a significant impact on ex-dividend price movements while changes in capital gains taxes do not, suggesting while the effective capital gains tax rate is close to zero, the effective tax rate on dividends is not. Lasfer (1995) analyses the effect of the 1988 ICTA in the UK, which is equivalent to the US 1986 Tax Reform Act that eliminated the preferential taxation of capital gains over dividends; and finds strong evidence to support the taxation effect hypothesis. In contrast, Michaely (1991) finds an ex-dividend price drop equal to dividend per share before and after the 1986 Tax Reform ACT, suggesting that ex-day returns are not affected by taxes. Menyah (1993) tests the tax effect hypothesis as opposed to the short-term hypothesis during four major tax changes in the UK and

results hardly show any support for the taxation effects. In summary, the evidence regarding tax effects and dividends remains controversial. Regardless of the methodology used, there is no clear consensus in the literature and in fact some studies suggest that other economic forces might explain dividend share price behaviour.

1.3.2 THE INFORMATION SIGNALLING HYPOTHESIS

The primary alternative explanation for why dividends are paid is that dividends send a signal to the market about the management's view on the future prospects of the firm. Studies, that analyze the signalling effects of dividend policy attempt to violate Miller and Modigliani assumption of no information asymmetry. Dividend signalling is an important topic because by paying dividends a firm can prove it is able to generate cash, not just accounting profits.²⁷ In turn, by revealing its profitability in this manner, the firm can be differentiated from less profitable firms. Another reason signalling is important to management is that it has an incentive to perform well enough to maintain its dividend and avoid the adverse consequences of a dividend cut or equity issues to replace funds paid out.

The first major dividend signalling study is credited to Bhattacharya (1979). He assumes that outside investors have imperfect information about the firm's profitability, and that cash dividends are taxed at a higher rate than capital gains. Under these assumptions, dividends function as a signal of expected cash flows. Bhattacharya's result concerning the shareholders' planning horizon is that the shorter the horizons over which the shareholders have to realise their wealth, the higher the equilibrium proportion of dividends to expected earnings. In his model, the announcement effects of dividends increases (decreases) are positive (negative). Dividend payouts are lower, with larger adverse tax consequences and higher flotation costs of external finance.

Bhattacharya's work is followed by a number of papers, which hypothesise that dividends are used by managers to transmit information to the capital market. The signalling paradigm for dividends is used, inter alia, in Heinkel (1978), Miller and Rock (1985), John and Williams (1985), Ambarish, John and Williams (1987) and Williams (1988). Typically in signalling models there is a dissipate cost either in the form of higher taxation of dividends vis-à-vis capital gains as in Bhattacharya (1979), or in the form of cost of raising external capital, as in John and Williams (1985), Ambarish, John and Williams (1987) and Williams (1988); or in the form of reduced investments, as in Heinkel (1978), Miller and Rock (1985). Kumar (1988), signalling paper shows that dividends can support a semi-separating equilibrium.

John and Williams (1985) explain why it might be optimal for a firm to pay cash dividends and raise new equity financing or repurchase stock in the same planning period. In their model, dividends are paid to reduce the under-pricing of the shares issued to raise new outside financing. Miller and Rock (1985) demonstrate, from a theoretical point of view, that there exists a signalling equilibrium under asymmetric information and examine dividends net of external financing based on the earnings, dividend and financing announcements, and the impact of the firm's policies on an optimal investment level. They find that earnings and dividend announcements convey the same information, while the financing and dividend announcements effects are of opposite sign. Ambarish, John and Williams (1987) construct an efficient signalling equilibrium with dividends and investments identifying its properties in an attempt to provide some explanation as to why dividends persist despite dissipative costs.

The signalling hypothesis is based on the "*Dividend Smoothing Model*" which is in turn based on the work of Lintner (1956) who suggests a "*Partial Adjustment Model*" in an attempt to explain corporate dividend behaviour. Managers focus more on dividend changes than on absolute levels, and they smooth dividends changes to move gradually towards a long-run desired target dividend level, in accordance with sustainable earnings. Smoothing models suggest that dividends are set conditional on future earnings expectations that are formed based on the information available (at time $t-1$), before the dividend decision is made (at time t). Dividend smoothing is conditional on the managers' earnings expectations, that is, if earnings conditions remain unchanged, the managers' past expectations is fulfilled and dividends are smoothed according to the managers' original plans. Therefore, current dividends reflect the expectations on future earnings. Fama and Babiak (1968) extend Lintner's model and suppressing the constant term and adding a term for the lagged level of earnings. They conclude that managers only increase dividends after they are sure that they will be able to maintain them permanently at a new level.

Chen and Wu (1999) examine the predictive relations between corporate dividends, earnings and prices and the implication of these relations for dividend signalling and smoothing. They find dynamic relations between dividends, earnings and prices. They also find that dividend changes are driven by both signalling and smoothing motives and that information about unexpected changes in future earnings can be provided by dividend changes. Garrett and Priestley (2000) provide evidence of dividend smoothing and dividends conveying information regarding unexpected positive changes in current permanent earnings.

²⁷ Kaplan and Roll (1972, 1973) argue that profits can be "manipulated" by clever accounting practices, and so may be interpreted with scepticism by investors.

Much of the literature on asymmetric information and dividends examine the effect of dividend changes, i.e. increases/initiations and/or decreases/omissions, on share prices. Pettit (1972) finds that announcements of dividend increases (decreases) are followed by significant share price increases (drops). Aharony and Swary (1980) examine the dividend and earnings announcements and stockholders returns and find strong evidence to support the hypothesis that changes in quarterly cash dividends provide useful information beyond that provided by the corresponding quarterly earnings numbers. They also observe that on average, the stock market adjusts in an efficient manner to new quarterly dividend information. However, Penman (1983) finds that there is not much information conveyed by dividend changes themselves, after adjusting for management's future earnings forecasts. Healy and Palepu (1988) examine dividend initiations and omissions and find evidence consistent with Petit (1972). Christie (1994) find that despite the fact that dividend omissions trigger a substantial decline in share value, those losses are much smaller in magnitude than cases where reduction of dividends was less than 100 percent. Other studies that examine the information effect on dividends include Watts (1973), Brickley (1983), Kalay and Lowenstein (1985, 1986), Kumar (1988), Lang and Litzenberger (1989), Bajaj and Vijh (1990, 1995), Kao and Wu (1994), Lee (1995) amongst others.

Watts (1973) tests the hypothesis whether dividends could convey substantial information in addition to the information conveyed by earnings. He develops the "*Unexpected Change in Dividends Hypothesis*" according to which, the additional information must be reflected in the difference between actual current dividends and the conditional expectation of current dividends (conditional on current earnings). He concludes that in general, the information content of dividends can only be trivial. DeAngelo, DeAngelo and Skinner (1992, 1996) provide arguments against the use of dividends as a signal of the firm quality, as little evidence is found to support the hypothesis that dividend decisions help to identify firms with superior future earnings. Results in contrast with the predictions of the signalling hypothesis are also provided by Benartzi, Michaely and Thaler (1997), Jensen and Johnson (1995) amongst others.

1.3.3 AGENCY MODELS AND DIVIDEND POLICY

Relaxing the Miller and Modigliani assumption of complete contracts, different forces that operate within firms may cause the interests of different groups in the firm to conflict. Literature has identified three groups within the firm that may be affected by the dividend policy, namely, the shareholders, the managers and the bondholders. The agency conflict literature can be divided into two major categories. Firstly, studies that examine the relationship between shareholders and managers, and secondly, studies concentrating on the conflict between shareholders and debtholders. In this study I mainly concentrate on the shareholders-managers conflict while the

study of the shareholders-bondholders conflict in European countries is a theme of further investigation.

The essence of the agency problem is the separation of ownership and control.²⁸ Jensen and Meckling (1976) define an agency relationship as a contract under which one or more persons (the principals/shareholders) engage another person (the agent/managers) to perform some service on their behalf, which involves delegating some decision-making authority to the agent. If both parties to the relationship are to maximise utility, there is good reason to believe that the manager will not always act in the best interests of the shareholders. The shareholders can limit divergences from his interest by establishing appropriate incentives for the management and by incurring monitoring costs designed to limit their atypical activities.

One of the best-known studies to find an empirical relationship between agency costs and dividend policy is Rozeff (1982). He examines a number of unregulated firms in 64 different industries and finds that if a firm has a high percentage of insider share ownership, it will pay a small dividend and in the opposite case where a firm has greater number of shareholders, a high dividend policy would be adopted in order to reduce agency costs. An optimal dividend policy may exist even when tax considerations are ignored. Moreover, he argues that increased dividend payments would reduce the volume of funds over which management has discretionary control, therefore the agency costs would be reduced, but the transaction costs of external financing increase. Therefore, there is an optimal dividend payout, which minimises the sum of these opposing costs. Rozeff 's conclusions (1982) were later supported by Jahera et al (1986), Dempsey and Laber (1992), Schooley and Barney (1994), Hasen, Kumar and Shome (1994), Rao and White (1994), Holder et al (1998), to name a few.

Grossman and Hart (1982), and Easterbrook (1984) address the management-shareholder conflict and suggest that shareholders can minimise the cash that managers control, and this will prevent managers from investing in negative net present value projects. One way of minimising the managers' access to free cash flows is through increasing dividend policy.²⁹ In effect the dividend payout increase would cause an increase in the firm value by reducing potential over-investment. Moreover, dividends may keep firms in the capital market, where management monitoring is available at lower cost and may be useful in adjusting the level of risk taken by managers and different classes of investors (Easterbrook, 1982).

²⁸ See Jensen and Meckling (1976), Fama and Jensen (1983), Coase (1937) and Shleifer and Vishny (1997) for a discussion.

The “*Free Cash Flow Hypothesis*” suggests that there are some interrelationships between a firm’s investment and dividend decisions. The greater the amount of new investment undertaken by the firm, the smaller the cash dividend can be paid out, or the more new equity must be issued. The important point is that firms that have more growth options are expected to pay lower cash dividends. The starting point of Jensen’s (1986) free cash flow analysis is that managers with large balances of free cash flow may use this money for purposes that do not serve the best interests of the shareholders. Therefore, Jensen argues that shareholders’ best interests might be served if cash balances not needed for investment are minimised by dividends, which extract surplus cash from management control. Alternatively, a way of reducing management control over free cash flow is to increase the firm’s leverage, which would result in regular interest payments.

Lang and Litzenberger (1989) attempt to distinguish between the predictions of the free cash flow/overinvestment hypothesis as opposed to the cash flow signalling hypothesis by investigating the share price behaviour around dividend change announcements. They use the Tobin’s Q ³⁰ as a proxy of investment opportunity and distinguish between overinvestment ($Q < 1$) firms and value maximising firms ($Q > 1$). They show that $Q < 1$ firms had greater price reactions, on average, to dividend changes than $Q > 1$ firms which provides direct support of the free cash flow hypothesis over the cash flow signalling hypothesis.³¹ Further tests of the revisions of the analysts’ earnings forecasts provide further support of the Jensen’s (1986) free cash flow hypothesis. Yoon and Starks (1993) use the same methodology to examine $Q > 1$ and $Q < 1$ firms. Overall, they note that although results indicate that the free cash flow hypothesis does not explain the information effects of dividend change announcements,³² the free cash flow hypothesis cannot be completely ruled out as it explains the observed cross-sectional differences in dividend policy. The fact that low Q firms have higher dividend yield and larger dividend change than high Q firms is consistent with the implications of the free cash flow hypothesis. Moreover, Barclay, Smith and Watts (1995) find evidence to support that dividend policy and growth have an inverse relationship and that large firms have significantly higher dividend yields. Further they reject the taxation and the free cash flow hypotheses in favour of the signalling hypothesis. Lie (2002) investigates the relationship between excess funds and firm’s payout policies and finds evidence that dividend-increasing (or repurchase) firms have cash in excess of

²⁹ These theories suggest significant departure from the original MM assumption that dividend policy and investment policy are inter-related.

³⁰ Tobin’s Q is the ratio of the market value of the firm to its replacement cost of assets

³¹ Lang and Litzenberger (1989) note that under the cash flow signaling hypothesis, for firms with $Q > 1$ the predicted impacts on returns of announcements of dividend changes is larger in absolute value for dividend decreases than for dividend increases. However, the overinvestment hypothesis predicts a symmetrical impact. For firms with $Q < 1$, the two hypotheses predict a significant impact on return in both dividend increase and decrease cases.

³² Their results provide more evidence to support the free cash flow signaling hypothesis. Also see (Denis, Denis and Sarin, 1994)

peer firms in the industry. He also finds that the market reaction to the announcement of special dividends (and repurchases) is positively related to the amount of excess cash the firm has, and negatively related to the firm's investment opportunity measured by Tobin's Q.

1.4 THE AIM AND MOTIVATION OF THE STUDY

The long existing dividend puzzle as well as the importance of dividend policy in the area of finance constitute the primary motivation of my study. Almost half a century after the Miller and Modigliani (1961) dividend irrelevancy theorem and a considerable number of years after Black's (1976) statement, the literature has not proved to be successful in providing strong and widely accepted theoretical and empirical evidence to the controversies around the dividend policy of the firm. However, despite the fact that the dividend policy discussion is an enigma with no obvious optimal strategy, literature has identified some broad recommendations to guide both financial managers and investors. Three major theories have been developed namely the Taxation Theory, Signalling Theory and Agency Conflict Theory. As shown above³³ the empirical evidence is mixed and contradictive therefore, the need for further research constitutes a great challenge for this study.

Secondly, a great motivation is the fact that the majority of studies in the literature mainly concentrate on one market, namely the US, and to a lesser extent the UK. A number of other studies examined the dividend policy in other single countries, for example, Japan,³⁴ Australia³⁵ and Canada;³⁶ but dividend policy has not been examined extensively in European countries.³⁷ An important motivation for this study is the question of whether the dividend policy theories developed in the US can be applied to European countries.

Studies that looked at cross-country analysis of dividend policy are very limited.³⁸ Given that dividends are likely to be affected by differences across countries in financial, structural, institutional, accounting, legal and political environments, I carry out a European cross-country comparative study to test whether these differences (and/or similarities) can provide some insight into the long existing dividend controversy.

³³ Most of these results are summarised in Appendix 2.

³⁴ See for example Prowse (1992), Bergloff and Perotti (1994), Kato and Loewenstein (1995).

³⁵ See for example Graham (1989), Justin (1997), Brown, Clarke, How and Kadir (2000).

³⁶ See for example Booth and Johnston (1984), Morgan and Jacques (1978).

³⁷ See for example, Michaely and Murgia (1995) for Italy, Lasfer (1995, 1996) for the UK, Romon (2000) for France, Gugler and Yurtoglu (2001), Amihud and Murgia (1997) for Germany.

³⁸ The exemption is, Aivazian, Booth and Cleary (2001) who compared the dividend policy of developed versus emerging markets.

It is difficult to generalise regarding the dividend policy of the firm. Efforts to develop a dividend policy must reflect consideration of a variety of issues. The future capital requirements of the corporation, the expected stream of earnings and cash flows and variability of these flows, shareholder expectations and attitudes, changes in corporate tax policy, the future cost and availability of capital, the strategy of corporation with respect to investment and new product development, the cash requirements and tax position of both the corporations and shareholders all play a role in determining a dividend policy. Some of these factors tend to differ between countries while other factors appear to be similar. This constitutes an ideal opportunity to test the effects of these factors on the dividend policy of the firm. Moreover, a consideration of dividend policy in different countries across time, that is, comparisons between different periods of time where factors observed to affect the dividend policy have changed (for example, changes in the dividend taxation systems) would be able to provide some concluding results to the controversy.

In addition it should be noted that the results may not only provide a comparative basis against which prior empirical studies carried out in the US can be evaluated, but also help stimulate further tests of the dividend policy in European markets. Because various imperfections affect firms differently, dividend policy may vary substantially from one firm to another, from one market to another, from one country to another. Although researchers focus on each market imperfection in isolation, complex interactions may exist among these frictions. If the imperfections are insignificant or offsetting, the Miller and Modigliani (1961) dividend irrelevance proposition may hold. Otherwise, these market imperfections may be relevant to the dividend setting process and to the value of the firm.

Also, it could be argued that the dividend puzzle is studied in the literature from two points of view. The first group of studies seeks those factors considered by the managers of the firm when setting the rate of dividend distribution of the companies they manage, i.e. the allocation of the shareholders' returns in terms of immediate and/or future benefits; while a second group attempts to discover the relationship that exists between the dividends distributed by a company amongst its shareholders and the price the shareholders are prepared to pay for the company's shares. It follows that a study of dividend policy is not only important for the managers who take decisions about the firm, but also to the shareholders. The study will also provide useful information to both international and domestic investors. The analysis of dividend behaviour across countries, besides being helpful to improve international portfolio management, is likely to provide an understanding of how country's regulatory, financial and economic environments affect the corporate dividend policy. Therefore, the study is not only useful to different types of investors and managers, but could also prove important to policymakers who determine the laws and rules of the market. To the best of my knowledge there is neither a comparative study comparing the

dividend policy in European countries and particularly in the UK, Germany, France and Italy, nor a study to provide a detailed description/analysis of the dividend taxation (and or governance) systems in these countries. The sample countries are selected to provide both an economic and political balance. Also, the UK, German, French markets, and to a lesser extent the Italian market are amongst the most important markets in Europe (and the rest of the world).

In Rajan and Zingales (1995) terminology, the cost of using an international sample is that some time has to be spent in analysing the differences between countries ranging from accounting practises to legal and institutional environments. The purpose of the following section is threefold. I describe the differences in the factors affecting the dividend policy between the UK, Germany, France and Italy. I give further insight to the reasons of selecting these particular countries and I provide a further discussion of the motivation of my study.

1.4.1 DIVIDEND TAXATION SYSTEMS IN EUROPE AND THEIR EFFECT ON DIVIDENDS

The dividend puzzle becomes even deeper when taxation is considered. The issue relates to the fact that since dividends are usually taxed more heavily than capital gains (for example in the US), companies should retain all of their earnings and provide returns to the shareholders through increases in share prices.³⁹ Under the classical system, mainly adopted in the US, corporation tax operates separately from personal tax; consequently dividends are subject to double taxation, first at the corporation level and then in the hands of shareholders at their personal income tax rate. However, in European countries, the classical system was replaced by the imputation tax system, under which shareholders are entitled to a partial/full tax credit for the corporation tax paid on the underlying profits distributed; but no tax credit is provided on capital gains. Thus, imputation systems are designed to alleviate the double taxation on dividends and reduce the shareholders' preference for retained earnings (i.e. shareholders are expected to reward high dividend payout companies). Yet there are major differences in the dividend taxation systems between the four European countries under consideration.

In the UK a partial imputation tax system was adopted in 1973, under which when a company distributes profits it must also pay Advanced Corporation Tax,⁴⁰ equivalent to the basic income tax rate, on the gross dividend. The distributing company pays ACT to the Inland Revenue fourteen days after the quarter in which the announcement of dividend is made and then ACT is deducted from the firm's corporation tax liability.⁴¹ At the shareholder level, income tax is levied

³⁹ See Allen and Michaely (1995), Poterba and Summers (1985)

⁴⁰ Henceforth, ACT.

⁴¹ The difference between the company's total corporation tax liability and ACT paid (on gross dividends) is the Mainstream Corporation Tax Liability and is usually payable nine months after the end of the accounting period. Other things equal, the corporation tax liability remains the same regardless of the company's dividend policy, but there is a

on the gross dividend received and the related tax credit.⁴² The UK imputation tax system is complex in the sense that imputation is granted at the basic rate of tax; therefore, due to the progressive marginal rate of income tax structure, shareholders who are taxed at the higher tax rate are required to pay additional tax on dividends received, whereas lower taxpayers are refunded the tax credit. Basic income tax payers have no further tax obligations as to the dividends received. Capital gains in the UK are taxed at the shareholders' personal income tax rate. Since 2 July 1997, the dividend tax credit is no longer refundable to pension funds (who are tax exempt investors) and corporations receiving dividends.

The current German dividend taxation system was adopted in 1977 and combines the features of a split rate system with those of a full imputation system. At the company level, distributed profits are subject to a lower corporation tax rate than retained profits. As from 1998 headline tax rates of 40 percent on retained profits and 30 percent on distributed profits were augmented by a 5.5 percent solidarity surcharge and additional local taxes on corporate profits ranged from around 13 percent to 20 percent. Shareholders are entitled to a tax credit on dividends received equal to the full amount of tax paid at the company level, which is credited against their tax liability. Tax-exempt shareholders are not entitled to the tax credit and are liable to no further tax liability on dividends received; while foreign investors are not entitled to any tax credit.⁴³ Capital gains for corporations in Germany are taxed as ordinary income; in contrast, individuals are not liable to capital gains tax if the holding period exceeds six months (twelve as of 1999).⁴⁴

In France a full imputation tax system was introduced in 1993 following a partial imputation system since 1966. The French system remains very different from those of other European countries, as the top marginal income tax rate is amongst the highest in Europe, but the average rate of this tax is one of the lowest. This paradox is one example of the uniqueness of the French tax system.⁴⁵ Companies are liable to corporation tax on their annual profits at the rate⁴⁶ of $36\frac{2}{3}$ percent while net profits available for distribution are grossed up by the Avoir Fiscal (imputation tax credit rate) and then taxed at the corporate income tax rate of $36\frac{2}{3}$ percent. Dividends distributed out of profits that have not borne the full corporation tax (for example, profits not generated in France) are subject to equalisation tax, the "précompte". Shareholders are entitled to

timing difference; Lasfer (1996) documents that firms who are unable to recover their ACT (are in surplus ACT position) pay lower dividends.

⁴² Income and Corporation Taxes Act 1988 §20. Henceforth, ICTA

⁴³ However, it should be noted that in Germany dividend stripping remains possible as corporate and individual non-residents may sell their shares to German residents who are entitled to the dividend and credits attaching thereto. In contrast, in the UK dividend stripping is subject to institutional regulation introduced by the 1970 Finance Act and could incur tax penalties.

⁴⁴ Short-term capital gains are taxed at the individuals' income tax rate.

⁴⁵ See Bond and Chennells (2000), Ault (1997)

⁴⁶ See taxation rates table in Appendix 3

the *avoir fiscal*⁴⁷ (the dividend tax credit fraction of corporation tax already paid by the company). The *avoir fiscal* is added to the shareholders' taxable income and its amount is deducted from the tax chargeable to the shareholder in order to avoid economic double taxation borne by distributed corporate profit. Capital gains from the sales of shares (or bonds) are taxed at a rate of 16 percent plus a 3.9 percent social contribution tax.⁴⁸

As Germany and France, Italy operates under a full imputation system adopted in 1977. Italian companies are subject to IRPEG,⁴⁹ the corporate income tax; and ILOR,⁵⁰ a so-so called local income tax, which in effect is best thought as an additional levy on corporate profits. To foster company capitalisation, Dual Income Tax⁵¹ has been introduced in 1997, which carries a reduction for part of corporate gains and applies in the event of any increase in net assets in the form of capital conferment by business partners or out of undistributed dividend reserves. Since 1998 companies must form two separate baskets "A" and "B" when preparing their income tax return and calculate the tax credit of the dividends received. Tax credit basket A consists of the amount of income tax actually paid by the company that distributes dividends⁵² while basket B is the "figurative tax" corresponding to the receipt of tax-free profits distributed as dividends. Shareholders are taxed on the grossed-up dividend received and they are entitled to a full dividend tax credit including a credit of 10 percent withholding tax on the dividend payment. Moreover, it should be noted that in the Italian market companies issue two different types of equity firstly, the Common Stocks and Preferred stocks, which are registered stocks and the shareholders have to be listed in the company's book also provided to the tax authorities and; secondly, convertible and non-convertible savings which are bearer stocks and shareholders can maintain their anonymity. These shares do not provide any voting rights but provide a privilege for yearly dividends of no less than 5 percent of par value or the common stock dividend plus 2 percent of par value whichever is the greater⁵³. Capital gains accrued from substantial holdings are taxed at 27 percent, while capital gains on all other equity holdings are taxed at 12.5 percent.

Appendix 3 provides the corporation, imputation, income and capital gains taxation rates in the UK, Germany, France and Italy for the period 1987 to 2002; while Appendix 4 illustrates the four taxation system mechanisms both at the corporation level and shareholder level in the case where

⁴⁷ Until 1993 the *Avoir Fiscal* was only half of the French corporate tax paid by the distributed company. Since 1993 France is operating a full imputation tax system where the *Avoir Fiscal* is exactly equal to corporation tax.

⁴⁸ As of January 1, 1999 capital gains are generally taxable as ordinary income.

⁴⁹ *Imposta sul reddito delle persone giuridiche*

⁵⁰ *Imposta locale sui redditi*. In 1997 IRPEG was equal to 37% and ILOR rate was 16.2 percent. In 1977 ILOR was made deductible from IRPEG and in 1991 *the deductibility rate* was reduced to 75% while in 1993 was totally abolished.

⁵¹ Henceforth, DIT

⁵² The rationale of this provision is to grant full imputation tax credit to the Italian resident shareholder but only to the extent that corporation tax has been actually paid by the distributing company.

⁵³ See Michaely and Murgia (1995)

a company generates 100 units of profits. It is illustrated that in each of the four European countries under consideration, the dividend taxation suffered both at the corporation and the shareholders' level differs as a result of the imputation system differences. Therefore, it would be reasonable to argue that higher/lower taxation suffered when profits are distributed would result to lower/higher changes in the value of the distributing company depending on the preferences of the shareholders.

My analysis of the tax impact of dividends is based on the tax discrimination variable (King, 1977), which is defined as the opportunity cost of retained earnings in terms of post-tax earnings foregone, that is, the additional disposable income a shareholder would receive if one unit of retained earnings were distributed. The tax discrimination variable is generally expressed as $\{(1-m)/[(1-s)(1-z)]\}$, where m is the marginal income tax rate, s is the imputation tax rate and z is the capital gains tax rate. King (1977) argues that if cash in the hands of the company and cash in the hands of the shareholder can be interchanged without attracting an additional tax liability (or credit), then there is no discrimination and the value of tax discrimination variable equal to unity. If the tax discrimination variable is less than unity, dividends are taxed more heavily than capital gains, whereas capital gains (retentions) tax burden is higher when the tax discrimination variable exceeds unity. Additionally, Lasfer (1995) shows that the overall tax burden on dividends and capital gains is a function of corporation tax, the dividend payout ratio and the differential taxation of dividends and capital gains. Therefore, it would be reasonable to argue that in countries where the overall tax burden on dividends is higher (lower) than the overall tax burden on capital gains shareholders would reward lower (higher) dividend payout policies. The European taxation systems briefly discussed above (and considered in greater detail in Chapter 2) constitute a great motivation for further research on the Taxation Effect Hypothesis. The purpose is to test whether existing differences between the four systems under consideration would result in higher/lower tax differential between dividends and capital gains which would affect the shareholder preferences and consequently differences in the value of the distributing firm.

HYPOTHESIS: In countries where dividends are taxed more heavily than capital gains, companies pay lower dividends and thus, ex-day returns are expected to be higher.

1.4.2 THE EFFECT OF EUROPEAN CORPORATE GOVERNANCE SYSTEMS ON DIVIDEND POLICIES

Corporate Governance has been defined⁵⁴ as the system in which business corporations are directed and controlled by shareholders and other stakeholders. Accordingly, corporate governance specifies the distribution of rights and responsibilities among different participants in the corporation, such as the board of directors, managers, shareholders and stakeholders and spells out the rules and procedures for making decisions on corporate affairs. Zingales (1997) provide a broader definition of corporate governance mechanism. He states that this mechanism may include allocation of ownership, capital structure, managerial incentive schemes, takeovers, board of directors, pressure from institutional investors, product market competition, labour market competition and organisational structure. The corporate governance system also incorporates the financial system since the latter has a role to play in conditioning the behaviour of corporate sector. The financial system is the structure of financial contracts that governs the distribution of claims on all cash flows generated from productive assets in the economy. Therefore, it provides the structure through which corporate objectives are set, and it also provides the means of attaining those objectives and monitoring performance⁵⁵.

Studies argue that international differences in dividend policies are likely to be caused by differences in corporate governance structures across nations. Dewenter and Warther (1998) find that dividend announcements between US and Japanese firms are associated with distinct levels of information asymmetry and agency conflicts, which were in turn related to the types of corporate governance structures in each country. Once we move away from a model of perfect capital markets in which financial decisions and real investment decisions are separable, we raise the possibility that different financial systems may have different effects on company's dividends. Heterogeneity across European countries has been well documented,⁵⁶ for example in patterns of investment finance, corporate ownership patterns, corporate governance rules,⁵⁷ the market for corporate control and the relative importance of the financial markets and institutions.⁵⁸ Monitoring of managers and the monitoring of entities vary as a function of the ownership structure of the equity, the structure of corporations, the role of the banking system in the economy, business circumstances, the efficient functioning of capital markets and the level of product market and capital market competition, both domestic and international.

⁵⁴ OECD (1999). Definition also consistent with the Cadbury Committee (1992) definition.

⁵⁵ See Halpern (1999) for a full discussion.

⁵⁶ See Stoneman (2001), Schmidt (1999), Danthine, Giavazzi and Thadden (2000)

⁵⁷ See Gregory (2001) for international comparison of corporate governance

⁵⁸ See Mayer (1990, 1994)

The differences between the Anglo-American “market-oriented” and Japanese, Continental Europe “bank-oriented” systems have received particular attention. In this study I suggest that the arms-length relation between firms and suppliers of finance that tends to characterise the market-oriented systems may be less effective at dealing with problems of asymmetric information or principal-agent conflicts. Consequently dividends would play a more vital role in market-oriented countries than in bank-oriented countries. I test this prediction by investigating and comparing the share price reaction to dividend change announcements; higher excess returns are expected in market-oriented countries than in bank-oriented countries. Perhaps, surprisingly, there has been little investigation of the role of dividend policy in the European corporate governance. Moreover, the question whether differences in European dividend policy are related to differences in financial systems has received little empirical attention.

According to Zysman (1983) the financial systems vary in three ways: the importance of different financial markets, the way prices are set in these markets, and the role the government plays in the financial system. He categorises the US and the UK as capital-market based systems where the level of debt to equity ratio⁵⁹ is low, stocks and bonds are the main source of long-term financing, owners exercise influence through selling of their shares and prices are established in competitive markets. In contrast Continental Europe and Japan are categorised as credit-based systems where the debt to equity ratio is high (i.e. debt is the main source of finance), owners exercise influence through voting rights and prices are established in non-competitive markets. Berglof (1988, 1990) distinguishes between market-oriented and bank-oriented systems. He shows that in market-oriented (bank-oriented) systems, the size of the financial markets is high (low), the degree of internal finance is low (high), the ratio of bank credits to total liabilities is low (high), the importance of bond financing is low (high), the degree of concentration is low (high), commercial banking is insignificant (significant) and institutional shareholding is less common (wide spread).

Franks and Mayer (1994, 1997) distinguish between the outsider system in the US and the UK and the insider system in Continental Europe and Japan. The outsider systems are characterised by dispersed equity ownership with large institutional holdings, the recognised primacy of shareholders interest, a strong emphasis on the protection of minority investors and relative strong requirements of disclosure. These systems are market-oriented systems, inasmuch as they rely heavily on the capital market as a means of influencing behaviour. They are also characterised by a legal regulatory approach that favours countries with outsider systems, as the legal framework supports clearly the right of shareholders to control the company and makes the board and the

⁵⁹ Henceforth, D/E ratio

management explicitly accountable to shareholders.⁶⁰ Secondly, in the insider systems few companies have publicly traded shares, ownership and control are largely and closely held by identifiable and cohesive groups of insiders who have long-term stable relationships with the company. Insider groups are relatively small, their members are known to each other and they have some connection to the company other than their financial investment, such as banks or suppliers. Groups of insiders typically include some combination of family interests, allied industrial concerns, banks and holding companies. Insider systems are usually bank-oriented. In these systems banks tend to have more complex and longer-term relationships with corporate clients. Capital markets are in general less developed than outsider systems. In contrast to the market-based systems, which insist upon public disclosure of information, the insider system is more willing to accept the way a bank interacts with borrowers.⁶¹ Reflecting the reliance on bank finance and the lack of sophisticated institutional investors in the insider systems, the range of financial assets available to the public has been comparatively narrow and banks have dominated financial intermediation.⁶²

The discussion indicates that views on the financial system overlap each other to a large extent but they all discuss the differences between the two aforementioned types: market-oriented and bank-oriented systems. It is well documented that the UK system is typified as a market-oriented system in contrast to the German system,⁶³ which is a bank-oriented system. France and Italy, also follow the characteristics of bank-oriented systems. This is illustrated in **Table 1.1** which considers the corporate governance characteristics in the countries under consideration and distinguishes between the two systems.

⁶⁰ See LaPorta et al (1997). They also argue that the legal environment might be a more meaningful distinction between different corporate governance systems around the world.

⁶¹ See Schmidt (1998) and Charkham (1994)

⁶² See Bhattacharya and Thakor (1993), Diamond (1984)

⁶³ See Franks and Mayer (1995)

TABLE 1.1. THE CHARACTERISTICS OF MARKET-ORIENTED SYSTEMS VERSUS BANK-ORIENTED SYSTEMS IN EUROPEAN COUNTRIES.

	MARKET-ORIENTED SYSTEMS	BANK-ORIENTED SYSTEMS			
PANEL A: GENERAL SYSTEM CHARACTERISTICS					
	UK	GERMANY	FRANCE	ITALY	
Market Capitalisation/GDP ¹	2.25	0.67	1.17	0.68	
Number of Listed Companies ²	2436	751	1131	291	
Accounting Standards ³	0.87	0.69	0.77	0.69	
Ownership Concentration ⁴	0.15	0.50	0.24	0.60	
Equity Owned by Banks ⁵	0.02	0.14	0.06	0.06	
GDP Growth ⁶	2.27	2.60	2.54	2.82	
<p>Source: Carlin and Mayer (1998), Rajan and Zingales (2001)</p> <p>¹Rajan and Zingales (2001); 1999 Figures; Market Capitalisation to GDP is the aggregate market value of equity of domestic companies to GDP. According to Rajan and Zingales (2001), market capitalisation/GDP is a good proxy for the fraction of fixed capital finance via public traded equity.</p> <p>² All listed domestic companies. Source: European Stock Exchange Statistics, 2002; Federation of European Stock Exchanges, Table 5, April 2002. For France the Euronext number of listed companies is reported.</p> <p>³Is the number of accounting standards on a scale from 0 to 90 reported in Rajan and Zingales (1998) from a survey conducted by the Centre for International Financial Analysis and Research normalised to lie in the range 0 to 1.</p> <p>⁴ LaPorta and Silanes (1998), is the average percentage of common shares owned by the three largest shareholders in the ten largest non-financial, privately owned domestic firms in a given country. A firm is considered privately owned if the State is not a know shareholder in it.</p> <p>⁵The proportion of total equity capitalisation in different countries held by banks. Carlin and Mayer (1998) note that there is no single source of data is available for this series.</p> <p>⁶La Porta and Silanes (1998), is the average annual percent growth per capita gross domestic product for the period 1970-1993</p>					
PANEL B: SOURCES OF FUNDS					
	UK	GERMANY	FRANCE	ITALY	
Group	4.44	9.26	2.21	9.59	
Privates	1.96	6.65	2.37	3.50	
Public Sector	0.28	5.61	0.76	2.50	
Banks	21.85	52.24	31.15	71.18	
Pension Funds	34.64	0	2.33	0	
Insurance Companies	15.50	12.11	10.59	1.50	
Others	4.37	14.09	12.18	0	
Self Financing	16.93	0	38.36	11.71	
TOTAL	100	100	100	100	
Source: European Venture Capital Association (EVCA) Yearbook 2000; All listed companies included.					

PANEL C: OWNERSHIP STRUCTURE

	UK	GERMANY	FRANCE	ITALY
Financial Companies (Of Which Banks)	57.8 % (1%)	37.2% (14%)	23 % (6%)	22.2 % (N/A)
Non-Financial Companies	1.5 %	30.9 %	16.4 %	21.6 %
Private Investors	24.8 %	16.8 %	32.1 %	25.8 %
Public Sector	0.0 %	2.9%	6.4 %	23.8 %
Foreign	15.9 %	12.2%	22.1 %	6.6 %

Source: Oslo Stock Exchange (1998).

The study was conducted on behalf of the Federation of European Stock Exchanges (FESE). Financial Companies represent the domestic institutional investor segment; the category covers holdings by listed companies, limited companies and private organisations and trusts. Non-Financial Companies include holdings by listed companies, limited companies and private organisations and trusts. Private investors mainly represent households' ownership, while public sector category includes both central and local government holdings.

PANEL D: OWNERSHIP CONCENTRATION

		UK	GERMANY	FRANCE	ITALY
Total Ownership Concentration	Mean	40.8	More than 65	52	68.4
	Median	39	More than 65	30	62.3
Largest Shareholding	Mean	15.2	N/A	29.4	51.9
	Median	10.9	52.1	20	54.5
Number of Companies in Studies		250 Listed ¹	374 Listed ²	40 CAC ³	216 Listed (All)
Disclosure Threshold		3%	5%	5%	2%

Source: Crama, Leruth, Lenneboog, Urbain (1998). All studies are included in Barca and Becht (2000): Georgen et al (2000) for the UK, Becht and Boehmer (2000) for Germany, Bloch and Kemp (2000) for France and Bianchi, Bianco and Enriques (2000) for Italy.

¹ Random Sample of all Non-Financial Firms listed on the London Stock Exchange

² All Listed From the Official Market

³ For All 680 French Listed Firms, the Largest Owner controls an average of 56% if voting rights. Companies, which are part of an index, have to assure sufficient liquidity.

Another important imperfection when determining dividend policy is the legal environment under which firms operate, therefore it is important to consider the differences of this factor between the countries when a cross-country analysis is to be done. La Porta, Silanes, Shleifer and Vishny (1998) do not directly provide an explanation but they offer a possible reason for the stylised fact that dividend policies vary considerably across the world, as well as an interesting insight into the role of institutional mechanisms; the legal system, the importance of which may lead managers to feel compelled to pay dividends to shareholders. They distinguish between the common law (including the UK) and the civil law tradition⁶⁴ (including Germany, France and Italy) and examine the laws governing investor protection, the quality of enforcement of these laws and ownership concentration in 49 countries around the world. They observe that laws differ markedly around the world; in common law countries investors are better protected than in civil law countries.

Recently, La Porta, Silanes, Shleifer and Vishny (2000) compare the corporate dividend policy across 33 countries. They distinguish between two models. Firstly, under the outcome model dividends are paid because minority shareholders pressure corporate insiders to disgorge cash, therefore stronger minority shareholder rights would be associated with higher dividend payouts. Shareholders who feel protected would accept low dividend payouts, and high reinvestment rates, from a company with good opportunities because they know that when this company's investments pay off, they could extract dividends. Secondly, under the substitute model insiders interested in issuing equity in the future pay dividends to establish a reputation for decent treatment of minority shareholders.⁶⁵ They provide evidence to support that dividend policy is dependent on the effective legal protection of shareholders, which enables minority shareholders to extract dividend payments from corporate insiders (supporting the outcome model). Empirical evidence showed that dividend policies vary across legal regimes in ways consistent with the outcome model "version" of the agency theory of dividends.

La Porta, Silanes, Shleifer and Vishny (1998) provide evidence to support that countries develop substitute mechanisms for poor investor protection, for example, mandatory dividends (e.g. in Greece) or legal reserve requirements; more importantly, they find that good accounting standards and shareholder protection measures are associated with lower concentration of ownership, indicating that concentration is indeed a response to poor investor protection. Indeed **Table 1.1 Panel D** illustrates that in the UK where shareholder rights are well protected by the UK common law system, ownership concentration is low in contrast to Germany, France and Italy. Ownership concentration is important because monitoring is only cost effective if a single party becomes large enough to internalise the costs of corporate control. Such costs are borne by the monitoring shareholder individually, but the financial benefits resulting from corporate governance actions are only reaped in proportion to the cash flow rights.⁶⁶ Concentrated ownership mitigates free-riders problem⁶⁷ of corporate control and as a consequence, owners are more active in exercising control over managers.

Gadhoun (2000) argues that ownership concentration creates a stronger link between managers and shareholders, decreases information asymmetry and the need to signal the firm's prospects through frequent changes in dividends. Generally, literature suggests that the less concentrated the structure of a company, the higher the dividends paid. Walker and Petty (1978) and Dwyer and

⁶⁴ The civil law tradition has three main families, the French family (including France and Italy), the German family (including Germany) and the Scandinavian family. This further distinction of the civil law is beyond the scope of my study.

⁶⁵ LaPorta, Silanes, Shleifer and Vishny argue that a reputation for good treatment of shareholders is worth more in countries with weak legal protection of minority shareholders, who have little else to rely on; therefore, all else equal, in these countries dividend payouts should be higher than in countries with good legal protection.

⁶⁶ Grossman and Hart (1988)

Lynn (1989) examine a sample of US firms and provide evidence that closely or privately held companies rarely pay dividends in contrast with public companies which pay a substantial fraction of their earnings as dividends each year. Rozeff (1982) also finds a significant negative relationship between dividend policy and the firm's past and expected future growth rate of sales, the beta coefficient and the amount of stock held by insiders, while a positive relationship between dividends and the number of common shareholders is observed. In addition, Megginson, Nash and Van-Randenbourgh (1994) find a significant increase in dividend payouts by newly privatised firms in 18 different countries. Other studies, investigate the dividend policy of the firms characterised by high foreign ownership. Dahlquist and Robertsson (2001) provide evidence that foreign investors show preference for large firms paying low dividends and demonstrate that most of the features associated with foreign ownership are driven by the fact that foreign investors are mutual funds or other institutional investors; hence, they identify an institutional investor bias rather than a foreign investor bias on the dividend policy of the firm.

Megginson (1996) observes that some of the international differences in dividend policies are, at least partially, a reflection of the degree of reliance of companies on capital markets financing. He observes that countries, which rely more on capital markets financing generally, tend to have higher payouts than countries that rely more on intermediate financing. As compared to the other countries, a higher proportion of UK firms have their shares listed and actively traded on the stock market. In the UK a higher proportion of shares is owned by financial institutions, in particular pension funds, insurance companies and unit/investment trusts, and a smaller proportion of shares is owned directly by individuals, or controlled by family blocks. Related to this, ownership tends to be much less concentrated in the UK, since financial institutions themselves tend to own highly diversified portfolios of shares in many different companies, rather than controlling stakes in particular firms.⁶⁸ In the other three countries, financial companies are less important investors as compared to the UK but still they hold an important share of the market. In Germany, financial companies are the largest class of investors holding 37.2 percent of the market, while in France and Italy financial companies hold 23 percent and 22.2 percent respectively and they are the second largest shareholders on the market. Differences also exist between the countries in the involvement of banks. **Table 1.1 Panel A** shows that banks provide a higher portion of equity capital in Germany (13.6 percent), in France (6.4 percent) and in Italy (5.7 percent) than in the UK where banks only hold 1.7 percent of the market equity. Further, differences between the four countries exist when considering the importance of bank debt as a source of funds. **Table 1.1 Panel B** illustrates that companies bank debt in the UK only equals to 21.85 percent in contrast

⁶⁷ See Demsetz (1983)

⁶⁸ Detailed discussion in Edwards and Fisher (1994) and Franks and Mayer (1995)

with their counterparts in Germany (52.24 percent), France (31.15 percent) and Italy (71.18 percent).

Moreover, it should be noted that in the UK banks limit their involvement in the companies to the extent which they provide finance and typically they neither subscribe for shares in their customers nor seek to exercise a control function via board representation.⁶⁹ Berglöf (1997) notes that the Bank of England strongly discourages controlling stakes in manufacturing companies. In contrast, German banks play a prominent role in financing and controlling of the companies, as banks have traditionally viewed their relationship with clients as a long-term one, and they are often willing to step in to help a company to avoid bankruptcy. Moreover, the control of equity voting rights in large companies by German Banks and the bank's associated representation on the supervisory boards of such companies have been argued to permit them to constrain the managements of large German companies to act more closely in accordance with shareholders' wishes and hence reduce the agency costs involved in the owner-manager relationship of large firms.⁷⁰ However, the major source of bank's voting power at shareholders' meetings comes not from their own holdings of equity, but from the proxy votes they exercise on behalf of those shareholders who place their shares with a bank for custody.⁷¹ LaPorta, Silanes and Shleifer (1999) characterised the France as a "strong bank" country where banks are allowed to both own majority stakes in industrial firms and invest more than 60 percent of their capital in such firms. Until 1993, however, the Bank of Italy precluded banks from acquiring significant shareholdings in non-financial firms.⁷²

Leland and Pyle (1977) develop a signalling model that emphasises asymmetric information as a primary reason to explain the existence of financial intermediaries. They argue that financial intermediaries can signal the proprietary information of many borrowers at a cost that is lower than that of each individual borrower attempting to signal alone. Diamond (1984) extends Leland and Pyle (1977) and shows that private information about borrowers can be monitored more efficiently by a financial intermediary on behalf of its depositors (as suppliers of funds) rather than by many individual depositors acting as individual lenders. Diamond (1984) provides further insight by showing that financial intermediaries possess a cost advantage in producing information and that the monitoring function provided by intermediaries is cost effective in resolving the financial contracting problems caused by asymmetric information. Rajan (1992) explores the costs and benefits of borrowing from informed versus arm's-length sources, and

⁶⁹ See Edwards and Fisher (1994), Charkham (1994), Solomon, Tylecote and Solomon (1999)

⁷⁰ See Edwards and Fisher (1994), Brook, Hendershott, Sarin (1996), Edwards and Nibler for a full discussion on the role of banks in Germany

⁷¹ Baums and Rainer (2001), also provide a discussion on voting as a management control mechanism

⁷² See Bianchi, Bianco and Enriques (1997)

offers an explanation of why firms may seek alternatives to bank monitoring and control of firm investment decisions. Other models of financial intermediaries⁷³ suggest that in a market with imperfect information, financial intermediaries have a comparative advantage in collecting private information and monitoring the activities of borrowers relative to the direct monitoring by many individual lenders. Fama (1985) distinguishes banks from other types of financial intermediaries and argues that banks are indeed a special type of financial institution. He draws a distinction between inside and outside debt and classifies bank debt as inside debt, defined as a contract in which the creditor (the bank) gets access to private information about the borrowing firm that is not available to other market participants. This confidential disclosure of information by managers allows banks to know more about the quality of the firm than any other investor. Recently, Low, Glorfeld, Heath and Rimbey (2001) establish a link between the theories of banking and dividend policy in an examination of how bank monitoring and dividend signals complement one another to resolve information asymmetries. Results indicate that, for small firms, investors interpret the dividend decision as a function of bank monitoring and the dividend signals taken together. Therefore, banks appear to have a comparative advantage in monitoring firms and close bank monitoring would reduce managers' opportunity to invest in negative net present value projects, reducing the need to restrict management's investment discretion.

Since both the ownership concentration and the involvement of banks would result in lower levels of information asymmetry and agency conflicts in bank-oriented countries than in market-oriented countries, dividends are expected to be less important as a mechanism to mitigate information asymmetries and agency conflicts. Moreover, In France and Italy the ownership structure of corporations can basically be characterised by family control, financial holding companies, cross-shareholding companies and state ownership. For example in Italy, powerful families, such as the Agnellis, have control over nearly all listed companies. According to Cobham, Cosci and Mattesini (1999) the share of firms' assets held by families in the late 1990s was 50.8 percent in Italy, against 27 percent, 16.9 percent and 13.3 percent respectively in France, Germany and the UK respectively. Jensen, Solberg and Zorn (1992) find support for the hypothesis that levels of insider ownership differ systematically across firms, with high insider ownership firms adopting lower levels of dividends. Lambert, Lanen and Larcker (1989) and Fenn and Liang (2001) conclude that management stock options are related to the composition of dividend payouts and a strong negative relationship between dividends and management options was observed.

Following this discussion it can be concluded that in market-based countries there is higher information asymmetry between managers and shareholders than in bank-based countries.

⁷³ Ramakrishnan and Thakor (1984), Boyd and Prescott (1986), Williamson (1986)

Therefore, it would be interesting to test whether this information asymmetry is reflected in the dividend policy of the firm. In other words, a great motivation exist to test whether in market-based countries the role of dividends as a mechanism to mitigate these information asymmetries is more vital than in bank-based countries. According to the signalling hypothesis of dividends it should be expected that:

HYPOTHESIS: In market-based countries, where information asymmetries are large, companies are less likely to change their dividends and the market reaction to dividend changes is stronger than in bank-based countries.

Generally, the information asymmetry models argue that managers know more than investors about the firm's prospects and that dividends reveal some information to the market.⁷⁴ This implies that dividend change announcements should be positively related to share returns because a higher (lower) dividend signals higher (lower) current and/or future expected cash flow. A number of studies report a significant positive relationship between dividends and excess returns on the dividend announcement day.⁷⁵ Secondly, literature proposes the effect of agency conflicts on dividend behaviour. Agency theories focus on the different incentives of managers and shareholders and the role of dividends as a disciplinary mechanism. By reducing the amount of free cash flow, dividends force managers to submit to the discipline of the financial markets.⁷⁶ Lang and Litzenberger (1989) document lower excess returns when higher growth opportunities exist indicating that agency conflict problem is less severe in the presence of high growth as managers are less likely to invest in negative net present value projects. As in the information asymmetry models, the agency models predict that dividend change announcements should be positively related to stock returns because a higher dividend level reduces managers' tendency to waste free cash, even in negative net present value projects. Therefore, both explanations predict that dividend changes should result in excess returns on the dividend announcement day, in the same direction as the dividend change. In this study I argue that the magnitude of dividend changes (cuts, increases, initiations and omissions) excess returns differs across Europe due to differences in the corporate governance systems. In different countries corporate governance systems provide alternative mechanisms to mitigate agency conflicts; it is difficult however to distinguish between the predictions of the information signalling and the agency conflict theories. I test the agency conflict explanation of dividends in the light of Lang and Litzenberger (1989) and I use the market to book ratio in order to distinguish between over-investing and value maximising firms in order to test whether

⁷⁴ See Bhattacharya (1979), Miller and Rock (1985), and John and Williams (1985)

⁷⁵ See Pettit (1972), Aharony and Swary (1980), Asquith and Mullins (1983), Healy and Palepu (1988)

⁷⁶ See Easterbrook (1984), Jensen (1986)

HYPOTHESIS: The relationship between the market reaction to dividend changes and firms growth opportunities is stronger in market-based countries.

1.5 ORGANISATION OF THE THESIS

The rest of my thesis is organised as follows.

CHAPTER 2: "Taxes and Dividends: Evidence from the UK, Germany, France and Italy"

The purpose of this part of my thesis is to provide a detailed analysis and comparisons of the dividend taxation systems in the UK, Germany, France and Italy for the period 1987 to 2002. Moreover, I consider the dividend taxation changes during the years of my study in order to enable inter-country comparisons under different taxation periods.

In **Section 2.1**, I provide an introduction of this part of my thesis. In **Section 2.2**, I compare the Classical and the Imputation Tax Systems. The US classical taxation system discourages companies to distribute profits in the form of dividends as they carry higher taxation as compared to capital gains (i.e. dividends are subject to double taxation firstly at the corporation level and secondly at the shareholder level as personal income). In contrast, the European imputation tax systems provide tax incentives to shareholders since the taxation suffered at the corporation level is reimbursed in the form of tax credits.

In **Section 2.3**, following Lasfer (1996) I analyse the capital gains and dividend taxation burdens under the European imputation systems in an attempt to derive the tax discrimination variable (King, 1977). Moreover, I provide an illustration of dividends and personal tax systems under the imputation and classical systems. In **Section 2.4**, I introduce the European countries tax regimes. Full descriptions of the dividend taxation systems in countries under consideration are provided through time (also accounting for taxation system changes), in an attempt to derive the tax discrimination variables under different systems. In each country I divide my sample in taxation periods and I calculate the tax discrimination variable in the different tax periods identified. The purpose of this analysis is to determine how the tax discrimination variable varies across European countries and in which countries the discrimination between dividends and capital gains is minimized, i.e. tax discrimination variable close or equal to unity. I will then test whether dividend payout policies are higher (lower) in countries where the tax discrimination variable is lower (higher). I expect payouts to be higher in countries (UK) where the majority of shareholders are either basic income individuals or tax –exempt investors (with tax discrimination variable equal to unity or lower than one) as compared to countries (German, France and Italy) where the majority of investors are higher tax payers (with tax discrimination variable higher than one).

In **Section 2.5**, I provide a detailed literature review relating to the taxation effect on the dividend policy of the firm. I particularly concentrate on the theories of the impact of taxes on dividends and firm valuation (the Traditional View, The Tax Irrelevance View, the Tax Capitalisation View and the Clientele Effect View). Also, I consider theories relating to the relationship between long-term stock returns and dividend yield and the ex-dividend day share price behaviour. The latter provides an introduction for the next Chapter.

CHAPTER 3: “The Taxation Impact on the Ex-Dividend Dates in Europe: Evidence From the United Kingdom, Germany, France and Italy”.

In this chapter I study the ex-dividend day behaviour of share prices, which has been a long-standing object of interest in the literature. The share price change on the ex-dividend day is found to be less than the value of dividends.⁷⁷ According to the taxation effect hypothesis this is due to the differential taxation of dividend and capital gains. The imputation systems in Europe differ to the extent that in the UK investors are imputed a partial tax credit where as in Germany, France and Italy the tax credit attached to dividends is equal to the full amount of tax suffered at the company level. This results in differences between the dividends and capital gains tax differential. I test the hypothesis that ex-dividend day abnormal returns are higher in countries with high tax discrimination variable (UK) compared to countries with lower tax discrimination variables (Germany, France and Italy).

In **Section 3.1**, I provide an introduction of my Chapter. In **Section 3.2**, I provide a literature review on the ex-dividend day share price behaviour. The literature can essentially be categorised in four groups. Firstly, I consider studies that support the taxation effect hypothesis on the ex-dividend day share price behaviour (e.g., Elton and Gruber, 1970, Barclay, 1987, Kaplanis, 1986, Lasfer, 1996, McDonald, 2001) and provide a detailed analysis of the Elton and Gruber (1970) ex-dividend day share price behaviour model taking into account the tax systems in the four countries in the sample. Secondly, I summarize studies that support the short-term trading effect on the ex-dividend day behaviour (e.g., Karlay, 1982, Lakonishok and Vermaelen, 1986, Eades, Hess and Kim, 1984, Koski, 1996, Boyd and Jagannathan, 1994). Thirdly, I review studies that provide an explanation around the microstructure effect on the ex-dividend day behaviour (e.g., Bali and Hite, 1998, Frank and Jahannathan, 1998). Finally, I focus on studies that look at the ex-dividend date share price behaviour before and after major tax reforms (e.g., Lasfer, 1995, Poterba and Summers, 1985, Michaely, 1991).

⁷⁷ Campbell and Beranek (1955), Elton and Gruber (1970).

Following the literature review, it seems reasonable to argue that US evidence provides mixed results on the Elton and Gruber (1970) hypothesis. Despite the long existing literature, the ex-dividend stock price behaviour puzzle remains unsolved. This together with the differences on the dividend taxation systems under consideration described in **Chapter 2** (and the differences in the tax discrimination variables between the countries) constitute the main motivation of this Chapter. The motivation is described in **Section 3.3**, where I also set the hypothesis tested.

In **Section 3.4**, I describe the data and methodology used to test my hypothesis. I employ an event study methodology (Brown and Warner, 1985) to investigate the share price behaviour around the ex-dividend days in the UK, Germany, France and Italy for the period 1987- 2002. In **Section 3.5**, I discuss the empirical results. Firstly, I provide a country-based analysis of the ex-dividend day behaviour. In all the countries under consideration results⁷⁸ show that abnormal returns are statistically different from zero only on the ex-date. Thus, results support the ex-date taxation effect hypothesis. Moreover, I investigate the share price behaviour around different event windows (for example, -20 to -2, -1 to +1 and +2 to +20 Days). However, cumulative abnormal returns around day 0 are not significant. Similarly, consistent with my hypothesis, when examining the share price behaviour around the ex-date according to the tax discrimination variable, in countries where the tax discrimination variable is higher (UK) I observe significantly higher abnormal returns than in Germany, France and Italy. Moreover, I examine the distribution of the ex-date returns before and after major tax reforms where I observe evidence consistent with the tax explanation of dividends. I also consider the ex-date returns according to the dividend yield I find a strong positive relationship between the ex-day returns and dividend yield which provide further support for the taxation effects. Further, I examine the ex-day returns in relation to the dividend yield and bid-ask spread. Finally, I regress the ex-dividend day abnormal returns against the dividend yield, the bid-ask spread and the market value variables,⁷⁹ in order to test for the tax and short-term trading effects hypotheses. In **Section 3.6**, the ex-dividend day share price behaviour study concludes.

CHAPTER 4: “The Information Content of Dividend Announcements in the United Kingdom, Germany, France and Italy: A comparative Study”

In this chapter I examine the information content of dividend announcements in the UK, Germany, France and Italy. In a framework of asymmetric information existing within companies, the theory of signals defines dividend policy as a signalling mechanism through which managers

⁷⁸ Results reported are calculated using the Market Mode (Brown and Warner, 1985). Results obtained using alternative methods, for example the Raw Return Model, the Market-Adjusted Model ($\beta=1$ and $\alpha=0$), the Mean Adjusted Returns Model, the Schools and Williams and Dimson specifications confirm the robustness of my results.

⁷⁹ The bid-ask spread and the market value variables are used as a proxy for transaction costs. See Karpoff and Walking (1990), Lasfer (1995)

reveal their incentives and private information to external shareholders. Traditionally, literature has observed that dividend announcements reveal information and signal the future prospects of the company; therefore the share price behaviour of the company should be positively related to the dividend change; that is, announcements of dividend increases (decreases) should result in positive (negative) abnormal returns.

Differences in the corporate governance characteristics as briefly described above are expected to affect the level of information asymmetry between managers and shareholders. However, it is difficult to generalise on the information asymmetry as it depends on both the corporate governance and individual firm characteristics. In **Chapter 4**, I provide evidence to show that higher information asymmetries between managers and shareholders exist in market-based countries (UK) as compared to bank-based countries (Germany, France and Italy). This evidence is based on the differences in corporate governance, institutional and financial characteristics between the countries in my sample. Consequently, I test the hypothesis that the market reaction to dividend changes in bank-based countries is expected to be lower than in market-based countries if dividends mitigate the information asymmetries between managers (insiders) and shareholders (outsiders).

In **Section 4.1**, I introduce the theme of the chapter. In **Section 4.2**, I review the literature around the signalling effect hypothesis and the share price behaviour around the dividend announcement day. The review considers the theoretical models of the dividend-signalling hypothesis (e.g., Bhattacharya, 1979, Miller and Rock, 1985, John and Williams, 1985); studies that investigate the market reaction to dividend changes (e.g., Pettit, 1972, Aharony and Swary, 1980, Healy and Palepu, 1988); studies that examine the relationship between dividends and future earnings (e.g., Watts, 1973, Gonedes, 1978, Penman, 1983); studies that argue for the firm size effects (e.g., Bhushan, 1989, Bajaj and Vijh, 1990); studies that support the existence of contagion effects (e.g., Firth, 1996, Laux, Starks and Yoon, 1998); studies that examine the dividend information signalling hypothesis and the role of banks as monitors (e.g., Low, Glorfeld, Heath and Rimbey, 2001); and finally, I consider the international studies (e.g., Dewenter and Warther, 1998 in the US and Japan, Amihud and Murgia, 1997 in Germany, Romon, 2000 in France).

In **Section 4.3**, I discuss the motivation of the study which centres on the institutional, financial and corporate governance differences between the European countries and I set the hypothesis to be tested. In **Section 4.4**, I provide a description of the data and methodology used to test my hypothesis. I use an event study methodology (Brown and Warner, 1985) in order to investigate the share price reaction to dividend change announcements. To the best of my knowledge this is the first study to simultaneously test announcements of dividend increases, decreases, no changes,

initiations and omissions in the UK, Germany, France and Italy. Moreover, I investigate the share price reaction to dividends and earnings announcement changes. The purpose is to isolate the impact of dividend change announcements on the share price from the impact of earnings announcements (e.g., Aharony and Swary, 1980, Eddy and Sheifer, 1992) and to investigate whether dividends provide information beyond of that provided by earnings announcements. It should be noted that the situation in which earnings news and dividend news appear to conflict (for example, when a company announces earnings decreases/increases and dividend increases/decreases)⁸⁰ should be of special interest.

In Section 4.5, I describe the results of the study. Results provide evidence to support my hypothesis. Indeed results show that in the UK where there is higher information asymmetry than in Germany, France and Italy, abnormal returns on the dividend change announcement day are significantly higher. Generally, results indicate that in the UK, where information asymmetry is high, managers use dividends as a mechanism to mitigate information asymmetries. Therefore, positive (negative) abnormal return behaviour following dividend increases/initiations (decreases/omissions) indicate that investors perceive dividend increases (decreases) as good (bad) signals for the prospects of the company. However, results in bank based countries indicate that in these countries where shareholders are better informed about the current performance and future prospects of the companies an increase in dividends is perceived as lack of investing opportunities while a decrease in dividends is thought to be a way of raising costless sufficient funds for investing in positive net present value opportunities. In Section 5.6, I conclude the Chapter and I make recommendations for further development of the study.

CHAPTER 5: "The Agency Conflict in Europe: A Test of the Cash Flow Hypothesis"

In the final chapter of my thesis I investigate the agency conflict explanation of dividends in the UK, Germany, France and Italy. According to the agency conflict theory (Jensen and Meckling, 1976), the interests of the managers (agents) deviate from those of the shareholders (principals). As a result, managers of the companies do not always act to the best interests of the shareholders, but instead they try to pursue their own personal benefits and goals at the expense of the shareholders. This may include managers investing beyond the optimal investment level of the company, in negative net present value projects. The free cash flow hypothesis (Jensen, 1986) proposes dividends as a mechanism to reduce agency conflicts by decreasing free cash flows in the hands of managers, enforcing them to seek financing on the market and therefore reducing the ability of the managers to overinvest. However, the level of agency conflicts in each country is affected by the ownership structure and concentration, legal and corporate governance

⁸⁰ See Woolridge and Ghosh (1985)

characteristics as briefly described above and further analysed in **Chapters 4 and 5**. Based on these differences which are expected to result in higher agency conflicts in the market-based countries (UK) I test whether the abnormal returns on the dividend announcement day are higher than in bank-based countries.

The signalling and agency conflict hypotheses both predict a positive relationship between the direction of dividend policy change and the share price reaction. Lang and Litzenberger (1989) provide tests to distinguish between the two hypotheses in respect of the level of growth opportunities faced by the firm. Their results provide evidence to support the free cash flow hypothesis over the signalling hypothesis. I follow Lang and Litzenberger (1989) in order to test between the predictions of the two hypotheses in European countries. I test whether in market-based countries overinvesting firms experience significantly larger abnormal returns on the announcement of a dividend change than in bank-based countries. Similarly, in market-based countries the market reaction to dividend changes of value maximising firms is expected to be higher than in bank-based countries.

In **Section 5.1**, I introduce the theme of this Chapter. In **Section 5.2**, I review the literature around the monitoring role of dividends and the cash flow hypothesis. In **Section 5.3**, I describe the motivation of my study, which centres on the differences in the corporate governance system characteristics between the countries in my sample; and I set the hypothesis to be tested.

In **Section 5.4**, I discuss the data and methodology used to test my hypothesis. I employ the results obtained in **Chapter 4** that is the abnormal returns around the dividend announcement day in the UK, German, French and Italian data for the period 1987 to 2002 and follow Lang and Litzenberger (1989) in order to test whether the free cash flow hypothesis also outperforms the signalling hypothesis in countries outside the US. I use the market to book value in order to distinguish between overinvesting and value maximising firms.⁸¹ The purpose is to test whether the share price reaction to dividend change announcements significantly differs according to the market-to-book value of the company and according to the direction of the dividend change announced (increase, decrease, no change, initiation, omission). In **Section 5.5**, I discuss the results.

Results show that on the announcement day in all the countries under consideration overinvesting firms earn statistically higher returns than value maximising firms. Country comparisons between the value maximising firms show that the announcement day abnormal returns in the UK are

⁸¹ As used in Beiner (2001), Barclay, Smith and Watts (1995)

significantly higher than in Germany, France and Italy. I should draw attention to the insignificance of the differences in abnormal returns between Germany and France. This further reinforces my hypothesis; as the share price behavior does not differ in bank-based countries where there are equal levels of agency conflicts. Similarly, the overinvesting firms' country comparisons show that day 0 differences between countries are significant only when comparing the UK with the other three countries (i.e. the differences between the bank-based countries are not significant). Further, I consider the share price reaction for overinvesting and value maximising firms according to the direction of dividend changes. Finally, in Section 5.6, I conclude and I provide recommendations for further developments of the study.

CHAPTER 6: "Conclusion and Further Research in the Area"

The thesis provides an addition to the literature as it investigates empirically and draws conclusions on the dividend policy of companies in Europe, focussing mainly on the UK, Germany, France and Italy.

The full imputation system in the UK and the partial imputation systems in Germany, France and Italy, result in significant differences across European countries with respect to the tax discrimination variables. Thus, the preferences of shareholders between dividends and capital gains vary across European countries. Also, results show that the dividend and capital gains tax burden is also affected by taxation reforms.

In all the countries ex-dividend day returns are positive and significant, suggesting that ex-day prices fall by less than the amount of dividends. The results confirm that in countries where the differential between dividends and capital gains is high, ex-day returns are high. Moreover, tests whether changes in tax differential in each country are reflected in the ex-day returns show that ex-day returns are not homogeneous across the alternative tax regimes. I also find that in each of the four countries, changes in the tax systems that affect taxes on dividends and/or capital gains alter significantly ex-day returns. However, there is some indication that in countries such as Germany, where short-term trading is allowed and when transaction costs are low, the pre-and post-ex-day returns are significant suggesting that investors trade to capture dividends. For the other countries, results provide further evidence on the tax effect on ex-day returns.

The investigation of the share price behaviour around the dividend announcements indicates that in the UK investors perceive dividend increases/initiations (decreases/omissions) as good (bad) news for the current performance and future prospects of the company. However, in the bank-based countries, where information asymmetry is lower than in market-based countries, investors perceive dividend increases/initiations negatively, while dividend decreases/omissions result in

positive abnormal returns. The results provide evidence to conclude that companies in bank-based countries decrease dividends in order to use the less costly internal funds to take positive net present value opportunities. At the same time, the negative market reaction to dividend increases indicates that companies are running out of good investment opportunities. Finally, further tests lead to the conclusion that dividend announcements provide information beyond of what is provided by earnings announcements.

The share price reaction to dividend announcements in European countries is also analysed in the context of the agency conflict hypothesis. Originally results provide evidence to support both the signalling and overinvestment hypotheses. However, further tests of the results according to the market-to-book ratio (as a proxy for growth opportunities) do not reveal any significant differences in the abnormal returns between overinvesting and value maximising firms. Therefore, evidence obtained is not strong enough to reject the signalling hypothesis over the overinvestment hypothesis.

This research is, to the best of my knowledge, the first to provide a comprehensive analysis of the dividend payments across European countries and test for the impact of institutional factors such as taxes and corporate governance on the propensity to pay dividends and the market reaction to dividend changes. In each chapter I specify areas for further research.

**CHAPTER 2: TAXATION AND DIVIDENDS: EVIDENCE FROM THE
UK, GERMANY, FRANCE AND ITALY**

2.1 INTRODUCTION

Miller and Modigliani (1961) established that in a frictionless world and when the investment policy is held constant, the company's dividend policy is irrelevant to its value and consequently to the shareholders' wealth. Under the assumption of perfect capital markets, when a firm pays dividends, money is simply transferred from one "form" to another: before the payment of the dividend, the money is in the form of shareholder claim on the firm's assets, whereas after the payment of the dividend, the shareholder has cash in hand. As long as the transfer is a fair market transaction, shareholders are indifferent between capital gains and the payment of dividends. But when income taxes are introduced, dividend policy appears to be relevant to the firm's valuation as there is a differential tax advantage of capital gains versus dividend income. This is firstly due to the double taxation of dividends (both at the corporation and individual shareholder level) and secondly to the historically higher tax rate on ordinary income than on capital gains income.¹ Therefore, shareholders' wealth is maximised if companies retain their earnings and provide returns to their shareholders through increases in share prices.² In contrast, companies pay a high proportion of their earnings as dividends and according to Lintner (1956) managers are reluctant to cut dividends. According to Black (1976) this constitutes a puzzle.

Several controversial theories have been developed in the literature in an attempt to fit the pieces of the dividend puzzle together. Results are contradicting and fail to provide a comprehensive explanation. In addition, the majority of the studies concentrate on the US dividend taxation system and the US dividend policy of the firm. At a later stage of the present part of my study, I illustrate that the US classical taxation system discourages companies to distribute profits in the form of dividends as they carry higher taxation as compared to capital gains. Moreover, OECD data³ reveals that the US has the second highest top tax rate on dividends, when considering both the corporate and individual taxes. It has been argued⁴ that high dividend tax rates reduce the economic growth by creating numerous distortions. First, high dividend taxes add to the income tax code's general bias against savings and investments; second, high dividend taxes cause

¹ Capital gains have a tax advantage even when the tax rate on *realised* capital gains equals the tax rate on dividends because unrealised capital gains are not taxed until the asset is sold; investors can affect the timing and amount of their tax payments by choosing when and what shares to trade. Rational investors, for example, could selectively liquidate parts of their portfolios to minimise their tax liability (i.e. sell shares with no capital gains or losses) and could also defer unrealised capital gains forever. See Constandinides (1983, 1984) who modelled this deferral feature of the tax code and labelled it the "tax-timing option". Also see Lease, Kose, Kalay, Lowenstein and Sarig (1999) for a full discussion.

² Allen and Michaely (1995), Poterba and Summers (1985)

³ OECD Tax Database and Joumard (2001)

⁴ See Edwards (2003), Gentry and Hubbard (1998)

corporations to rely too much on debt rather than equity financing (highly indebted firms are more vulnerable to bankruptcy in economic downturns); third, high dividend taxes reduce the incentive to payout dividends in favour of retained earnings which may cause corporate executives to invest in wasteful or unprofitable projects; fourth, high dividend tax rates create a bias against business organised in the corporate firm and; fifth, high tax rates on dividends and other types of capital income greatly increase the wasteful efforts of financial engineers to design ways of avoiding and evading taxes. In Europe, the situation differs significantly because dividend taxation systems provide shareholders with tax credits, in an attempt to alleviate the double taxation of dividends and, tax rates are lower as compared to the US. The study is the first to build on the advantage of these differences in order to further investigate the effect of taxation on the dividend policy of the firm. Still, there are many differences on the treatment of dividends between the European tax systems under consideration, which provide an ideal environment to distinguish between the predictions of the different and contradicting explanations provided in the literature as well as to further explore the tax hypotheses of the dividend policy of the firm. During my sample period (1987-2002), these countries have also adopted a set of reforms that affected their respective tax differential between dividends and capital gains, which provides additional incentive into the study. Therefore, the analysis will be conducted both in intra- and inter- European country levels.

Lasfer (1996) models the dividend and capital gains taxation burden under the UK imputation system, and argues that the overall tax burden on dividends and capital gains is a function of corporation tax, the dividend payout ratio and the differential taxation of dividends and capital gains. King (1977) provides a formal definition of the extent to which the tax system discriminates against dividends in terms of the "Tax Discrimination Variable" which is defined as the opportunity cost of retained earnings in terms of net dividends forgone.⁵ In Chapter 3, I test the predictions of the taxation effect hypothesis, that is whether in countries with higher tax discrimination variables, ex-dividend day share prices would drop by less than the amount of dividend, and therefore higher abnormal returns would occur, as compared to countries with lower tax discrimination variables. Some studies⁶ overcame the problem of the interpretation of the ex-day pricing by analysing the effects of changes in taxation codes. Therefore, I also examine the taxation changes in each country and their effect on dividends in order to observe whether changes in taxation that caused the tax discrimination variable to change also affected the ex-dividend share price behaviour.

⁵ If dividends and capital gains are taxed equally then the tax discrimination variable is equal to unity; if tax discrimination is lower (higher) than unity dividends are taxed more (less) heavily than capital gains.

⁶ See Poterba and Summers (1985), Lasfer (1995), Michaely (1991), Lakonishok and Vermaelen (1983), Bell and Jenkinson (2001)

The study proceeds as follows. In Section 2.2, I describe and compare the classical and imputation systems of dividend taxation; I analyse the taxation burden on dividends and capital gains under both systems and illustrate the imputation taxation system influence on the preference of the shareholders and consequently the dividend policy of the firm. To do this I use the UK imputation system as a benchmark. I also provide the theory behind the tax discrimination variable. In Section 2.4, I describe the dividend taxation systems, in the UK, Germany, France and Italy both from the corporation and the investor views of perspective in an attempt to calculate the tax discrimination variables and identify the differences on the dividend taxation burden between the countries. The major Tax Reforms in each country are also analysed in order to perceive the effects of taxation changes on the dividend payout policy as well as on the preferences of shareholders between dividends and capital gains (i.e. changes in the tax discrimination variable). This will also constitute the grounds for testing my hypotheses in the next chapter. In Section 2.5, I provide the literature review of the taxation effect on the dividend policy of the firm. Particularly I summarise the different theories of the taxation impact on dividends (the traditional view, the tax irrelevance view, the tax capitalisation view and the clientele effect view) as well as the dividend taxation and the relationship between long-term stock returns and dividend yield. The literature review around the taxation effects on the ex-dividend day share price behaviour is analysed in the next Chapter. Finally, the chapter concludes on the taxation effect on the dividend policy of the firm in the UK, Germany, France and Italy and sets the grounds for forming and testing the hypothesis in Chapter 3.

2.2 A COMPARISON BETWEEN THE CLASSICAL (US) AND IMPUTATION (EUROPE) TAXATION SYSTEMS

There are mainly two systems of dividend taxation namely the classical system and the imputation system, which can take the form of either partial, full or dual imputation system. Under the classical system, mainly adopted in the US, corporation tax operates separately from the personal tax. The company pays a flat rate of corporation tax on its taxable profits, and then shareholders pay income tax on the dividends received. Consequently, the classical system ignores the relationship between the company and its shareholders; and total tax is equal to the corporation tax plus the effective capital gains tax and the income tax on dividends. This is a simple system, but raises considerable objections because it leads to “*Double Taxation of Dividends*”. The controversy surrounding the double taxation of dividends relates to the fact that income distributed to shareholders should only be taxed once, at a firm level (at the corporation tax rate), or at the shareholder level (at the personal income tax rate). Typically, under the classical system dividends are taxed more heavily than capital gains, therefore there is a tendency for low dividend payout. One way of alleviating this burden is to exempt totally dividends as currently proposed by the US Government. The alternative is to adopt an imputation system where the total tax collected

by the tax authorities from companies and their shareholders would remain approximately the same regardless of the company's dividend policy. The key feature of the imputation system is to alleviate the double taxation on dividends since a partial (UK) or full (Germany, France and Italy) credit is given to the shareholders for the corporation tax paid on the underlying profits distributed. In other words, the company's tax liability on distributed profits is "*imputed*" to the shareholder and is regarded as a *prepayment* of his/her income tax on dividends.⁷

Under the imputation taxation system, corporation tax is assessed and charged on profits in any given period. Considering the UK imputation system as an example, **Figure 2.1** illustrates the payment of corporation tax when a company does not pay any dividends to the shareholders. For example, in 1998 fiscal year, the accounting period starts on 1 January 1998, and ends on 31 December 1998. On the 30th of March 1999 the company announces its earnings and on the 30th of September 1999 the corporation tax at the rate of 33 percent is due. Assuming profits of £100, the company's corporation tax liability is £33.

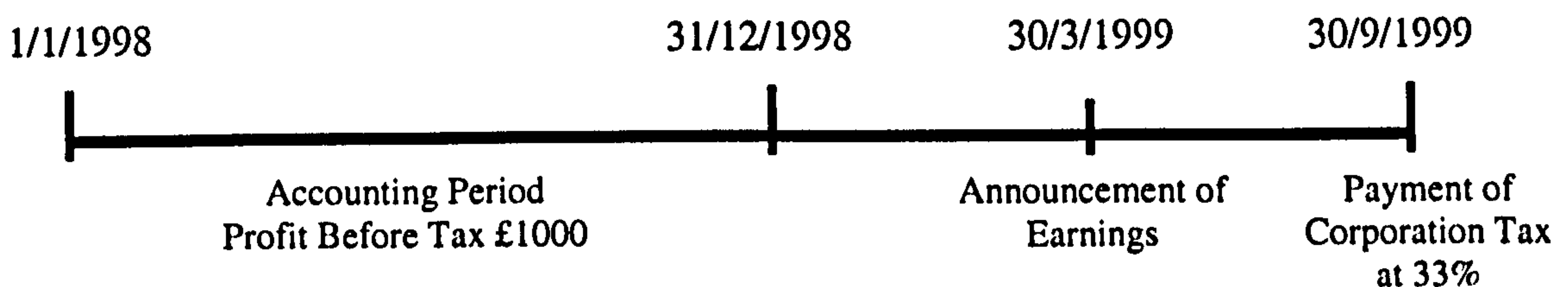


FIGURE 2.1

On the other hand, **Figure 2.2** illustrates the case when a company distributes profits as dividends to its shareholders. To illustrate how the system works, I assume profits before taxes for the accounting period 1 January 1998 to 31 December 1998, of £100 and that the company announces dividends on 30 March 1999 of $d=£10$. The Advanced Corporation Tax (ACT) is due on 14 April 1999 at the basic rate of 20 percent on gross dividends (D). Gross dividends are equal to $d/(1-0.20)$ i.e., $10/0.80= £12.50$. Therefore ACT payable is equal to $D-d$, which is £2.50. On 30 September 1999 mainstream corporation tax is due. This is equal to corporation tax (T_c) minus ACT, i.e. $(£100*33\%)-£2.5$. The company's tax liability to the Inland Revenue tax is $£33.3 - £2.5 = £30.50$. For taxation purposes shareholders are deemed to receive a gross dividend of £12.50, which consists of Net Dividend (d) of £10 and ACT of £2.50.

⁷ In some cases, where the rate of dividend tax credit exceeds the marginal personal income tax rate, (for example, the UK pension funds who are tax exempt) the shareholder receives a rebate for, in effect, overpaying the income tax due on the dividend.

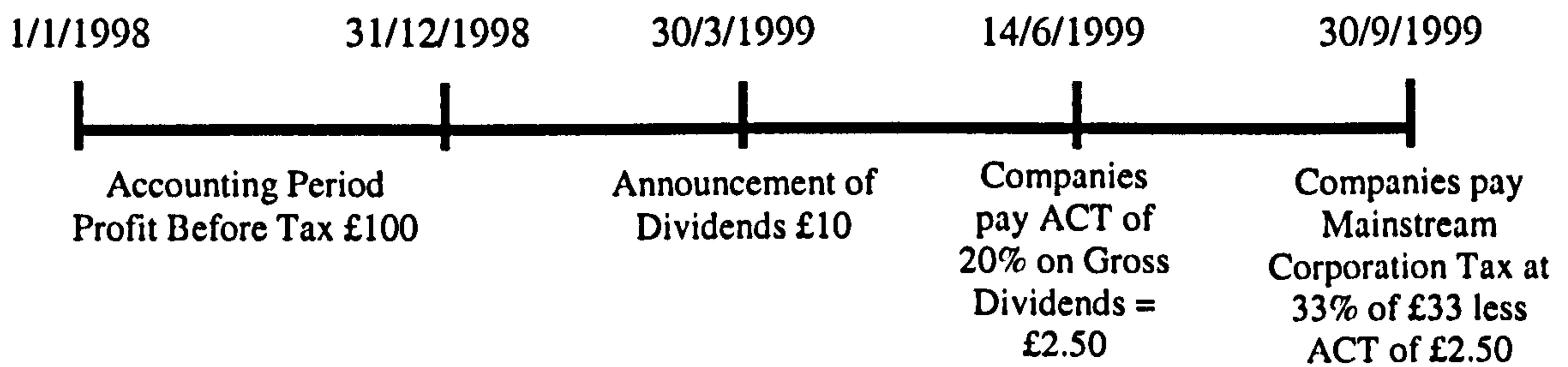


FIGURE 2.2

As illustrated in the above example, under the imputation system, when a company distributes a net cash dividend (d), it must also pay ACT⁸ equivalent to the basic rate of income tax (s), on the gross dividend (D), which is equal to $d/(1-s)$. Thus ACT is equal to sD , or $[(sd)/(1-s)]$. The distributing company pays ACT to the Inland Revenue fourteen days after the quarter in which the announcement of dividend is made and then deducted from the firm's corporation tax liability, which is usually payable nine months after the end of the accounting period. Therefore, there is only about three months gap between the day ACT is paid and the day ACT is deducted from the company's tax liability.

The essence of the imputation system is that when a shareholder receives dividends of £10, he/she is deemed to have already paid income tax at the basic rate. Shareholders pay tax mD , where m is their personal rate of income tax and receive a tax credit of sD . Therefore, shareholder's dividend tax is equal to $(m-s)D$, i.e. $d(m-s)/(1-s)$. Tax-exempt investors receive a full tax credit equal to s , £2.5, therefore the after tax dividend received is £12.50. Basic rate taxpayers for whom $m=s$, receive an after tax dividend of £10, and have no further tax liability. Whereas high tax payers with m equal to 40% (i.e. $m>s$) are subject to an additional income tax of £2.50 and the after tax dividend is £7.50, $[10-(12.5*40%)-2.5]$. In this case the effective dividend tax rate is equal to 25%, that is $(40\%-20\%)/(1-20\%)$. On the other hand, cash dividends received by corporate investors from other companies (for example, in the UK) are not taxed again as profits. The authorities cannot refund the associated tax credit but corporate investors can use it to frank their own dividend payments or offset it against their previous tax liability.⁹ From the above, a clear incentive of tax-exempt investors to prefer dividends to earnings retention could be observed. Therefore, for this class of investors,¹⁰ at the limit, the effective tax rate on capital gains is zero, whereas the tax credit on dividend income provided by the imputation system results in a negative overall tax rate on dividends for the tax-exempt institutions.

⁸ It should be noted that ACT rate reduced to 10 percent by the 1999 Finance Act, which imposed also a number of restrictions on its claim. A full explanation of this reform and the changes in the dividend taxation system are to be analysed at a later stage of this chapter.

⁹ Lasfer (1996) found that firms which are unable to deduct the ACT from their tax liability pay low dividends

¹⁰ Tax Exempt investors constitute the largest shareholder class in the UK

2.3 CAPITAL GAINS, TAXES, DIVIDEND TAXATION AND THE TAX DISCRIMINATION (TD)

VARIABLE

Lasfer (1995) models the capital gains and the dividend taxation burdens under the UK imputation system. Firstly, in the case where the company's earnings are retained and reinvested at the cost of capital, the company will generate an after-tax capital gains, $g_{at} = r(1-z)$, where r is the firm's after-tax earnings that are retained, and z is the effective capital gains tax rate. The capital gains tax burden is the sum of corporation tax paid, $[t_c r/(1-t_c)]$, and the individual tax rz , all divided by the pre-corporate taxed capital gains as shown in Equation (1).

$$\text{Capital Gains Tax Burden} = \frac{\frac{rt_c}{1-t_c} + rz}{\frac{r}{1-t_c}} = 1 - (1-t_c)(1-z) \quad (1)$$

On the other hand, when the company distributes profits in the form of dividends, the dividend tax burden is the sum of corporation tax paid, $[t_c d/((1-t_c))]$, and the individual taxes paid, $[d(m-s)/(1-s)]$, as a percentage of the pre-corporate tax dividend, $[d/(1-t_c)]$; as shown in Equation 2:

$$\text{Dividend Tax Burden} = \frac{\frac{t_c d}{1-t_c} + \frac{d(m-s)}{(1-s)}}{\frac{d}{(1-t_c)}} = 1 - \frac{(1-t_c)(1-m)}{(1-s)} \quad (2)$$

The overall tax burden on dividends and capital gains can therefore be calculated as a function of the corporation tax, the dividend payout ratio (d/E) and the differential taxation of dividends and capital gains. Equation 3 shows the overall tax burden on dividends and capital gains:

$$\frac{d}{E} \left[1 - \frac{(1-t_c)(1-m)}{(1-s)} \right] + \left(1 - \frac{d}{E} \right) (1 - (1-t_c)(1-z)) = 1 - (1-t_c) \left\{ \frac{d}{E} \left[\frac{(1-m)}{(1-s)} - (1-z) \right] + (1-z) \right\} \quad (3)$$

From this equation it can be observed that the overall tax burden on dividends and capital gains is a function of corporation tax, the dividend payout ratio, d/E , and the differential taxation of dividends and capital gains. Undoubtedly, one of the factors influencing dividend policy is the tax variables represented by the income tax m , the imputation rate s and the capital gains tax rate z . King (1977) models the combination effects of these rates as shown in Equation 4.

$$TD = \frac{(1 - m)}{(1 - s)(1 - z)} \quad (4)$$

Where, **TD** is the tax discrimination variable between taxes on dividends and capital gains taxes and measures the opportunity cost of retained earnings in terms of post-tax earnings foregone,¹¹ that is, the additional disposable income a shareholder would receive if one unit of retained earnings were distributed. To recall, the objective of the imputation system is to alleviate the double taxation of dividends and to reduce the taxpayer's preference for retained earnings. Therefore, one would expect that the higher the imputation rate *s*, the higher the after-tax shareholder's wealth, and the higher the expected level of dividends.

Substituting the tax discrimination variable in Equation 3, the overall Tax Burden on dividends and capital gains equation can be expressed as in Equation 5:

$$1 - (1 - t_c)(1 - z) \left(\frac{d}{E} (TD - 1) + 1 \right) \quad (5)$$

Therefore, when the dividend tax credit is equal to the tax on capital gains, the tax discrimination is unity and the dividend payout ratio does not affect the overall tax burden. However, when the tax discrimination variable is higher (lower) than one, the overall tax burden decreases (increases) as the payout ratio increases. Tax discrimination variable is a function of the individual income tax rate. In other words, if cash in the hands of the company and cash in the hands of the shareholder can be interchanged without attracting an additional tax liability (or credit) then the tax discrimination variable would be equal to unity denoting that shareholders are indifferent between dividends and capital gains. In the case when the tax discrimination variable is less than unity dividends are taxed more heavily than capital gains and investors would be expected to reward low dividend payout policy. On the other hand, when the tax discrimination variable is higher than unity, shareholders would prefer dividends than capital gains, as the latter are more heavily taxed, and high dividend payout policy companies would be rewarded. Therefore, it would be expected that in countries with higher discrimination variable shareholders would reward higher dividend payout companies.

One shortcoming of the imputation system is that tax relief is only available for the profits paid out as dividends to the shareholders. That is, there is no taxation relief available for profits that are retained by the company, and the corporation tax paid on retained profits is not reflected in tax

¹¹ See King (1977)

credits paid to tax-exempt shareholders. Thus, under the imputation system dividends offer a tax advantage for tax-exempt shareholders that result in a desire for higher level of dividend payments by firms. On the other hand, higher taxpayers have the opposite tax preferences, while only basic-rate shareholders pay the same tax regardless of the company's decision to pay dividends or not, because the rate of imputation is set equal to the basic rate of tax on dividend income. Hence, in countries where the majority of investors are tax exempt¹² (higher tax payers) companies are expected to adopt high (low) dividend payout ratios, as shareholders would reward such a policy.

Table 2.1 illustrates the effect of personal taxes on dividend payout under imputation system as compared to the classical system of dividend taxation. The amount of net dividend received is significantly higher for all classes of investors under the imputation system. The difference reflects the tax credit imputed to investors as a compensation for the corporation tax suffered. The income tax is based on gross dividends of £446.67. The dividend received by the investor, £335, is net of tax on dividends received. The tax on dividends received is calculated as the ratio of the difference between the net dividend and the dividend received over the dividend received i.e. $[(446.67-335)/335=33\%]$.

In **Panel A** and **B** the capital gains tax, z , is equal to the marginal income tax rate of dividends, m . The tax discrimination variable is equal to unity implying that investors are indifferent between dividends and capital gains under the classical system. However, under the imputation system, the tax discrimination variable for both tax exempt and basic rate taxpayers is equal to 1.33 implying that they both favour dividends to capital gains. In contrast, **Panel C** shows that higher taxpayers under the classical system favour capital gains to dividends, as the tax discrimination variable is lower than unity. Assuming an effective capital gains tax rate of zero percent, the tax discrimination variable for the higher rate taxpayer is 0.80 under the classical system and 0.60 under the imputation system, implying that higher taxpayers reward low dividend payout policy in any case. This illustrates the notion that for higher taxpayers, dividends are always more heavily taxed than capital gains. These investors will only favour dividends if the effective capital gains tax rate, z , is higher than the additional dividend tax, [i.e. $z > (m-s)/(1-s)$]. For the basic taxpayer the respective tax discrimination variable values are 1 and 0.75. This implies that under the classical system basic taxpayers are indifferent between dividends and capital gains, i.e. the payout policy does not affect their tax liability. Under the imputation system however, this class of investors will reward lower dividend payout policy as their after tax value will be lower if dividends are distributed.

¹² For example, in the UK the majority of shareholders are pension funds who are tax-exempt

TABLE 2.1: DIVIDENDS AND PERSONAL TAXES UNDER THE IMPUTATION AND CLASSICAL SYSTEMS

DIVIDEND TAX SYSTEMS	IMPUTATION 0% DPR	IMPUTATION 50% DPR	CLASSICAL 50% DPR
<i>PANEL A: NON-TAX PAYER $z=m=0\%$</i>			
Dividend Received	0	335	335
Tax Credit	0	111.67	0
Net Dividend	0	446.67	335
Tax on Dividend Received	0%	33%	0%
<i>Tax Discrimination</i>	<i>1.33</i>	<i>1.33</i>	<i>1.00</i>
<i>PANEL B: BASIC TAX PAYER $z=m=25\%$</i>			
Dividend Received	0	335	335
Income Tax (25%)	0	111.67	83.75
Tax Credit	0	111.67	0
Net Dividend	0	335	251.25
Tax on Dividend Received	0%	0%	25%
<i>Tax Discrimination</i>	<i>1.33</i>	<i>1.33</i>	<i>1.00</i>
<i>PANEL C: HIGH TAX PAYER $m=40\%$, $z=25\%$</i>			
Dividend Received	0	335	335
Income Tax (40%)	0	178.67	134
Tax Credit	0	111.67	0
Net Dividend	0	268	201
Tax on Dividend Received	0%	20%	40%
<i>Tax Discrimination</i>	<i>1.07</i>	<i>1.07</i>	<i>0.80</i>

Source: M. A. Lasfer, PhD Financial Economics, City University Business School, 2000

Following this analysis, I would expect that

HYPOTHESIS 1: Countries with full imputation system pay higher dividends than countries with partial imputation system.

However, based on the discussion above this might also depend on the shareholder structure in each country under consideration. Unfortunately, there is no source of data on ownership structure. Data obtained from different sources, is not disaggregated enough (in order to indicate in which taxation bracket each individual shareholder falls). This ranking should ideally be by shareholder tax rates. Table 2.2 provides a summary of the shareholding structure in the UK, Germany, France and Italy:

TABLE 2.2 THE SHAREHOLDING STRUCTURE IN EUROPE

Table Provides a Summary of the Shareholder Structure in the UK, Germany, France and Italy. Data should ideally reveal the shareholder structure by taxation rates. However, data is not available on machine readable form.

UNITED KINGDOM		GERMANY		FRANCE		ITALY	
Individuals	18%	Individuals and Non-Profit Organisations	17%	Individuals	34%	Individuals	26%
Banks	1%	Banks	14%	Banks	6%	Financial Institutions	22%
Institutional Investors	62%	Other Institutional ¹	15%	Institutional Investors	18%	Industrial Companies	22%
Inter-Corporate	2%	Corporate	39%	Inter-Corporate	21%	Public Sector	24%
Government	1%	Government	3%	Government	2%	Government	--
Foreign	16%	Foreign Inventors	12%	Foreign Investors	19%	Foreign Investors	7%

Source: International Capital Markets Group; M.A. Lasfer (2000) Financial Economics, City University Business School.

Notes: ¹Insurance Companies and Investment Funds

In the UK, institutional investors are pension funds hold 62 percent of the market and they are tax exempted. The second largest shareholding class is the individual investors holding 18 percent of the market followed by foreign investors who hold 16 percent. In contrast, institutional investors are relatively unimportant in Germany, because most German companies accrue pension liabilities and use the funds as working capital.¹³ The majority of German shareholders are industrial companies and the second larger class of investors is individuals and non-profit organisations. Therefore, it is inter-company shareholding rather than private shareholding, which is most widespread in Germany. In the French market, the majority of investors are individuals while companies also represent a large percentage. This can be assigned to the tradition of the French family controlled companies preferring to make portfolio investments through the family company rather than in the names of individuals. Traditionally institutional investors have not held a large percentage within the overall pattern of investment, mainly because most pension provisions are made via the state scheme. In Italy however, the share ownership is more balanced with each class of investors hold almost the same share percentage on the market with the exemption of the foreign investors who only hold 7 percent share of the market. There are no tax-exempt investors in Italy (unlike pension funds in the UK). Consequently, the hypothesis whether the shareholder structure affects the dividend policy of the firm is testable,

¹³ See Doing Business in Germany (2001), Charkham (1994), Edwards and Nibler (2000)

HYPOTHESIS 2: In countries where an imputation system is in operation and where the majority of the shareholders are either basic income tax payers or tax-exempt investors (UK), dividend payouts are high.

2.4 TAXES ACROSS EUROPEAN COUNTRIES: UK, GERMANY, FRANCE AND ITALY

There are very close similarities in the imputation systems of the UK, Germany, France and Italy. In general, in all four countries, each unit of cash dividend received by the shareholder is taxable under income tax and entitled to a dividend tax credit; which fully or partially offsets the tax charged at the corporate level. Germany, France and Italy operate systems that are close to being full imputation systems, that is, the corporate and personal tax systems are in effect fully integrated. The UK has a partial imputation system, where only part of the corporation tax charge can be used as a credit against income tax.

TABLE 2.3: THE ADOPTION OF IMPUTATION SYSTEM IN EUROPE

Table Shows the Dividend Tax Treatment in the UK, Germany, France and Italy

	DIVIDEND TAX TREATMENT	PRE-IMPUTATION SYSTEM
UNITED KINGDOM	Partial Imputation System	Pre – 1973: Classical System ¹⁴
GERMANY	Full Imputation System	Pre – 1977: Split Rate System
FRANCE	Full Imputation System	Pre – 1993: 1966 Partial Imputation System
ITALY	Full Imputation System	Pre - 1977: Classical System

Table 2.4 shows the major elements of the UK, Germany, France and Italy tax regimes covering the tax treatment of dividends receivable by a company’s shareholders, the tax base used for calculating taxable income and a brief summary of other significant taxes levied on corporations operating in each country. Moreover, a brief report of the major tax reforms in each country is provided. Dividend related items in this introductory table, are treated in more detail in the next Section.

¹⁴ Until the 1997 Tax Reform Act, please see discussion of the Tax Reform below

TABLE 2.4: SUMMARY OF TAX SYSTEMS IN EUROPE

The table provides a summary of the tax legislation in the UK, France, Germany and Italy.

DIVIDENDS	CAPITAL GAINS	LOSSES	DIVIDEND WITHHOLDING TAX		FOREIGN SOURCE INCOME	MAJOR TAXATION REFORMS
			FINAL	NOT FINAL		
UNITED KINGDOM						
IMPUTATION: Dividends carry a tax credit equal to the basic rate of income tax	Taxed as income after indexation allowance	C/fd ¹⁵ No limit C/bk ¹⁶ 3 years	There is no withholding tax in the UK, however companies must prepay ACT. If PBT < 0 ACT is Carried Forward		Taxable, Credit given for withholding tax and underlying overseas taxes paid	1988: Eliminated preferential taxation of capital gains 1994: ACT decreased from 25% to 20% 1997: Abolished the right of pension funds to be repaid the imputation tax credit 1999: Shadow ACT
GERMANY						
IMPUTATION: Retained and distributed profits taxed at different rates and dividends carry a tax credit equal to the distributed profits corporation rate	Taxed at normal corporate tax rates. Tax may be deferred though re-investment of proceeds	C/fd No Limit C/bk 2 Years	N/A	25% + sur charges	Tax credit available up to the amount of the German Taxes payable on the foreign source income. Tax treaties often provide further exemptions	1991: Solidarity Charge for one year (7.5%) introduced 1994: Corporate Tax rates reduced but reintroduced solidarity charge 1998: Solidarity charge dropped (5.5 %) Corporate Tax rates reduced

¹⁵ C/fd: Carried Forward

¹⁶ C/bk: Carried Back

FRANCE					
TAX CREDIT: Avoir fiscal granted to shareholders as a fraction of corporation tax paid. Precompte applies to dividends not borne full rate of corporation tax	Taxed at normal rates if short term. Normally a reduced rate if long term (2 years or more)	C/fd 5 years C/bk 3 years	N/A	N/A	Taxable when due to a resident corporation. Credit available via participation exemption (dividends) or tax credit (other income)
Italy					
TAX CREDIT: Dividends carry a tax credit equal to 36% and a withholding tax credit	Taxed as income. Tax may be paid in instalments	C/fd 5 years C/bk No	12.5%	10%	Tax credit of up to the amount which results from prorating total taxes by the proportion of foreign source income to total income
<p>1993: Avoir Fiscal was passed from 50% to 100% which equals the corporation tax paid</p> <p>1997: 10% Legal surcharge of corporation tax</p> <p>1999: Capital Gains taxed as ordinary income regardless of the holding period</p>					
<p>1993: Balancing tax introduced</p> <p>1998: Equalisation Tax abolished.</p> <p>1999: Ex-dividend day introduced prior to payment day</p>					

Source: Own Research and Tax Competition in European Union

In the next section a common framework is adopted in order to provide a description of the four European systems. I particularly consider the taxation systems both at the corporation and shareholder level when dividends are distributed. I also concentrate on major taxation reforms in each country, which affected the taxation burden on companies paying and shareholders receiving dividends as well as the tax differential between dividends and capital gains. Corporation, Income and Capital Gains Taxation Rates, as well as the Imputation Taxation Rates are provided in Appendix 3. The tax discrimination variable is calculated for each country under consideration for the period 1987-2002 in order to measure the differential taxation of dividend and capital gains.

2.4.1 THE IMPUTATION TAXATION SYSTEM IN THE UK

The Finance Act¹⁷ 1972, introduced the UK imputation system (as described in Section 2.1.2), which replaced the classical system. Appendix 4.1 illustrates the taxation system both at the corporation level and the shareholder level when 100 units of profit are generated and retained earnings equal to zero (i.e. all profits are distributed to the shareholders in the form of dividends¹⁸). At the company level, taxation is equal to 31 percent, therefore, *after-tax profits* available for distribution equal to 69 units. ACT has to be paid (20 percent on the Gross Dividend) to the Inland Revenue, which is equal to 17.25 units. The shareholder receives 69 units of dividends, which includes a tax credit equal to ACT. Tax exempt shareholders are entitled to a tax credit equal to the taxation amount (17.25 units) paid at the company level, basic income shareholders have no further obligation to the Inland Revenue since their personal income tax liability (on the dividends received) is equal to the ACT paid at the company level, while higher tax payers have a further liability equal to 17.25 units since their income tax rate is 40 percent.

When a UK company distributes dividends out of after-tax profits, ACT is also due. From 1 April 1994 to April 1999, ACT was set at 20 percent¹⁹. At the company level, ACT is fully offset against the total tax liability of the company but there is a timing difference.²⁰ The difference between the corporation tax liability (33 percent of taxable profits) and ACT (20 percent of gross dividends) is the *mainstream corporation tax liability* (13.75 units), which can be offset against the corporation tax liability.²¹ For the five years ended 31 March 1993 the set-off limit was 25 percent of the company's profits chargeable to corporation tax, reduced to 22 ½ percent for the year to 31 March 1994 and 20 percent thereafter.

¹⁷ Henceforth, FA

¹⁸ In the study, dividends mentioned are considered to be cash dividends

¹⁹ Equal to the basic income tax rate

²⁰ The ACT payment by the company is due quarterly when dividends are paid, however, ACT is only offset against the annual corporation tax liability nine months after the accounting year end.

²¹ For full details on the Mainstream Corporation Tax Treatment see the Inland Revenue, Corporation Tax, Section T11.1

Dividends and attaching tax credit, received from a resident company is known as "*Franked Investment Income*", and is exempt from corporation tax, and the 20/80 ACT paid thereon. It is imputed to the recipient company's own ACT liability for set-off. This means that as long as dividends are paid between resident companies, only one charge to ACT arises. Moreover, one of the features of the UK system is the issue of "*Surplus Advance Corporation Tax*". Firms whose UK taxable profits are too low or nil²² and are not able to recover all payments of ACT in the same year are described as being in a "*Surplus ACT Position*", or as "*Tax Exhausted Companies*". In particular companies cannot offset ACT paid on gross dividends in excess of UK taxable profits. Any ACT that cannot be deducted in the current year is classified as surplus ACT and it can be either offset against corporation tax payments of the two previous years or carried forward indefinitely to offset against future corporation tax liabilities. However, if its recoverability is not reasonably certain and foreseeable in the future, ACT is directly written off in firms' accounts increasing the tax cost on dividends and resulting in higher tax burden on dividends relative to the implied on retained earnings.²³ Lasfer (1996) notes that the imputation system is fully operational only when ACT is recovered, i.e., when dividends are not paid from profits generated abroad and taxable profits exceed gross dividends.

The UK imputation system at the shareholder level is illustrated in Appendix 4.1. Personal income tax is levied on the aggregate distribution received and the related tax credit (ICTA 1988 s20). Shareholders receive 69 units of cash dividend from the company, which includes 17.25 units of tax credit. Tax-exempt investors whose personal income tax rate is equal to zero are eligible for a full reimbursement of the tax credit, which makes the dividend received equal to 86.25 units. Basic tax payers have no further tax liability (as their personal income tax rate is equal to the ACT rate); whereas higher tax payers who are taxed at 40 percent are liable to a further 17.25 units of income tax which makes dividends received equal to 51.5 units. The UK Imputation Tax System is complex in the sense that the imputation is granted at the basic rate of tax, and because of the progressive marginal rate income tax structure, some shareholders are required to pay additional tax on dividends whereas others are refunded the tax credit. The system of tax credits is needed to ensure that the correct amounts are paid. These complications could be avoided, if there were a single tax rate on investment income applicable to all investors, including pension funds.

As 2 July 1997 the dividend tax credit was no longer refundable to corporations and pension funds. The tax credit however, remained refundable to individuals until the 1999 Finance Act, which abolished ACT (from April 6, 1999), and a system of "*Shadow ACT*" was been introduced. The purpose was firstly, to do away with the need for companies to make group income elections so that they can pay dividends to

²² In the 1970s and early 1980s other corporate tax allowances, such as capital allowances and stock reliefs, reduced significantly firms' present and future taxable profits to below their gross dividend payments. These allowances led companies to be tax exhausted where their corporation tax liability is nil or negative and their tax is unrelieved; See Devereux (1987) and Edwards et al. (1987)

²³ For example, from Equation (3) Section 2.1.3, any dividend paid by tax exhausted firms for which, say $t_c=0$, to tax-exempt investors (whose $m=z=0$) carries a tax burden of $[s/(1-s)]$ compared to the tax burden on capital gains of 0. Therefore, it could be

their parent companies without having to account for ACT and secondly, to simplify the tax rules covering dividend payments.²⁴ Under the new FA shadow ACT is to be used solely to limit the recovery by a company of past surplus ACT and only affects companies with past surplus ACT as at 1999, and only until they have utilised it.

More precisely, a shareholder receives the dividend with an accompanying tax credit equal to 10 percent of the dividend plus tax credit. The tax credit is equivalent to the basic rate of income tax on dividends. Companies do not pay tax on dividends received and companies that paid dividends before April 1999 had to pay ACT of one quarter of the dividend. The ACT could usually be set against a company's corporation tax liability. However, there is a limit on the amount, which may be set against corporation tax liabilities (i.e. 20% of the corporation tax profits is retained). The offset capacity is allocated to shadow ACT for the accounting period, computed on a similar basis and at the same rate as applied before 1999, although no actual corporation tax relief is given for the amounts allocated. Any balance of the offset capacity available for an accounting period is allocated to surplus ACT brought forward at 6 April 1999, for which actual corporation tax relief is given. Special provisions apply where shadow ACT exceeds the offset capacity for the period and to group companies. Dividends received from resident companies continue to be exempt from corporation tax, being franked investment income. Thus, there is no economic double taxation of dividends paid among resident companies. Table 2.5 illustrates the UK dividend paying mechanism after the abolition of ACT:

TABLE 2.5 THE UK 1999 ABOLITION OF ACT

Table illustrates the imputation tax system in the UK after the 1999 FA that abolished ACT.

Corporate Profits	100
Corporation Tax ²⁵ at 30%	(30)
Dividend Paid	70
Attaching Non-Repayable 1/9 Tax Credit	11.11
"Grossed-Up" Dividend for Individual Income Tax	81.11

Under this UK imputation system, used as a benchmark to illustrate the effect of corporation and personal taxation on the dividend policy of the company, the tax discrimination variable is equal to:

$$TD_{UK} = \frac{(1 - m)}{(1 - z)(1 - s)} \quad (6)$$

argued that these tax arguments imply that where dividend tax-clienteles do not prevail, a firm is expected to set its dividend policy to minimise its tax liability and to maximise the after-tax return of its shareholders. See Lasfer (1996)

²⁴ For example, after the abolition of ACT there is no further build up of surplus ACT, thus, profits earned overseas are not subject to double taxation when they are distributed by a UK company. Consequently, there is no need for special rules to enable international companies to pay dividends out of foreign income. For details see Inland Revenue: Company Tax Division, Section 3.

²⁵ Payable 1 January 2001

In order to illustrate the effect of the Taxation on dividends and capital gains, and for country comparison purposes, the tax discrimination Variable is calculated and shown in the Table 3.6, using the basic taxation rates in the UK. The tables also illustrate the effect of Taxation Reforms. The tax discrimination variable is calculated using the UK historical taxation rates for the period 1986-2002 provided in Appendix 3.1.

TABLE 2.6 THE UK TAX DISCRIMINATION VARIABLE

Table Shows the Tax Discrimination Variable for the three classes of investors in the UK for the Period 1986 to 2002 calculated using the taxation rates provided in Appendix 3.1.

YEAR	HIGHER TAX PAYER	BASIC TAX PAYER	TAX-EXEMPT INVESTOR
1986-87	0.805	1.429	1.408
1987-March 1988	0.783	1.429	1.369
6 April 1988-1994	1.333	1.333	1.333
1 April 1994-1997	1.250	1.250	1.250
2 July 1997-1999	1.250	1.250	1.000
6 April 1999-2002	1.125	1.000	1.000

The 6 April 1988 Taxation Reform Act in the UK was equivalent to the 1986 Income and Corporation Tax Reform in the US, which eliminated the preferential tax treatment of long term-capital gains. The capital gains taxation rate was set equal to the individual income taxation rate. From the tables above, it can be clearly obtained that the impact of this tax reform fell on the higher taxpayers and to a lesser extent, on the basic and tax-exempt taxpayers. For the higher taxpayers, the capital gains taxation burden was significantly increased by 6.5 percent while the dividend taxation burden was decreased by 16.3 percent. Consequently, as a result of the tax reform higher taxpayers would shift their preferences to favour dividends. The trend in the tax discrimination variable indicates that after the tax reform Act, this class of investors would prefer higher dividend payouts.

The 1994 Tax Reform Act set the tax credit equal to 20 percent. The tax discrimination variable was then set equal to 1.25 for all classes of investors in the UK. In effect, there was a general preference of dividends over capital gains until the 2 July 1997 when the incoming labour government in the UK introduced the 1997 Finance Act, which abolished the right of pension funds to be repaid the imputation tax credit. After the reform there was no significant change in the tax discrimination variable for either the higher or the basic investors. In contrast, the tax-exempt investors' dividend taxation burden was increased from 16.25 percent to 31 percent, which was equal to the capital gains taxation burden. As a result the tax discrimination variable was set equal to unity indicating the indifference between dividends and capital gains for this class of investors.

The Finance Act 1999 abolished the Advance Corporation Tax, accordingly, the tax credit on dividends is reduced from $\frac{1}{4}$ to $\frac{1}{9}$ (representing 10 percent of the tax-credit) and it is not repayable in cash. Calculations illustrate that the impact of this taxation reform, fell on the basic taxation payers, as the

dividend taxation burden was increased to 37 percent, and the tax discrimination variable was set equal to unity, indicating the indifference of this class of investors between dividends and capital gains. There was no impact of the reform on the tax-exempt investors however the higher taxpayers' tax discrimination variable was decreased, lowering the preference of this class of investors for dividends over capital gains as a result of the significant increase of the dividend taxation burden from 48 percent to 52.75 percent.

This analysis, based on standard rates, shows that, in general all investors would either be indifferent or would prefer dividends over capital gains. With the effective tax rates, the preference of dividends over capital gains may, however be altered because while the standard income tax rates are likely to be the same as the effective rates, the effective capital gains tax rates are likely to be lower than standard rates because of allowances and deferrals of capital gains. I test this preference by analysing the behaviour of share prices on the ex-dividend dates in Chapter 3.

2.4.2 THE IMPUTATION TAXATION SYSTEM IN GERMANY

The dividend taxation system in Germany was adopted in 1977 in order to abolish the double taxation of dividends. The system combines the features of a split rate system²⁶ (under which companies suffer higher taxation on retained than on distributed profits) with those of full imputation system. Appendix 4.2 illustrates the taxation system in Germany at the corporation level (both in the case where the company distributes the profits and/or where profits are retained within the company), and the shareholder level when the company generates 100 units of profit. At the company level, when profits are retained, the after tax income is 48.55 units, while if profits are distributed income after taxes is 57.41 units, due to lower corporation and solidarity tax charges. Distributed profits are also subject to further taxation (analysed in detail below) and shareholders receive 42.27 units of dividend. Dividends in the hands of the shareholders are subject to the individual income tax (on gross dividends), but entitled to dividend tax credit (not available for tax-exempt shareholders) which results to 56.62 units, 57.39 units and 40.47 units of net dividends in the hands of tax-exempt, basic income and higher income taxpayers respectively.

As shown in the example above, corporation tax Law lists two different standard rates; with profits distributed as dividends subject to a lower corporation tax rate than retained profits. In the pre-1990 period, retained profits were taxed at 56 percent while distributed profits were taxed at 50 percent. The 1990 Tax Reform Law lowered these rates, to 50 percent, and 46 percent respectively. As for January 1994, a further reduction of these rates from 50 percent to 45 percent, and from 46 percent to 42 percent came in force. It should be noted however, that since 1995 there has also been a 7.5 percent surcharge,

²⁶ One of the major changes in the German corporation tax was the introduction of a "Split-rate System" in 1953, which provided partial relief for the double taxation of dividends at the corporate level. Under this system, profits distributed to shareholders were subject to a tax rate of 15 percent, whereas retained profits were taxed at 51 percent. In 1958 a new tax rate structure was introduced which comprised a *low exemption level*, a bracket with a constant marginal tax rate, a second bracket with *progressive rates* and a final bracket with also a *constant marginal tax rate*. The tax rates on retained earnings and dividends were changed repeatedly in 1953, 1955 and 1958.

the so-called *unification tax or solidarity charge*²⁷ affecting all corporate and personal taxes. Despite reductions in German corporate income tax rates in 1990 and 1994, at the end of 1998 the German corporate income tax was still characterised by high tax rates in comparison to other countries in this study. Headline tax rates of 40 percent on retained profits and 30 percent on distributed profits were augmented by a 5.5 percent solidarity surcharge, and additional local taxes on corporate profits (Gewerbesteuer) that ranged from around 13 percent to 20 percent. Combining these taxes, the tax rate typically paid by a corporation on an additional unit of profits was *about 56 percent if these profits were retained and about 42.8 percent if they were paid out as dividends*. In 1999, the federal corporate tax rate on retained profits was reduced from 45 percent to 40 percent, while for the distributed profit was 30 percent.

Therefore, the resulting corporation income tax is to be reduced to the lower distribution rate if and to the extent the profits are distributed. As long as the company retains the profits the retention rate applies. A complication arises if and at the time when the company decides to distribute profits which were firstly retained. In this case, the difference between the tax paid at the retention rate and the applicable lower distribution rate will be refunded from the tax office to the company.²⁸ Since the tax credit is fixed at 30/70ths of the dividend, the mechanics of the imputation system do ensure that any dividend leaving the company bears a corporation income tax burden of exactly that amount. This is accomplished by segregating the company's income after tax (the distributable equity) into several baskets according to the corporation income tax charge they have suffered before its distribution is taken into account. Franke and Hax (1990, p448)²⁹ show that if the company retains earnings in one year, reinvests them, and distributes the earnings in the following year as dividend, the tax-inferiority of retained earnings for individual investors is reduced.

Dividends paid to non-residents are also subject to **Withholding tax (*Kapitalertragsteuer*)** at a rate of 25 percent, increased to 26.38 percent by the solidarity surcharge. The required holding is reduced from 25 percent to 10 percent if an exemption or a tax credit for underlying German corporate tax is granted to the parent in its country of residence in respect of the dividends; or if the parent's country or residence exempts from withholding tax dividends paid to German resident companies in respect of similar holdings. Where a company receives dividends, the net dividend received, grossed-up by both the withholding tax (25 percent of the actual distribution) and the underlying corporate income tax at the rate

²⁷ Solidarity Contribution (Solidaritätsbeitrag) is an additional tax on the individual income and the corporation profits as a contribution towards the cost of reconstructing the economy of the new Eastern States of the Federal Republic, introduced after the reunification of Germany. It was introduced for one year only in 1991 at a rate of 3.75 percent followed by a pause, and then re-introduced in 1995 with indefinite duration. The rate is equal to 7.5 percent on the personal and corporation income and was reduced to 5.5 percent in 1998. The 1998 corporate rate, therefore, was actually $0.45(1+0.055)=47.475$ percent. The surcharge does not however, affect the amount of tax credit. For full discussion see McDonald (2001).

²⁸ For example in 1997, the corporate tax rate was 45 percent, thus a corporation would have paid tax of 45 units on earnings of 100 units. However, at the point when these earnings are distributed, there is a corporate-level credit of 15 units, which results in a net 30 units tax on earnings paid as dividends. Shareholders receive the 70 units of dividend along with 30 units of tax credit.

²⁹ Franke, Günter and Hebert Hax, 1990, "*Finanzwirtschaft des Unternehmens und Kapitalmarkt*", 2 Aulf., Heidelberg, cited in Amihud and Murgia, 1997.

of 30 percent constitutes the taxable income in the hands of the company. The effects of the German imputations system are:

- All taxable corporate profits, whether distributed or not, are subject to corporate income tax levied at the normal rate
- Part or all of the corporate income tax paid on the distributed profits is set off against the shareholder's tax liability on dividends or refunded if the corporate income tax paid exceeds the shareholder's income tax liability.
- The withholding tax paid on the dividends may also be credited by resident shareholders against their own tax liability and any excess credit is refundable.

At the shareholder level, all resident individuals in Germany are subject to *Individual Income Tax (Persönliche Einkommensteuer)* on their worldwide income. Germany's tax schedule is based on a formula, an arithmetic progression at rates³⁰ between 25.9 and 53 percent, and does not have brackets. The full amount of each investor's share of the pre-tax distributed profits, not just the dividend received net of corporate income taxes³¹ paid, is treated as taxable income to the investor. Therefore, the yield for the shareholder consists of two portions, both of which are liable to income tax. Firstly, the dividend paid by the company before deduction of the capital yields tax and secondly, the creditable corporation tax (tax credit or tax balance) which is considered received together with the taxable income tax.

The shareholder is entitled to a full credit for the 30 percent (36 percent before 1994) when his/her income tax liability is computed. **Appendix 5** provides a full discussion of the dividend tax credit in Germany. It is important to note that foreigners have to bear the full tax burden on distributions as well as the additional dividend withholding tax. In other words, the imputation of the corporation income tax paid is restricted to German resident individuals and companies as well as certain other entities resident in Germany. There are at least three rules, which restrict the ability of German investors to use the tax credit. Firstly, only the economic owner to the stock is entitled to the tax credit. Depending on the interpretation of this rule, this has a potential to defeat many arbitrage strategies; for example it prevents custodial banks from receiving the credit. Secondly, Paragraph 36³² of the German Income Tax Law limits the use of the tax credit in cases where shares are borrowed from foreign investors.³³ Thirdly, Paragraph 15c³⁴ of the German Income Tax Law makes the capital loss on shares non-deductible to the extent they are attributable to a dividend payment if (i) the shares are not held at least ten days or (ii) the position is hedged. **Appendix 5** provides a full discussion of the mechanics of the dividend tax credit under the German Tax Law.

³⁰ Appendix 3.2 provides the German corporation income tax rates (both on retained and distributed profits), income tax rates, capital gains tax rates and imputation credits.

³¹ Corporation Profits Tax (Körperschaftsteuer): Corporations (Aktiengesellschaft (AG) or Gesellschaft mit beschränkter Haftung (GmbH)) are generally subject to two taxes on income, the corporation profits tax and the trade tax on income. They are also liable to two kinds of net assets taxes, the property tax and the trade tax on capital.

³² See Appendix 5

³³ Stock loans provide an obvious mechanism for temporary transference of stock; this rule is aimed at reducing their value.

³⁴ See Appendix 5

Dividends paid to non-residents are subject to *withholding tax* at a rate of 25 percent, increased to 26.38 percent by the solidarity surcharge. The required holding is reduced from 25 percent to 10 percent if an exemption or a tax credit for underlying German corporate tax is granted to the parent in its country of residence in respect of the dividends; or if the parent's country or residence exempts from withholding tax dividends paid to German resident companies in respect of similar holdings.

This system implies that, in Germany, dividend stripping remains possible with regard to dividend withholding tax. Dividend stripping refers to transactions in which shareholders not entitled to a credit of corporation and dividend withholding tax (corporate and individual non-residents not holding the shares in domestic permanent establishments) "sell" their shares to persons entitled (residents) so that the latter may receive the dividend and the credits attaching thereto. If the buyers are able to offset part or the entire dividend against losses, they will receive a tax refund. Thereafter, the shares are resold to the original shareholder.

The German Taxation system is interesting in the sense that at the company level retained profits are taxed more heavily than distributable profits, however at the shareholder level, capital gains are taxed favoured compared to income from distributed profits. Capital gains for corporations in Germany are taxed as ordinary income but individuals are not liable to capital gains tax.³⁵ If the holding period exceeds six months, twelve months as of 1999, gains are not taxed. Sales and certain "dispositions" of property held for short periods are, however, treated as "speculative gains" and included in the individuals' taxable income.

Consequently, under the German tax system the total tax liability is composed of a rate of corporation tax on retained earnings, $T_{c,re}$, plus the corporation tax rate on distributed profits, $t_{c,de}$, plus the shareholders' rate of income tax on dividends and can be expressed in the following equation:

$$(P-D) t_{c,re} + D t_{c,de} + m D \quad (7)$$

Where, P is the company before tax profits, D is the gross dividends paid, $t_{c,re}$ is the corporate taxation rate on retained earnings and $t_{c,d}$ is the corporate taxation rate on distributed earnings while m is the shareholders' personal tax rate.

³⁵ Murphy and Schlag (1999) argue that the relative attractiveness of dividend income is affected by the existence of special rules for taxation on capital gains. They draw attention to the fact that capital gains and losses for German individuals are reported as normal taxable income only if the assets are held less than 6 months and are not subject to tax otherwise. They tested the effect of varying dividend tax rules in Germany by utilizing the Capital Asset Pricing Model (CAPM) framework suggested by

If the profits are retained within the company and reinvested, the company's after tax profits would be equal to $(1-t_{c,re})$. Investors would generate after-tax capital gains of $(1-t_{c,re})z$, where z is the shareholders personal tax rate ($z=m=0$ if assets held for more than a year). Therefore the total tax burden on capital gains would be equal to $(1-t_{c,re})-(1-t_{c,re})z$, which is equal to $(1-z)(1-t_{c,re})$. In the case where dividends are distributed the company after tax profits would be equal to $(1-t_{c,de})$ and the shareholders would generate $(1-t_{c,de})m$. Therefore the total tax burden on distributed earnings would be equal to $(1-t_{c,de})-(1-t_{c,de})m$ which is equal to $(1-m)(1-t_{c,de})$. Therefore, the tax discrimination variable can be expressed as:

$$TD_{GER,ST} = \frac{(1-m)(1-t_{c,de})}{(1-z)(1-t_{d,re})} \quad (8)$$

However, long-term investors are not liable to capital gains income tax if assets are not disposed within one year of purchase. Therefore for long-term investors the tax discrimination variable can be expressed as:

$$TD_{GER,LT} = \frac{(1-m)(1-t_{c,de})}{(1-t_{c,re})} \quad (9)$$

TABLE 2.7 TAX DISCRIMINATION VARIABLE IN GERMANY

Table shows the Tax Discrimination Variable in Germany for the period 1986 to 2002 calculated using the taxation rates provided in Appendix 3.2.

PANEL A: ASSETS QUALIFY FOR CAPITAL GAINS TAX EXEMPTION			
YEAR	Higher	Basic	Tax-Exempt
1986-90	0.500	0.886	1.136
January 1991-93	0.508	0.875	1.080
January 1994-98	0.496	0.854	1.055
November 1998-2002	0.548	0.865	1.167
PANEL B: SHORT-TERM HOLDING PERIOD			
YEAR	Higher	Basic	Tax-Exempt
1986-90	1.136	1.136	1.136
1990-93	1.080	1.080	1.080
January 1994-98	1.055	1.055	1.055
November 1998-2002	1.166	1.166	1.167

Table 2.7 Panel A reports the values of tax discrimination variable for each tax-bracket investor over various periods reflecting tax changes, assuming long-term capital gains, (i.e. investors hold the assets for longer than six months, one year as of 1999), to be eligible for capital gains tax exemption. As shown in the table the tax discrimination variable both higher and basic tax payers in Germany is less than unity,

Murphy (1990). This particular framework, is especially suitable for Germany because Sauer and Murphy (1992) found risk-return tradeoffs in Germany to be fairly well characterised by Sharpe's CAPM.

illustrating a preference for capital gains, as under the German tax system dividends are more heavily taxed than capital gains. However, the tax discrimination variable for tax-exempt shareholders indicates that capital gains are taxed more heavily than dividends therefore, this class of shareholders would reward higher dividend paying companies. The 1990 taxation reform impact fell mostly on the tax exempt shareholders as the tax discrimination variable decreased significantly by 5.63 percent while the 1994 taxation reform had an impact on both the basic and tax-exempt shareholders' tax discrimination variable. The 1998 Tax Reform significantly affected all shareholders' preference for dividends over capital gains, as the tax discrimination variable was significantly increased for all classes of investors.

Table 2.7 Panel B, on the other hand, shows that all classes of shareholders would suffer less taxation if profits were distributed rather than realised through capital gains in the short-term. This evidence is contradictive with the Miller and Modigliani prediction, that dividend policy is irrelevant as it is simply a transfer of money from the company to the shareholders. If the shareholder is in the immediate need of liquidity, will suffer higher taxes on short-term capital gains than on dividends; in the opposite case where profits are distributed as dividends, shareholders with excess cash can reinvest the money in the company.

2.4.3 THE IMPUTATION TAXATION SYSTEM IN FRANCE

The full imputation system in France was introduced in 1993, following the partial imputation system, since 1966. The French system remains very different from those of other developed countries. The top marginal income tax rate is among the highest in developed countries, but the average rate of this tax is one of the lowest. This paradox is one example of the uniqueness of the French tax system.³⁶ **Appendix 4.3** illustrates the taxation system in France at the corporation level and the shareholder level. The company is liable to corporation tax (36 2/3 percent) on the profits generated (100 units), while profits available for distribution (63.34 units) are grossed up by the Avoir Fiscal (i.e. the imputation tax credit rate, equal to 40 percent) and then taxed at the corporate income tax rate of 36 2/3 percent. Tax payable by the company for the profits distributed is 7.11 units and shareholders receive dividends of 56.17 units. Shareholders are liable to personal income tax on gross dividends received (cash dividend plus the avoir fiscal, 81.50 units) and are entitled to a reimbursement of the avoir fiscal. Consequently, 81.5 units of net dividends is received by the tax-exempt investors, while basic and higher tax payers' after tax dividends received are equal to 52.98 and 35.20 units respectively.

Under the French law corporation tax is normally an annual tax on the total profits made by the companies and other legal entities. In general, France gradually reduced its corporate income tax rate from 50 percent to 33.33 percent, although the effect of this reduction has been partially reversed by significant surcharges introduced in January 1995 and November 1997. The standard rate is 33 1/3 percent, but it decreases to 19 percent for long-term capital gains put into reserves and for part of the

³⁶ See Bold and Chennells (2000), Ault (1997)

accounting profit, at most equal to 25 percent of such accounting profit. It is however limited to 24 percent or 10 percent on property income of non-profit organisations. The Finance Amendment Act of 1995 subjects legal entities to a surcharge corresponding to 10 percent of the corporation tax assessed on their taxable profits. Therefore, the effective corporate income tax rate, including the surtax is $36 \frac{2}{3}$ percent. Particularly, the law of November 1997 involving urgent tax and financial matters burdens legal entities liable to corporation tax with a standard temporary surcharge equal to 15 percent for the periods ending in December 1998 while this is reduced to 10 percent for the 1999 fiscal year.

The French corporation tax system has taken its modern aspect in 1966 with the creation of the dividend tax credit known as the "*Avoir Fiscal*". This is a dividend tax credit fraction of corporation tax already paid by a company on dividend paid to its shareholders. The evolution from 1966 to 1993 goes from a period where the *Avoir Fiscal* is only half of the French corporate tax paid by the distributing company, to a period beginning in 1993 where the *Avoir Fiscal* is exactly equal to the corporation tax, i.e. the *Avoir Fiscal* has passed from 50 percent to 100 percent, in 1993. As shown in the example, the dividend tax credit is added to the shareholder's taxable income and its amount is deducted from the tax chargeable to the shareholder in order to avoid economic double taxation borne by distributed corporate profit. Credit is available to individuals but not to corporations, moreover, subject to the provisions of international conventions, only residents of France are entitled to the dividend tax credit.

Every dividend (Appendix 6 provides a full definition of dividends for tax purposes in France) is matched with an *Avoir Fiscal* of 50 percent (100%) of the dividend's amount, but an *equalization tax* is necessary every time a dividend is generated by non-taxed profits or profits taxed at a lower rate. The French equalisation is a mechanism that cannot be disassociated from the *Avoir Fiscal*. It is not a kind of corporation tax, it is the only way of financing the obligatory *Avoir Fiscal*. When the *Avoir Fiscal* was created in 1966, there was a choice between either giving *Avoir Fiscal* to only the dividends coming from profits having borne the French corporation tax at the normal rate; or give *Avoir Fiscal* to all distributions. The second solution was adopted, but giving *Avoir Fiscal* to dividends coming from profits not taxed in France at a normal rate would have been contrary to the economic double taxation on dividends. In order to re-establish the balance, a mechanism of equalisation, "*précompte mobilier*", was created. In general, dividends paid out of income that has not borne French corporation tax are subject to an equalization tax at the level of the company – the *précompte* –, which is equal to the tax credit received by shareholders. The *précompte* is only applied on dividends distributed to shareholders entitled to dividend tax credits and those resident in non-treaty countries. The *précompte* is charged on dividends paid out of fully taxed profits that have been retained for more than five years. These profits suffered a corporate tax of 19%, therefore the *précompte* is equal to 14.33% in order to equalise to corporation tax rate of 33.33%. Therefore, the rate at which the *précompte* is charged depends on the tax paid on the relevant income: the principle is that the *précompte* should raise the rate of tax to $33 \frac{1}{3}$ percent; this implies that in cases of tax exempt income, such as dividends from foreign subsidiaries, the *précompte* is charged at $33 \frac{1}{3}$ percent.

This system requires French companies to supply, the segregate income that is liable to the full rate of corporation tax from other income; the latter income is liable to *précompte* on distribution. However, since the level of tax under the *précompte* depends on how much tax an item of profit has already borne, it is necessary to keep detailed accounting records of different forms of profit and their tax treatment. In order to minimise the liability to the *précompte* French companies tend to pay dividends out of fully taxed profits before drawing on other profits. The system permits companies to do this. Dividends are deemed to be paid from profits in the following order:

1. Profits of the preceding accounting year subject to the full corporation tax rate
2. Fully taxed profits of the previous four accounting years, in any order, however FIFO³⁷ is generally more advantageous
3. Profits, which have not been fully taxed under the French corporation tax, in any order at the discretion of the taxpayer. However, parent companies may redistribute dividends received from their subsidiaries in any order.

Dividends and other ordinary income distributions may qualify for the participation exemption if the recipient is a parent company. To qualify the parent company must be an entity that is liable for corporate income tax at the standard rate and must hold a minimum of 10 percent of the share capital of the subsidiary at the time of distribution. Dividend paid to foreign affiliates by French companies subject to corporate tax are subject to a 25 percent withholding tax. Depending on treaty provisions, recipients may be entitled to the *Avoir Fiscal*. Dividends paid to a parent company located in the European Union are exempt from withholding tax provided the parent company has held at least 25 percent of the distributing company for two years.

For individual income tax is normally an overall tax imposed on the entire income, i.e. all income is aggregated, regardless of its origin, to determine an overall net income to which a single tax rate applies.³⁸ This rate follows a progressive income brackets up to a maximum rate of 56.8 percent in 1997 (this rate is reduced to 53.25 percent by 2001). The tax rate takes into account the family coefficient³⁹ and the computation method of income tax goes together with many other provisions allowing for highly personalised taxation. Moreover, certain types of income and capital gains derived from securities are subject to proportional tax levies. The authorities compute income tax on the basis of the amounts declared by the taxpayer who must file a tax return reporting the total income received the previous year by the taxpayer. Although the rate was simplified recently, computation of income tax remains relatively complex given the methods implemented to take into account the taxpayer's personal situation. Such personalisation of tax is particularly expressed in the use of the "*quotient familial technique*" (income

³⁷ First In First Out

³⁸ See Appendix 3.3 for corporation, income and capital gains taxation rates as well as the *Avoir Fiscal* rates.

³⁹ Each household is assigned a family coefficient of taxation rate, which reduces the tax liability according for example, the number of children in the family.

splitting system) on the one hand and the attribution of tax reductions to taxpayers in respect of some of their personal expenses on the other hand.

Since its inception in 1945, the social security system has been financed mostly from contributions levied on earned income. In order to remedy the problem of financing social security, the authorities were induced to enlarge the spectrum of traditional ways (e.g. higher social security contributions) by enacting supplementary levies in the form of taxes. The best example is the *Generalised Social Contribution*, (“*Contribution Sociale Généralisée*”), was introduced in February 1991, which was a new flat-rate tax on income, and applies to labour income as well as capital gains, dividends and interest.

The corporate income tax is proportional to the profits of the companies, and the other important taxes like Value Added Tax, the property tax, and the business tax, which are not linked to the income of the taxpayer. The only progressive levies are the personal income tax, the gift and inheritance taxes and the wealth tax, but the share of the latter in total tax receipts is too low and their bases too narrow to allow them to play a significant role in the redistribution of income and wealth. The top rate of personal income tax was to be reduced from 56 percent to 52 percent in 1997 with the intention of reducing it to 47 percent in 2001. However, the Socialist Government elected in June 1997 set the top rate at 54 percent.

Capital Gains are subject to tax under various provisions. In some cases, they are included in taxable income, either wholly or partially. In other cases, they are subject to a separate flat-rate tax and excluded from the tax base. Capital gains from the sales of shares and bonds are taxed at a rate of 16 percent plus a 3.9 percent social contribution. . As of January 1, 1999 capital gains are generally taxable as ordinary income, regardless of whether assets have been held for more or less than two years.

As mentioned above, the imputation credit is basically a refund of the underlying corporate tax; therefore companies distributing profits that have not borne corporate tax at the full rate⁴⁰ must pay an equalisation tax (*précompte*), which is equal to the attached imputation credit. Like the imputation credit, the equalisation tax due on distributions to corporate shareholders is equal to 40 percent of the dividends or 50 percent if the dividends qualify for the participation exemption. The 50 percent equalisation tax is also due on the distribution of profits realised more than 5 years earlier even if corporate tax was fully imposed upon the realisation. Finally the equalisation tax is due on the distribution of profits that have been subject to corporate tax, but at reduced rate.⁴¹ In this case, however, the equalisation tax is deemed to be a substitute corporate tax; its amount is limited to the difference between the tax due at the standard rate and the tax already paid at the reduced rate.

For the purpose of calculating the tax discrimination variable in France, I firstly consider the case where profits are retained within the company and reinvested. In this case, the company's after tax profits would

⁴⁰ For example, dividends qualifying for participation exemption

⁴¹ For example, distribution of long-term capital gains

be equal to $(1-t_c)$. Investors would pay capital gains of $(1-t_c)z$, where z is the individuals capital gains tax rate. The total tax burden on capital gains would be the sum of corporate tax paid and the individual tax paid which is equal to $(1-z)(1-t_c)$. Secondly, in the case where the company's profits are distributed to the shareholders, the shareholders would generate $(1-t_c) m$. Considering that the Avoir Fiscal, is equal to 40% of the corporation tax liability; the tax discrimination variable can be expressed as:

$$TD_{FR} = \frac{(1 - m)}{(1 - AF)(1 - z)} \quad (10)$$

Table 2.8 shows the tax discrimination variable, calculated using the basic taxation rates in France for the Period 1986-2002 without taking into consideration any additional corporation or income taxes imposed through the years.⁴²

TABLE 2.8 TAX DISCRIMINATION VARIABLE IN FRANCE

Table shows the Tax Discrimination Variable in France for the period 1986 to 2002 calculated using the taxation rates provided in Appendix 3.3.

YEAR	TD		
	Higher	Basic (35% Tax Bracket)	Tax-Exempt
1986-92	0.674	1.014	1.250
January 1993-97	0.899	1.352	1.667
November 1997-98	0.957	1.352	1.667
January 1999-02	1.667	1.896	1.667

The tax discrimination variable observed in France differs from the other two countries under consideration in the sense that the French full imputation system, although reformed through the years, results in the preference of dividends over capital gains for all classes of investors except for higher tax-bracket. At the beginning of the sample period, the higher tax payers in France faced the highest taxation on dividends relative to capital gains.

The **1993 Taxation Reforms**, which effectively changed the partial imputation system into a full imputation system, had an impact on all classes of investors. The tax discrimination variable for the higher taxpayers was increased by 22.5 percent, closer to unity, which indicates that the preferential taxation of capital gains was eliminated. Moreover, the incentive of the other two classes of investors in France to reward higher dividend payout companies was also increased. The **taxation reform in November 1997** decreased the preferential taxation treatment of capital gains over dividends for the higher taxpayers while the **1999 Taxation Reform** had a major impact on both the higher and basic taxation payers. The 1999 capital gains tax reform in France resulted in a significant increase, above unity, of the tax discrimination variable for the higher taxpayers, consequently this class of investors

faced higher taxation on capital gains than on dividends. The preferential taxation of dividends for the basic shareholders was also increased while the reform had no impact on the tax exempt investors.

In sum, this analysis based on standard rates suggests that the French tax system has always favoured dividends received by basic-taxpayers and tax-exempt investors. The higher tax brackets are expected to prefer dividends over the capital gains only in recent years.

2.4.4 THE IMPUTATION TAXATION SYSTEM IN ITALY

The Italian system underwent a process of rationalisation, simplification and harmonisation with the typical European Tax System, after the enactment of the basic tax reform of 1973-1974, and through the 1980s until the end of the 1990s. The Italian tax system is a complex set of rules and regimes for different classes of stocks and bonds. Since 1977, taxes on dividends have been based on the full imputation system, which allows stockholders to obtain a credit on the dividend tax payment. The tax credit has ranged from one-third of total cash dividends received to 56.25 percent (58.73 percent after 1998), which permits total recovery of the corporate national tax. In general, the Italian taxation system is characterised by the light taxation on dividends and capital gains compared to other European countries.

Appendix 4.4 presents an overview of the taxation of corporate profits and the Italian tax-credit mechanism, both for individual investors with different personal tax brackets and for corporate and mutual fund equity holders. Michaely and Murgia (1995) use a simple stylised example to demonstrate the Italian Tax Credit on dividends, considering a corporation that pays all profit as dividends and analysing the tax effect, including the imputation system on different claimholders. Withholding taxes are 10 percent of the dividend paid and personal taxes are calculated as a percentage of the sum of the cash dividends plus the recovery (through the imputation system) of the national taxes paid by the corporation. The Italian tax credit mechanism for individual investor with different tax brackets and for corporate and mutual fund equity holders is also illustrated. Dividends must be included in the taxpayers' tax returns. According to the Imputation System in Italy, investors in a tax bracket lower than 36 percent are entitled to a cash rebate from the tax authorities. To avoid double taxation, a tax credit is allowed for taxes paid by corporations. The dividend tax credit or relief is calculated as follows. An individual investor with a marginal tax rate of 20 percent who receives a cash dividend net of withholding tax of 48.27 units is entitled to a tax refund of 18.77 units therefore the actual dividend received is equal to 67.04 units. For corporate traders, capital gains are taxed as ordinary income and taxes on dividends are fully recovered as illustrated in the example. Finally, mutual funds suffer a 10 percent withholding tax on dividends, which is not refundable and is considered as a final tax.

In the Italian market, companies issue different types of equity securities. Firstly, the *Common Stocks and Preferred Stocks* are registered stocks, that is, the shareholder's name is listed in the company

⁴² It has been proved difficult to calculate the effective taxation rates in the countries under consideration. However, this constitutes a subject of further research.

shareholders' book and provided to the tax authorities. Secondly, *Convertible Savings and Non-convertible Savings* are bearer stocks, the holders of which can maintain their anonymity. These shares do not provide any voting rights but they provide a privilege for dividends and for assets in liquidation. Savings stocks have the right to receive a yearly dividend of no less than 5 percent of par value or the common stock dividend plus 2 percent of par value, whichever is greater. However, in some cases the dividend payment to the holders of savings stocks exceeds this constant. The most important feature of the savings stocks is the homogeneous taxation of dividends across investors.

Italian companies are subject to *IRPEG (Imposta Sul Reddito Delle Persone Giuridiche)*. This is the corporation income tax on all income earned in Italy, by a corporation (S.p.a). The corporation tax rate⁴³ has been equal to 36 percent, while in 1995 moved up by one percentage point, to 37 percent. To foster company capitalisation, *Dual Income Tax (DIT)* has been introduced in 1997. This carries a reduction (from 37 percent to 19 percent) for part of corporate gains and applies in the event of any increase in net assets throughout the year in the form of capital conferment by partners or of undistributed dividend reserves. *ILOR (Imposta Locale Sui Redditi)* is a local Income tax, on profits levied at a uniform national rate of 16.2 percent, and it is non-deductible from the corporate tax base.

In 1993 a provision was added, in order to avoid the tax subsidy to dividend recipients. Since the dividend tax credit applied to all dividends received and since there were numerous corporate tax reductions,⁴⁴ dividends that come from such favoured sources were liable to 9/16 tax credit. As it is impossible, in practice, to trace the source of dividend income, an additional corporate tax was introduced namely the "*Balancing Tax*" (*Imposta di Conguaglio*). This tax is paid by a company in proportion to the amount of distributed income, which exceeds the net income subject to full taxation, and therefore comes by definition from tax-favoured income. As a result of integration, the corporation income tax as such is a tax on undistributed taxable profits.

Equalisation tax has been abolished effective from January 1, 1998. The local ILOR has been replaced by a new tax, *IRAP (Imposta Regionale sulle Attivita' Produttive)*, a tax levied by the regional administrations with a coefficient of 4.25 percent. The IRAP is related to the incremental income while IRPEG is related to the net operating income. The new tax system provided that resident shareholders receiving dividends from a resident company were entitled to a tax credit equal to 58.73 percent under certain conditions and to the extent that income taxes effectively paid by the company. The effective income tax rate paid by Italian corporations is not always equal to 37 percent (IRPEG rate), as companies may benefit from tax incentives such as dual income tax and reduced taxation for inter-company dividends and for investments in depressed zones, amongst others. As a consequence, after the abolition of the Equalisation Tax, two separate baskets "A" and "B", must be formed in preparing the company's income tax return and calculating the tax credit of the dividends received.

⁴³ A full list of the relevant Italian Taxation Rates for the period 1986 to 2002 is provided in Appendix 3.4.

⁴⁴ For example, reduced rates on income originating from South Italy

Tax credit Basket A consists of the amount of income tax actually paid by the company that distributed the dividends. The rationale of this provision is to grant full imputation tax credit to the Italian resident shareholder but only to the extent that corporation tax has been actually paid by the distributing company. Tax credit Basket B is the “*Figurative Tax*” corresponding to the receipt of tax-free profits distributed as dividends. The so-called “*Limited Tax Credit*” is granted to any Italian resident shareholder. This “*Limitation*” implies that the shareholder cannot obtain any tax reimbursement and/or cannot transfer the tax credit to any other group company.

In February 1999 new rules have been introduced with regard to payments of dividends. An ex-dividend date was introduced, prior to the payment day. Shares traded after the dividend date, are quoted ex-dividend and the settlement takes place on a cum-dividend basis up to the date of the actual payment. Each issuer will have to set a date for dividend payments on the fifth working day following the established ex-dividend day, *Data Stacco*, as set by the Italian Stock Exchange Calendar. Shares listed in the official market, the payment date of which is set, are negotiated “ex” (i.e. minus rights to receive the dividend), five working days before the date of the actual payment. Shares traded after the ex-dividend day, are quoted ex-dividend; settlements nevertheless take place on a cum-dividend basis (i.e. plus the rights to receive the dividend) up to the date of the actual payment.

On the payment date, common stock holders, both individuals and corporations receive a net cash dividend of 90 percent, since 10 percent is withheld at the source as partial tax payment. *Investors subsequently calculate their tax liability by grossing up dividends with the tax credit.* Personal taxes, distinct from corporate taxes, are progressive, currently ranging from 18.5 to 45.5 percent.

Individual Income tax *IRPEF (Imposta Sul Reddito Delle Persone Fisiche)* is the income tax on individuals, whether resident or non-resident. The tax is applied on the aggregate income, which for residents include all income earned and for non-residents include solely income earned in Italy. IRPEF is, but only in principle, a comprehensive income tax. Subtracting from total gross income a number of income deductions derives total taxable income. Tax rates from the rate schedule are then applied to get gross tax liability. From the gross tax liability a number of tax, or personal credits or deductions are subtracted to get the net tax liability, which is the amount finally due by the taxpayers.

Resident shareholders are taxed on the grossed-up income, receiving both the dividend tax credit under the imputation system and a credit of 10 percent withholding tax on the dividend payment. In 1998 the dividend tax credit rate was increased by one percentage point, to 58.73 percent. The dividend tax credit can be set against the tax liability arising from the dividend receipt, against the tax liability arising from other income, carried forward or refunded. Dividends form part of the taxable income of Italian companies, but they can use the dividend tax credit to reduce the corporation tax liability to almost zero as the dividend tax credit rate is 36%, whereas the full corporation tax rate is 37%. Companies are also

entitled to a refund where there is an excess dividend tax credit. Dividends tax credits are only available where dividends form part of the taxable income of the shareholder. This is not true of tax-exempt entities, which therefore cannot claim the dividend tax credit or receive a refund of the dividend withholding tax.

Formerly institutions and companies paid capital gains tax at the normal corporate rate, but a new two-tiered system of taxation of investment income and capital gains is in force, since 1 July 1998, under which the level of taxation depends upon whether or not an investment is classified as a substantial holding. For listed companies a substantial holding is defined as more than 2 percent of the voting rights or more than 5 percent of the capital, and for unlisted companies is more than 20 percent of the voting rights or 25 percent of the capital. Capital gains accrued by private resident investors from substantial holdings are taxed at 27 percent, while gains on all other equity holdings are taxed at 12.5 percent. Non-resident investors are exempt from capital gains taxation and non-substantial holdings and other income that would normally be subject to the 12.5 percent rate.

Generally, in the Italian tax system there are separate tax schedules for dividends on common and saving stocks; capital gains for individual investors are not taxed and trading is prohibited for brokers own account (that means that brokers have no role in setting the ex-dividend day); and that there is a fixed tax on mutual funds' holdings and their 10 percent tax on common stock dividends and 15 percent tax on savings stock dividends.

For the purpose of calculating the Italian tax discrimination variable I follow Dessy (1994)⁴⁵ who analyses the impact of the tax reforms realised in Italy during the nineties. Dessy assumes that the corporate tax rate is equal to $\tau_c = \tau_g + \tau_L$, where τ_g is the notional tax rate (36 percent) on corporate income (IRPEG) and τ_L is the local tax-rate (16.2 percent) on corporate income (ILOR). The total tax-cost related to distributed dividends can be defined as:

$$t_d = \tau_c (1 + \alpha) D \quad (11)$$

Where, τ_c is the marginal corporate tax rate and $D = \lambda(\text{NOI} - t_c)$ is the net dividend. NOI represents the net operating income before taxes and $\alpha = \tau_g / (1 - \tau_g)$ is the coefficient used to compute the tax-credit recognised on distributed dividends. In Italy the tax credit is equal to

$$\alpha = \frac{\tau_g}{(1 - \tau_g)} = \frac{0.36}{(1 - 0.36)} = \frac{9}{16} \quad (12)$$

⁴⁵ Dessy A; (1994); *"Imposte, Politiche Finanziarie e Valore Azionario"*, Egea Milano. Paper is discussed in

The capital gains are subject to a nominal tax rate, z , of 25 percent unless the underlying asset remains into the investors' portfolio of a period longer than 15 years. The capital gains tax is equal to the sum of the taxes suffered at the corporation and individual level. Therefore the total capital gains taxation burden is equal to $(1-z)(1-t_c)$. The calculations of the tax discrimination variable assume that assets do not qualify for capital gains tax exception.

From the above analysis the tax discrimination variable in Italy can be derived. The Italian imputation credit is $s=36\%$, and the higher band personal income tax is $m=45.5\%$. When the holding is substantial capital gains tax rate z equals to 27% and when the shareholding qualifies for no-relevant participation capital gains tax is lowered to 12.5%. Therefore, when the holding is substantial the higher taxpayer faces a tax discrimination equal to:

$$TD = \frac{(1-m)}{(1-z)(1-s)} \quad (13)$$

However, after the 1998 Taxation Reform Act, and the introduction of a two-tier system the tax discrimination variable should be equal to:

$$TD = \frac{(1-m)(1-t_{IRPEG})}{(1-z)(1-s)(1-t_{DIT})} \quad (14)$$

Where, t_{IRPEG} is the corporation tax rate and t_{DIT} is the dual income tax rate. Table 2.9 shows the tax discrimination variable for different classes of investors, for the period 1986-2002. For capital gains tax purposes, calculations assume that the participation is "Qualified".

TABLE 2.9: THE TAX DISCRIMINATION VARIABLE IN ITALY

Table shows the Tax Discrimination Variable in Italy for the period 1986 to 2002 calculated using the taxation rates provided in Appendix 3.4.

YEAR	HIGHER	BASIC (36% Bracket)	LOWER	TAX-EXEMPT
1986-March 91	1.4628	1.0925	1.0925	1
April 1991-June 95	0.9557	0.9760	1.3110	1
July 1995-January 99	0.9408	0.9413	1.2836	1
February 1999-02	1.4070	1.2753	1.5630	1

At the beginning of our sample period, shareholders in Italy were in favour of high dividend payout with the exemption of the tax-exempt shareholders who were always indifferent between dividends and capital gains. The lower class investors' tax discrimination variable has always been greater than unity, however the dividend preference was increased significantly after the 1991 and 1998 taxation reforms. The higher and basic classes of investors under consideration were significantly influenced by the tax reforms in

1991 and 1998. Results illustrate that the two reforms had the opposite effects on the preferences of the shareholders. After 1991 until 1998 shareholders were in favour of capital gains as dividends taxation burden was higher. This was reversed in 1998, as all classes of investors in Italy suffer higher taxation when profits are distributed in the form of capital gains, consequently higher dividend payout policy is rewarded. In contrast the increase 1995 IRPEG of one percentage point, had the effect of reducing the total income available to the shareholders. Results imply that the change of IRPEG had not a significant impact on the difference between the dividend and capital gains tax burden on the shareholders. After 1997 the tax credit was no longer a fixed percentage but it was set proportionate to the tax that the company effectively pay on profits distributed. For reasons of simplicity, calculations assume that dividends are distributed out of earnings; therefore corporation tax is considered to be levied at the full rate.

In sum, unlike previous countries analysed, the tax discrimination variable in Italy is much smaller for basic and higher tax-payers indicating a lower preference for dividends. Tax-exempt investors are indifferent between dividends and capital gains throughout the sample period.

2.5 LITERATURE REVIEW: THE TAXATION EFFECT ON THE DIVIDEND POLICY OF THE FIRM

2.5.1 THEORIES ON THE IMPACT OF TAXES ON DIVIDENDS

The impact of taxes on dividends has long been a controversy in the literature; however, evidence is still inconclusive and mixed⁴⁶. There are mainly three prevailing views of how dividend taxes levied on shareholders may affect dividend policy, corporate investment, financial policy, and share values of the firm⁴⁷. Both the new and the traditional views of dividend taxation begin with the premise that dividends are taxed at a higher rate than capital gains,⁴⁸ but still they are two very different views⁴⁹ as to the role of taxes on dividend payout decisions have quite different policy implications for evaluating the tax systems. Thirdly, the tax irrelevance view concerns the tax characteristics of the marginal investors. It rejects the presumption of the new and traditional views that the tax rate on dividends needs to be higher than the tax rate on capital gains for the marginal investor.

In detail, the “*Traditional View*” supports that dividend taxation is an additional cost on corporate profits and this is the implicit view of many proponents of tax integration⁵⁰. Despite the heavier tax burden on dividends than in capital gains, firms are rewarded for paying dividends however, the reason for this reward is not clear. One rationale is the managerial signalling perspective. Therefore, despite of the shareholders’ higher tax liability, firms can be indifferent to marginal changes in their dividend

⁴⁶ See Allen and Michaely (1995), Poterba and Summers (1985) and Lease et al (1999) for a full discussion.

⁴⁷ See Poterba (1987), Poterba and Summers (1983 and 1985), Zordow (1991) and McKenzie and Thompson (1996)

⁴⁸ The key distinction between the new and the traditional views concerns the marginal source of equity funds used to finance incremental investment, in particular whether the marginal source of equity is retained earnings (new view), new share issues, or some combination of both (traditional view).

⁴⁹ See Gerardi, Graetz and Rosen (1990) and Zodrow (1991)

⁵⁰ Poterba and Summers (1985)

payments. This view suggests that the relevant tax burden for firms considering marginal investments is the total tax levied on investment returns at both the corporate and personal level. Dividend tax reductions both raise share values and provide incentives for capital investment, because they cause the required pre-tax return to decrease. Dividend changes would therefore affect the economy's long run capital intensity. In other words, the *tax-penalty hypothesis*, as it is also known, posits that the firm value should decrease as the dividend payout ratio and dividend tax rates increase, because the tax rate on dividends is greater than the accrual-equivalent tax rate on capital gains, and paying out dividends imposes the high tax rate of dividends on shareholders (Brennan, 1970). If equity prices decrease in dividend payouts, then firms increase the cost of their equity capital whenever they distribute dividends.

The "*Tax Irrelevance View*" supporters argue that taxes have no influence on dividends because shareholders can avoid dividend taxes; consequently, contrary to naïve expectations, dividend-paying firms are not penalized in the market place. The tax irrelevance view concerns the tax characteristics of the marginal investors and rejects the presumption of the traditional view that the effective tax rate on dividends need to be higher than the effective tax rate on capital gains for the marginal investor. This view was first proposed by Miler and Scholes (1978, 1982) who claim that the shareholders that matter are the tax-exempt investors, and so face no bias either for or against dividend payments in the classical system. They propose this in the US context and it is based firstly on the notion that marginal shareholders are tax-exempt and secondly on the fact that the tax discrimination parameter, which determines the relative tax advantage of dividend income compared to capital gains is equal to unity. However, in the UK for example, where tax-exempt investors (majority shareholders) have a preference for dividends, this view has much less appeal.⁵¹ Moreover, changes in dividend tax rates or dividend policies should neither affect the total value of any firm, its investment decisions, the share prices or the economy's long-run capital stock. If this view is correct then according to Poterba and Summers (1985) there is no dividend puzzle.

The proponents of "*Tax Capitalisation View*" first developed by King (1977), Auerbach (1979), Bradford (1981) argue that dividend taxation increase would result in an immediate decrease of share prices, however this would have no impact on the firm's marginal incentive to invest. This in turn implies that any integration scheme that reduces or eliminates dividend taxes, or allows firms a partial or full deduction for dividends paid, would result in huge windfall gains to existing shareholders without altering corporate investment incentives. A central empirical implication of dividend tax capitalisation view is that the market value of the firm generally should not equal the market value of the assets within the firm, because the market value of inside assets does not reflect the shareholders' future dividend taxes on undistributed profits. Similarly, according to Zadrow (1991) the "*New View*" supports that taxes have no impact effect on dividends because dividends are simply the residual after investments have been financed from post-corporate tax earnings, and neither investments nor post-corporate tax earnings are affected by dividend taxes. The premise of this view is that the only way for firms to provide returns to

investors is through dividend payments. The market value of corporate assets is therefore equal to the present value of the after-tax dividends which firms are expected to pay. The future dividend taxes are capitalised in share prices. As a result, shareholders are indifferent between dividend and retaining earnings decisions.

Poterba and Summers (1985) use UK data, which because of several major dividend tax reforms provides ideal experiment to test the three competing hypotheses, aforementioned, in order to examine how dividends taxes affect decisions by firms and their shareholders. Evidence supported that dividend taxes result in the double taxation of corporate income, consistent with the traditional view. Dividend taxes reduce corporate investment and exacerbate distortions in the intersectional and intertemporal allocation of capital. On the other hand, they rejected both the tax capitalisation view that dividend taxes are non-distortionary lump sum taxes on the owners of corporate capital and the hypothesis that firms pay dividends because marginal investors are effectively untaxed.

Harris, Hubbard and Kemsley (1999) test the prediction that dividend taxes result in a lower value for retained earnings than for paid-in equity, after controlling for the predictable influence of dividend taxes on the valuation of earnings. Tests are conducted for five US tax regimes and the dividend taxation in Australia, France, Germany, Japan and two different UK tax regimes. They firstly, find evidence consistent with the capitalisation of future dividend taxes in retained earnings. Secondly, they conclude that the differences in dividend tax rates across US tax regimes are associated with predictable differences in the implied tax discount for retained earnings. Thirdly, evidence shows that the cross-country variation in dividend tax rates is associated with predictable variation in the implied tax discount. Furthermore, Harris et al (1999) note that the difference in dividend tax rates across two different tax regimes in the UK is associated with predictable differences in the estimated value discount. In a later study Harris et al (2001) document similar results indicating that at least a substantial portion of the dividend tax is capitalised in equity values. This evidence was not found to be inconsistent with either the signalling or agency factors in firm decisions.

Collins and Kemsley (2000) extend the Harris et al (1999) model - that takes a residual-income approach and provide evidence that future dividend taxes reduce the valuation of retained earnings, which are taxable as dividends upon distribution to shareholders - by adding capital gains taxes to the model, and by directly examining the influence of dividend taxes on current earnings as well as on retained earnings for the period 1975 to 1997. The new model is subject to three primary preconditions⁵²: firstly, both capital gains and dividend taxes reduce investors' implicit valuation of the reinvested portion of earnings; secondly, dividend taxes reduce the valuation of the portion of earnings distributed as dividends, but capital gains taxes do not, and; thirdly, dividend taxes reduce the valuation of existing retained-earnings

⁵¹ See Lasfer (1995, 1996)

⁵² These predictions depend critically on the assumption that firms will eventually payout earnings as taxable dividends and it is crucial to examine these predictions because firms sometimes distribute accumulated earnings to shareholders through non-dividend means (e.g. share repurchases).

equity, but again capital gains taxes do not. They find a negative relation between (i) the valuation of dividends and taxes on dividends but not tax rates on capital gains and (ii) investors' valuation of retained-earnings equity and dividend tax rates, but not capital gains tax rates. This is to suggest that investors capitalise both dividend and capital gains taxes into share prices and the magnitudes of the estimated coefficients for reinvested earnings and dividends suggest that investors do not merely capitalise a weighted average between capital gains and dividend tax rates into prices, as if future earnings will be subject to one type of tax or the other. Rather, their evidence is generally consistent with the hypothesis that capital gains taxes represent a third layer of taxes that investors incur in addition to corporate and full dividend taxes, although the possibility that dividend tax capitalization may be less than complete. Finally, they argue that (i) raising capital gains and/or dividend tax rates decreases share prices and thus imposes a tax burden on existing shareholders and (ii) when fully accounting for the effects of implicit dividend taxes, dividend payouts may provide a net tax benefit for shareholders, rather than a net tax penalty as commonly assumed.

In a recent study, Hubbard, Kemsley and Nissim (2001) employ time-series variation in tax rates and both cross-sectional and time-series variation in dividend payouts to empirically examine the implications of the three primary shareholder-tax hypotheses in the US. Results show that the market value of equity decreases with both dividend and capital gains tax rates increases, but the price effects of dividend taxes are not a function of current dividend policy. This provides evidence to rejected the tax-penalty hypothesis that the price effects of dividend taxes are a function of payouts. Moreover, results show that the firm value decreases in statutory capital gains taxes over time; hence evidence is more consistent with the tax-capitalisation hypothesis. Overall, they suggest that shareholder taxes may drive a potentially large wedge between costs of using internal versus external equity capital. In addition Hubbard et al (1999) suggest that because the firm valuation effects of dividend taxes appear to be independent of current dividend policy, firms could pay out dividends whenever they exhaust profitable investment opportunities without incurring tax penalties.

2.5.2 THE CLIENTELE EFFECT VIEW

The "*Clientele Effect*" proposed by Miller and Modigliani (1961), can be defined as the case when a firm sets a dividend payout policy, which tends to attract a "clientele" consisting of those investors who are in favour of the firm's particular dividend policy. The firm would therefore, attract those shareholders whose preferences are with respect to the dividend payment pattern and stability exhibited by the firm. In effect the firm's dividend policy is independent of the tax position of its shareholders and, for a given set of dividend policies, investors are expected to hold portfolios chosen on the basis of their after-tax rates of return. Therefore, according to Miller and Modigliani (191 clientele effect hypothesis, taxes have no effect on dividends because companies do not really consider the tax consequences for their shareholders, simply because different shareholders face different tax considerations and hold portfolios which best fit their tax position. This refers to the tendency of investors to buy stocks in firms, which have dividend policies that meet their preferences for *high*, *low* or *no* dividends.

Petit (1977) tests for dividend clientele effects by examining the portfolio positions of approximately 914 individual accounts. He argues that stocks with low dividend yields are preferred by investors with high income, by younger investors, by investors whose ordinary and capital gains tax rates differ substantially, and by investors whose portfolios have high systematic risk. Petit finds evidence consistent with the clientele effect, as a significant portion of the observed cross-sectional variation in individual portfolio dividend yields can be explained by the data. However, the study finds no evidence to support that the market price of a security is determined by the dividend policy followed by the firm. Lewellen, Stanley, Lease and Schlarbaum (1978) follow Pettit (1977) and use the same data, but reach different conclusions. They run a multiple regression to explain the dividend yields of investor portfolios as a function of various investor characteristics and suggest only a very weak dividend clientele effect.

More recently, Allen, Bernardo and Welch (1998) note that institutional investors are relatively less taxed than individual investors, and that this induces dividend clientele effects. They argue that these clientele effects are the very reason for the presence of dividends, because institutions have a relative advantage in monitoring firms or in detecting firm quality. Firms paying dividends attract relatively more institutions and perform better. They find evidence consistent with some documented regularities, such as the reluctance of firms to cut dividends, and offer novel empirical implications, that is the tax difference between institutions and retail investors that determines dividend payments, not the absolute tax payments.

In contrast with previous studies that assume a single marginal clientele, Williams (2001) models equilibrium in a financial market with multiple tax clienteles and multiple assets in order to investigate how the interaction of the former can influence relative returns of the latter (implicit taxes). Generally, results show that the implicit tax on an asset is often driven by a mixture of tax characteristics of different clienteles, including clienteles that do not own the asset in question, as well as tax characteristics that are unrelated to the asset, such as capital gains taxes for an interest-generating bond. More precisely, Williams first concludes that implicit taxes on equity exhibit an inverted "trapezoid" shape as a function of dividend yield, cross-sectionally, where only the lowest and highest yielding stocks bear any implicit tax; secondly, a market-wide reduction in dividend yields is found to result in lower implicit taxes on low-yield stocks and; thirdly, implicit taxes on municipal bonds involve a mixture of dividend and capital gains tax rates faced by the marginal clientele who can be either individuals or corporations or both. Finally, Williams criticises previous studies relating dividend yields and stock returns, by indicating that studies generally test for a linear association whereas the model is found to be a non-monotonic one which implies that the time series relationship between dividend yield and return is far different from the cross-sectional one.

In contrast, Alltizer and Hamil (2001) note that the differential taxation of dividends and capital gains will create investor clienteles because investors are assumed to acquire an investment portfolio with an

after-tax rate of return consistent with the portfolio's risk. Thus, a change in how investment gains are taxed may then change investors' demand for securities with differing tax exposure; and firms may also alter their dividend policy in response to tax changes. They argue that the 1986 Tax Reform Act (TRA) in the US offers an opportunity to test for tax clienteles because it had a dramatic effect on the tax rates applicable to both dividend and capital gain income, with rates increasing for the latter and decreasing for the former. In this light they hypothesise that high dividend yield firms will outperform low dividend yield firms during the periods surrounding the TRA. Results support the existence of dividend tax clienteles and provide additional evidence that investors adjust their investment decisions in response to external factors affecting after-tax returns. The market response to the TRA changes produced significant abnormal returns for high-dividend yielding firms relative to low-dividend yielding firms and this effect was concentrated in larger firms. They argue that studies, which reject the clientele hypothesis, are confounded by failure to account for size and the beta shifts, thus, may be introducing systematic bias.

2.5.3 THE TAXATION IMPACT ON THE DIVIDEND POLICY AND SHARE VALUATION OF THE FIRM

The question of sensitivity of dividends to taxes remains an empirical puzzle with major and multiple contradictions in the literature of dividend taxation. Consideration of the impact of taxes on dividends is complicated by the lack of convincing theoretical explanation of why firms pay dividends. It is not that there are no theoretical explanations for why firms pay dividends, but rather there are several explanations with little more general agreement or evidence as to which models are more appropriate. Literature analysing the impact of taxation on dividends can be categorised into studies investigating,

- The relationship between long-term stock returns and dividend yield.
- The behaviour of share prices when shares are quoted ex-dividend.

2.5.3.1 DIVIDEND TAXATION AND THE RELATIONSHIP BETWEEN LONG-TERM STOCK RETURNS AND DIVIDEND YIELD

The relation between dividend yields and common stock returns has received considerable attention. Much of this research has been conducted as tests of an after-tax Capital Asset Pricing Model (CAPM), which predicts that the positive relation between dividend yields and stock returns is induced by the disparity in the tax rates for dividend yields and capital gains. The central question is whether stocks with higher anticipated dividend yields earn higher risk-adjusted returns. There are two central competing hypotheses: the "*Tax-Effect Hypothesis*" and the "*Dividend Neutrality Hypothesis*".

The **Tax-Effect Hypothesis** proposed by Brennan (1970) predicts that investors receive higher before-tax, risk-adjusted returns on stocks with higher anticipated dividend yields to compensate for the historically higher taxation of dividend income relative to capital gains income. Brennan is the first to develop an After-Tax Capital Asset Pricing Model (CAPM), under the assumptions of unlimited borrowing and lending at the risk free rate of interest, unrestricted short sales and that a dollar dividends paid by corporations were assumed to be certain and known to investors

In equilibrium:

$$E(\tilde{R}_i - r_f) = b_0 \beta_i + c_0 (d_i - r_f) \quad (15)$$

Where, \tilde{R}_i is the before tax total rate of return on asset i , β_i is the systematic risk on asset i , d_i is the dividend yield on asset i , r_f is the risk free rate of interest and c_0 is a weighted average of the marginal tax rates of investors. Brennan (1970) notes that the structural parameters b_0 and c_0 in this pricing relationship are not dependent on the level of the dividend yield. The parameter c_0 is a weighted average of the investors' marginal tax rates, with the weights being proportional to the individuals' global risk tolerances at the optimum. It also has to be noted that tax effects exist if $c_0 > 0$. In this case, evidence of tax disadvantage of dividends exists. Brennan concludes that for any given level of risk, investors require a higher total return on a security with respect to its prospective dividend yield as long as the tax rate levied on dividends is higher than capital gains.

However, empirical tests of the above equation failed to derive consistent conclusions. Black and Scholes (1974) express strong scepticism about the logic of the tax case against dividends. They begin their approach by stating that investors may require current income for consumption purposes. While selling part of their holdings is always an alternative, these transactions are costly and dividends may be the least costly way of providing the necessary income. Black and Scholes argue that investors weight the benefits of receiving dividends against the tax disadvantage. Thus, investors may prefer high and other lower dividend payouts. The results indicate that it is not possible to demonstrate that the expected returns on high yield common stocks differ from the expected returns on low yield common stocks either before or after taxes.

Black and Scholes (1974) propose the **Dividend-Neutrality Hypothesis** stating that if investors require higher returns for holding higher yield stocks, corporations would adjust their dividend policy to restrict the quantity of dividends paid, lower than their cost of capital, and increase their share price. Similarly, if investors require a lower return on high-yield stocks, value maximising firms would increase their dividend payouts to increase their share price. In equilibrium, value maximizing behaviour would lead to the aggregate supply of dividends that meets, but does not exceed, the aggregate investors' demand for dividend income that value dividends at least as highly as capital gains. As a result there would be no predictable relation between anticipated dividend yields and risk-adjusted stock returns. They find no statistically reliable link between a portfolio's monthly stock return and its long-run dividend yield. Black and Scholes (1974) test the Brennan (1970) hypothesis by adding a dividend payout term to an empirical version of the CAPM:

$$\tilde{R}_j = \gamma_0 + [\tilde{R}_m - \gamma_0] \beta_j + \gamma_1 (DY_j - DY_m) / DY_m + \varepsilon_j \quad (16)$$

Where: \tilde{R}_j is the rate of return on the j^{th} portfolio, γ_0 is an intercept term that should be equal to the risk-free rate, R_f , (according to the CAPM), \tilde{R}_m is the rate of return on the market portfolio, β_j is the systematic risk on the j^{th} portfolio, γ_1 is the dividend impact coefficient, DY_j is the dividend yield on the j^{th} portfolio, measured as the sum of dividends paid during the previous year divided by the end-of-year stock price, DY_m is the dividend yield on the market portfolio measured over the prior 12 Months and ϵ_j is the error term. The null hypothesis is that dividend payout has no impact on the required rate of return for securities and it will be rejected if the dividend yield coefficient is significantly different from zero. Results suggest that the impact coefficient, γ_1 , is not significantly different from zero, which means that the expected returns on high-yield securities are not significantly different from expected returns on low-yield securities, other things being equal. The two most influential empirical tests of the Brennan (1970) model⁵³ are the Black and Scholes (1974) and the Litzenberger and Ramaswamy (1979) models, which present conflicting results.

Litzenberger and Ramaswamy (1979) extend the Brennan (1970) model by incorporating wealth and income related constraints on borrowing along with a progressive tax scheme. The income related constraints on borrowing serve to limit the interest deductions that can be utilised by individuals, to the amount of dividend income their portfolios generate. The wealth related constraint on borrowing causes the expected return on a zero-beta portfolio (having a dividend yield equal to the riskless rate) to exceed the riskless rate of interest. The new equilibrium relationship, which indicates that the before tax expected return on a security is linearly related to its systematic risk and to its dividend yield, is given by:

$$E(\tilde{R}_i - r_f) = \alpha_1 + b_1\beta_i + c_1(d_i - r_f) \quad (17)$$

Where $\alpha_1 > 0$ is the risk premium on a zero beta portfolio that has a dividend yield equal to the risk-less rate, and reflects the presence of the margin constrain. The positive and non-linear relationship found between common stock returns and expected yields cannot be attributed directly to information effect. The results show that there is a strong positive relationship between before tax expected returns and dividend yields of common stock. The coefficient of the dividend yield variable is positive, less than unity, and significantly different from zero. The data indicates that for every dollar increase in return in the form of dividends, investors require an additional 23 cents in before tax return. Effectively, the hypothesis, whether the effect of dividend yield reverses itself in non-ex-dividend months, is rejected. Results indicate that the effect of a dividend payment on before tax expected returns is positive in both the ex-dividend month and in the subsequent non-ex-dividend months. Litzenberger and Ramaswamy classify a stock as having a positive dividend yield only during the ex-dividend months, while during any other month stocks have a zero dividend yield. They conclude that risk-adjusted returns are higher for

⁵³ Other studies discussing the Brennan (1970) model are Blume (1980), Gordon and Bradford (1980), Morgan (1982), Poterba and Summers (1984, 1985) and Rosenberg and Marathe (1979)

securities with higher dividend yield. They interpret their findings as a support for Brennan's pre-tax CAPM; this suggests that the positive dividend yield coefficient is evidence of tax effect. However, Litzenberger and Ramaswamy fail to determine whether the effect of dividend yields on common stock returns is attributed to taxes or some other overlooked factors. They suggest that the heavy taxation of dividend income relative to capital gains, result in investors demanding superior before-tax returns from stocks, which provide a large proportion of their total, return in the form of highly taxed dividends.

Blume (1980), extends the Sharpe-Lintner CAPM to include anticipate yield coefficient for a sample of NYSE stocks for the period 1936 to 1976. He tests two critical assumptions, firstly that the mean-zero disturbance is uncorrelated with the independent beta and dividend yield variables and secondly, that the values of α , b and c coefficients implicit in the investors' subjective distributions of stock returns, beta and dividend yield, did not vary in any systematic way from their true underlying values over the estimated period. He uses cross-sectional regressions estimated with quarterly returns stating that if there were a measure tax effect associated with dividend yield, the effect would differ as between months or periods in which a stock went ex-dividend and those in which did not and argued that since most dividend-paying stocks paid dividends quarterly, the use of quarterly returns should make the estimated regression less sensitive to any possible differential effects. Results show that for the portfolios grouped first on beta and then on dividend yield the average coefficients were 0.5232 (t-stat=2.07) and 0.0125 (t-stat=3.42) respectively. Results were virtually the same for the cross-sectional regressions using portfolios grouped first on dividend yield and then on beta. However, he notes that the significance of the dividend yield variable, varied over time. Overall the results show that within the context of Sharpe-Lintner CAPM the expected returns of individual assets are solely a function of their beta coefficients. Moreover the model was found too restrictive and concluded that dividend yield was acting as a proxy for some unspecified variable omitted from the model.

Miller and Scholes (1982) are the first to make the distinction between the short-run and long-run estimates of dividend yield. The rationale behind using a short-term definition of dividend yield (Litzenberger and Ramaswamy, 1979) is the tax-induced cum-ex-dividend day return differential. The difference is essential for indifference at the beginning of the ex-month, on the part of the shareholders, between buying or selling the shares cum- or ex-dividend. They argue that if short-term traders or tax-exempt institutions, who face the same taxation on dividends and capital gains dominate the equilibrium, then any tax-induced return differential will be eliminated. Empirical tests document a positive yield effect with both short-run and long-run (Blume, 1980) definitions of dividend yields. Miller and Scholes (1982) argue that yield-related effects associated with short-term definitions of dividend yield are due to information biases and not tax. They recognise that a yield effect might exist; nevertheless, since transaction costs may well keep the ex-dividend price from falling by the full amount of the dividend. They criticise Litzenberger and Ramaswamy (1979) for ignoring the potential effect of dividend omission announcements. The dividend omission announcement reduces the return of the zero dividend yield

group and tend to bias upward the dividend yield coefficient. Later Litzenberger and Ramaswamy (1982) use alternative measures of expected short-term dividend yield to address this criticism.

Keim (1985) examines the empirical relation between stock returns and long-run dividend yields investigating whether results can be attributed to tax effects or whether they are related to anomalous effects documented in the literature. Firstly, he focuses on the relation between raw returns and dividend yield, which in line with Blume (1980), found to be non-linear. Secondly, he finds that much of the relation is due to a significant non-linear relation between dividend yields and returns in the month of January, which is contradictive to the tax-effect hypothesis. Results provide evidence that the average returns of the dividend yield portfolios are non-linearly related with average yields. Zero dividend securities appear to have, on average, the largest returns equal to 1.78, while returns for dividend paying stocks tend to increase as dividend yield increased. The hypothesis that average returns are equal across portfolios is rejected (F-test=5.30). To analyse the relation between risk-adjusted returns and dividend yields abnormal returns are estimated using the on-period Sharpe-Lintner CAPM and found to be non-linear. Furthermore, Keim investigates the relation between yields and size, using the total market value of equity as a proxy for size and concluded that the peaks and troughs of the non-linear long-run yield function may be due to the location of small and large firms within the dividend yield continuum. Keim concludes that the results, at a minimum, suggest that the observed relation between long-run dividend yields and stock returns is not solely attributable to differences in marginal tax rates for dividends and capital gains.

In contrast with previous studies using CAPM-adjusted excess returns models, Christie (1990) uses a size-based expected returns model, to analyse the returns of zero-yield stocks benchmarked against the performance of dividend-paying stocks of similar market capitalisation for a number of NYSE firms with ordinary common shares outstanding for the period 1926 to 1985. Evidence contradictive to previous studies, reveals that zero-yield stocks earn significantly negative average excess returns, and represent a natural extension of the excess returns estimated across firms with positive anticipated yields. Christie also finds that the estimated β s of zero-dividend firms significantly exceed those of dividend paying firms. More precisely, Christie finds that zero dividend firms tend to incur an average loss of -0.41 per month in relation to dividend-paying firms of similar size. The negative average excess returns appear to occur in every size decile and every month other than January. Excluding January the number of size/month combinations yielding negative average excess returns dominate those with positive values by a factor approaching 4 to 1. In conclusion, Christie argues that the magnitude of the effect is too large to be a tax effect and might be better explained by the market overvaluing the prospects of non-dividend-paying stocks.

Chen, Grundy and Stambaugh (1990) show that tests relating returns to dividend yields are sensitive to the method of risk-return adjustment. For a sample of NYSE stocks, excluding zero-yield stocks, they use a pooled cross-section, time-series regression methodology to document a positive yield/return relation

when utilising a single stock market factor model. They conclude that the positive relation between returns and dividend yields is not robust to the inclusion of various controls for risk. Naranjo, Nimalendran and Ryngaert (1998) follow Chen et al (1990) and construct an ex-ante measure of long-run taxable dividend yield. They demonstrate that returns are positively related to that yield, even after controlling for risk factors from the asset pricing literature. They find no evidence to support that the size of the yield effect is related to the level of the implied tax rate, and hence the potential tax penalty from receiving taxable dividend income.

Erickson and Maydew (1998) use an event-study approach surrounding a change in tax regimes and also find no statistically significant difference in pre-tax rates of returns between high-dividend yield and low-dividend yield stocks. Using a different approach Fama and French (1998) examine the relationship between prices and dividends. After controlling for profitability, they hypothesise that the tax penalty on dividends should result in a negative price effect. Instead, they reveal a positive relationship between prices and dividends, concluding that the signalling effects of dividends must outweigh the tax effects.

Morgan and Thomas (1998) test the Taxed-Based Theory which, when applied to US data, predicts a positive relation between stock returns and anticipated dividend yields. However, in the UK where the tax system treats dividend income compared to capital gains relatively moderately than in the US, taxed-based models would predict a negative relation between anticipated dividend yields and risk adjusted stock returns. Low yielding stocks should generate higher returns than high yielding stocks, in order to compensate investors for the increased tax burden associated with capital gains. Zero yielding stocks should be required to produce the highest returns of all, since all their returns will be received by investors in the form of capital gains. The UK tax system as well as the other European imputation systems where dividends are treated more moderately than in the US provide a valuable opportunity to *assess the validity of the Taxation Hypothesis*.

Morgan and Thomas (1998) expand the methodology of Keim (1985) and examine the robustness of the relationship between dividend yields and returns. They find that the positive relationship persists even after controlling for systematic risk, the impact of zero-dividend stocks and the size effects. Dividend yield is defined by Keim (1985) as:

$$DY_t = \frac{1}{P_{t-13}} \left[\sum_{T=t-12}^{t-1} DIV_T \right] \quad (18)$$

Where, DIV_T is the Dividends paid in the period of 12 months and P_{t-13} is the stock's price at the beginning of the sample period. Evidence suggests that high yielding stocks earn positive risk adjusted returns, whereas low yielding stocks earn negative risk adjusted returns. Moreover, there is evidence of non-linearity in the performance of zero-dividend stocks. Overall, the results suggested a strong, positive

and non-seasonally-specific influence of dividend yield on risk-adjusted stock returns in the UK, which is in clear contrast to the predictions of the taxation hypothesis. In general, they find evidence to reject the tax-based explanation for the relation between dividend yields and stock returns, supporting that the UK tax structure is such that tax-based models of the dividend-yield return relation do not imply a positive correlation between dividend yields and returns, as is the case in the US.

However, Dempsey (2001) re-examines the theoretical basis of Morgan and Thomas (1998) conclusion and supports that the empirical evidence of market behaviour might be interpreted as consistent with investor tax-based rationality that capitalises the firm's earnings on an after-personal tax basis. He suggests that the results provide evidence consistent with the tax effect hypothesis as in Elton and Gruber (1970), Auerbach (1979) and Lasfer (1995, 1996). The implication is that as long as dividends represent the ultimate mechanism by which firm distributes earnings to its shareholders, a firm cannot add value by converting earnings into capital gains (which represent long-term dividends) as opposed to short-term dividends: adding value requires that the firm reinvests in projects with a positive net present value. Dempsey observes that the tax-rational relationship between a share's ex-dividend day return and its dividend yield may be either positive or negative depending on how the dividend yield is itself defined—gross or net of imputation credits. Based on this notion, the observations of UK share price performance by Morgan and Thomas appear to be consistent with investor tax rationality.

The next section draws on the literature around the ex-dividend day share price behaviour which is extensively investigated in the next chapter of my study. Briefly, the literature around the ex-dividend day share price behaviour distinguishes between the two major competing hypotheses *Taxation Hypothesis* (Elton and Gruber, 1970) and the *Short-Term Hypothesis* (Kalay, 1982). More recent explanations relate the ex-day premium on *microstructure effects* (Bali and Hite, 1998; Frank and Jagannathan, 1998). Additionally, others overcome the problem of interpreting the ex-dividend day pricing by looking at the behaviour of stocks around major tax reforms (Lasfer, 1995; Poterba and Summers, 1985; Bell and Jenkinson, 2001).

2.5.3.2 THE EX-DIVIDEND DAY SHARE PRICE BEHAVIOUR

Previous studies show that the risk-adjusted abnormal returns on the ex-dividend dates are positive and significantly related to the dividend yield. However, the interpretation of these findings is controversial. The question relates to what category of investors sets ex-day prices. Campbell and Baranek (1955) note that the ex-dividend behaviour of stock prices influences the portfolio decisions of investors and they observe that if the prices of shares fall by the full amount of dividends, taxable investors will, at the margin, accelerate their sales before ex-dividend days and delay their purchases until after ex-dividend days. The authors find that on average, ex-day stock prices fall by less than the amount of dividends paid. This finding was the initialisation of a puzzle in asset pricing, which has received a vast amount of literature attention.

Elton and Gruber (1970) argue that ex-dividend day share prices are set in such a way, as the marginal long-term investors are indifferent between buying and/or selling before and after the ex-dividend day. As a consequence, the ex-dividend day premium should reflect the differential taxation of dividends and capital gains of these long-term investors, and the magnitude of the drop on ex-dividend day prices relative to dividends will indicate the identity of the long-term investor. This study was followed by a vast amount of other studies either questioning or supporting the original Elton and Gruber findings. The literature can be divided into four categories: Firstly, studies that replicate the Elton and Gruber (1970) original results on non-US markets⁵⁴ or on US markets in other time periods; secondly, studies overcome the problem of ex-day pricing and examine the ex-dividend day share price behaviour around changes in tax laws in order to observe whether changes in ex-day price drops are related to changes in the tax policy;⁵⁵ thirdly, studies that observe a decrease of ex-day prices by less than the dividend but argue that the fall is due to reasons unrelated to tax rates and related to arbitrage by short-term traders⁵⁶ and; finally, a more recent part of the literature argues that even in the absence of differential taxes, ex-dividend day share price would fall by less than the dividend due to microstructure characteristics.⁵⁷

In the next chapter I investigate the share price behaviour around the ex-dividend day in the UK, Germany, France and Italy. The chapter builds on the findings of the present chapter, i.e. the differences in the taxation systems in the countries under consideration as well as the tax discrimination variables calculated. The uniqueness of my theses lies in the fact that it is a comparative European study, which will add in the literature. Firstly, to the best of my knowledge, has not been previously conducted; and secondly the differences between countries and between different taxation periods within countries will provide the ideal environment to test the predictions of the literature.

2.6 CONCLUSION

The present part of my theses illustrates firstly the differences between the classical dividend taxation system (US) and the Imputation taxation systems (UK, Germany, France and Italy). The latter provides tax credits to the shareholders for the taxation suffered at the corporation level in an attempt to alleviate the double taxation of dividends, i.e. to “homogenise” the taxation burden on dividends and capital gains. I follow Lasfer (1995) to provide the theory behind the dividend and capital gains taxation burden as well as the theory behind the tax discrimination variable under both the classical and imputation systems. A common frame is engaged in order to describe the taxation systems in the countries under consideration considering the dividend taxation at the company level, the shareholder level and the taxation of capital gains. In this analysis I also consider the taxation changes in each country, which affected the tax burden on dividends and/or capital gains in an attempt to provide in addition to the-intra country and inter-country comparison between different periods. These enable me to calculate on a common basis the tax

⁵⁴ See Chapter 3, Footnote 9 for a various studies in different countries.

⁵⁵ See Lasfer (1995), Athanassakos (1996), Gammie (1997), Grammatikos (1989), Han (1994), Koski (1996), Kamdin and Hiemstra (1993), Lakonishok and Vermaelen (1983), Michaely (1991), Poterba and Summers (1984), Robin (1991), Skinner (1993), Wu Han Su (1996) amongst others.

⁵⁶ See Kalay (1982), Kaplanis (1986), Karpoff and Walking (1988, 1990), Lakonishok and Vermaelen (1986) amongst others.

discrimination variable in each country. According to the theory, if cash in the hands of the company and cash in the hands of the shareholder can be interchanged without attracting an additional tax burden (or credit), then there is no discrimination and tax discrimination equals to unity. If tax discrimination is lower (higher) than unity, dividends (capital gains) are taxed more heavily than capital gains (dividends). Results show that there are significant differences between the European countries dividend taxation systems that result in variations of the tax discrimination variable. Also, it is shown that taxation reforms affect the tax discrimination variable and consequently the preferences of shareholders between dividends and capital gains. These provide an ideal environment to further investigate the taxation impact on the dividend policy of the firm and distinguish between contradicting theories. Extensive literature has been provided up to date, however theories developed are contradicting and lack of strong empirical support. I continue the investigation of the taxation impact on the dividend policy of the firm in next chapter as I use these findings in order to study the ex-dividend day share price reaction in the UK, Germany, France and Italy.

⁵⁷ See Bali and Hite (1998), Frank and Jaganathan (1998)

**CHAPTER 3: THE TAXATION IMPACT ON THE EX-DIVIDEND DATES IN EUROPE: EVIDENCE
FROM THE UNITED KINGDOM, GERMANY, FRANCE AND ITALY**

3.1 INTRODUCTION

In this Chapter of my Thesis, I examine the behaviour of share prices around the ex-dividend dates across four major European Countries: the UK, Germany, France and Italy. Previous studies show that the risk-adjusted abnormal returns on the ex-dividend days are positive and significantly related to the dividend yield. The question relates to what category of investors sets ex-dividend share prices. The empirical evidence provided to date has been unable to provide a single acceptable explanation for the ex-dividend share price behaviour, partly because ex-day returns may be affected by more than one factors, i.e. differential taxation of dividends and capital gains, transaction costs, risk exposure and market micro-structure effects. This ambiguity in the area constitutes one of the major motivations of this part of my study. Essentially, the literature can be categorised into four major areas, but let me first explain the importance of studying the ex-dividend day before I proceed further.

The investigation of the ex-dividend day share price behaviour is important because it provides a direct comparison between the market valuation of one unit of dividend to the valuation of one unit of realised capital gains. This has been a long-standing object of interest and controversy for financial economists. As Kalay (1982) states, *the ex-dividend offers a unique opportunity to compare capital gains (i.e. the price drop) to ordinary income (i.e. the dividend); comparing the value investors ascribe to returns in these two forms is important because each is taxed differently. How such differential taxation influences security price has financial consequences for corporations and governments that design tax codes and rely on tax revenues.*¹

Campbell and Beranek (1955)² note that the ex-dividend day³ behaviour of stock prices influences the portfolio decisions of investors. They observe that if the share prices fall by the full amount of dividends, taxable investors will, at the margin, accelerate their sales before the ex-dividend days and delay their purchases until after the ex-dividend day.⁴ Elton and Gruber (1970) specify the conditions for “no profit” opportunities around the ex-dividend day in the presence of tax differentials and present empirical evidence to show that on the ex-dividend day the share prices drop less than the amount of dividends. They argue that ex-day prices are set in such a way, as the

¹ Originals in Italic.

² Also see Barker (1959)

³ Ex-dividend day is defined as the last day investor can sell his/her shares and keep the right to the forthcoming dividend. After the ex-dividend day, shares are said to be traded without their dividend rights.

⁴ In perfect capital markets, assuming certainty, the share price drop should equal the dividend per share. Any other share-price behaviour provides arbitrage opportunities. A smaller (larger) price drop provides arbitrage profits for buying (selling short) on the cum-dividend day and selling (covering) on the ex-dividend day.

marginal long-term traders are indifferent between buying and/or selling before and after the ex-dividend day. As a consequence, the ex-dividend day premium should reflect the differential taxation of dividends and capital gains of these long-term investors, resulting in ex-day returns reflecting both the tax differential and the identity of the long-term investor. This is consistent with the **tax effect hypothesis**, that investors have a tax-induced preference for capital gains.

On the other hand, Kalay (1982) proposes the **short-term trading hypothesis**, according to which the ex-dividend share price drop less than the dividend per share provides profit opportunities for the short-term traders (these are investors who are not subject to the differential taxation of dividends and capital gains) who will capture dividends and will eliminate any excess returns on the ex-dividend dates. In this case, ex-day returns, if any, reflect the transaction costs of these traders exercising a dividend-capturing activity.

Consistent with short-term activity, Lakonishok and Vermaelen (1986) study the trading volume around ex-dividend days and report evidence on unusual patterns around ex-days. Short-term traders are also found to capture dividends in the NYSE⁵, in NASDAQ⁶ and in the Canadian Market⁷.

Moreover, studies overcome the problem of ex-dividend day pricing and analyse the changes in the tax regime that affected dividend and capital gains taxation burden. Still, results continue to be ambiguous. For example, Lasfer (1995) and Bell and Jenkinson (2002) find that changes in the UK tax system that altered the tax discrimination between dividends and capital gains resulted in changes in ex-day premiums. In contrast, Michaely (1991) shows that the 1986 Tax Reform Act in the US did not result in any increase in ex-day returns. However, Heath and Jarrow (1988) relaxed the assumption of risk neutrality and showed that ex-day share prices are not likely to be set by any category of investors.

More recently, a part of the literature⁸ deviates from the above hypotheses and relate the ex-day premium to **market microstructure characteristics** suggesting that ex-day premium can deviate from one in the absence of taxes to reflect tick size and bid-ask bounce. For example, Frank and Jagannathan (1998) find that price discreteness has a similar effect on the observed price behaviour as would be in the case if prices were determined by long-term investors. These studies suggest that the behaviour of share prices on the ex-dividend dates may be unrelated to taxes. In contrast, Graham et al (2002) compare ex-day returns before and after decimalization in the US

⁵ See Karpoff and Walkling (1988), Eades et al (1994)

⁶ See Karpoff and Walkling (1990)

⁷ See Booth and Johnston (1984)

and find results consistent with the tax hypothesis rather than the price discreteness or transaction costs effects documented by Bali and Hite (1998) and Frank and Jagannathan (1998).

The majority of the studies found in the literature provide evidence from the US; with a limited number of studies using data from single countries around the world,⁹ but to the best of my knowledge there is no study conducting a European comparative analysis of the ex-day price behaviour. I attempt to discriminate between the above contending hypotheses by examining the behaviour of share prices around the ex-dividend days that resulted from differences in institutional framework across European countries and the regulatory changes in these countries, which affected only the differential taxation of dividends and capital gains. I investigate the ex-dividend share price behaviour in the UK, Germany, France and Italy where the differential taxation of dividends and capital gains is lower than in the US. The uniqueness of the European taxation systems is due to the imputation taxation systems adopted in Europe, which provide investors with partial (UK) or full (Germany, France, Italy) tax credit on dividends but not on capital gains.

Dividends experience a tax disadvantage when compared with capital gains, at least in the US.¹⁰ The exact magnitude of the tax disadvantage associated with receiving dividends is difficult to measure, simply because different investors have different tax rates. For example, pension funds in the UK, do not pay any taxes therefore, they may not see any tax differences between dividends and capital gains, whereas individual investors may face different marginal tax rates on dividends and capital gains depending upon their wealth and income levels. Taxes are expected to affect the equilibrium share price behaviour when shares are first quoted ex-dividend. Several studies examine the share price behaviour around the ex-dividend day and compare the expected price drop relative to the dividend per share. The argument is that a simple way of estimating the tax differential between dividends and capital gains, at least to the marginal investor in a stock, is to look at the *behaviour of stock prices on the ex-dividend day*.

⁸ Frank and Jagannathan (1998), Bali and Hite (1998)

⁹ See for Canada Athanassakos (1996), Athanassakos and Fowler (1993), Booth and Johnson (1984), Bauer, Beveridge and Swakumar (2002); for China Milonas, Tan, Travlos and Xiao (2002); for Denmark Florentsent and Rydqvist (2002); for Finland Liljebloom, Loflund and Hedvall (2001); for Germany McDonald (2001), Yakov and Murgia (1997), Gugler and Yortoglu (2001); for Greece Milonas and Travlos (2001); for France Desbrieres (1988), Romon (2000); for Hong Kong Kadapakkam (2000), Boyd and Jagannathan (1994); for Italy Michaely and Murgio (1995); for Japan Hayashi and Jagannathan (1990), Kato and Loewenstein (1995); for New Zealand Bartholdy and Brown (2002); for Spain Gardeczabal and Reguley (2002); for Sweden Daunfeldt (2002), Green and Rydqvist (1999), DeRidder and Soderstern (1999); for the United Kingdom Ang, Blackwell and Megginson (1991), Lasfer (1995, 1996), Chaui, Strong and Caddle (1992), Menyah (1993), Poterba and Summers (1984, 1985), Bell and Jenkinson (2002).

¹⁰ Due to the taxation systems imposing higher tax rates on dividends than on capital gains and also due to the double taxation of dividends (US and in the UK the system only provides for partial relief). Moreover, due to time difference, see Constandinides (1983, 1984). See Chapter 2 for further details.

I lay the foundations to form my hypothesis firstly, on Lasfer's (1995) model indicating that overall tax burden on dividends and capital gains is a function the differential taxation of dividends and capital gains; secondly on the tax discrimination variable as it is defined by King (1977), i.e. the opportunity cost of retained earnings in terms of net dividend forgone; and thirdly, on the dividend taxation system differences in the UK, Germany, France and Italy as explored in **Chapter 2**. Essentially, I test the predictions of the tax effect hypothesis, that is whether in countries with higher tax discrimination variables, ex-dividend day share prices would drop by less than the amount of dividends and therefore, higher abnormal returns would occur, as compared to countries with lower tax discrimination variables. Further tests of my hypothesis would include the effects of changes in taxation codes in each country under consideration. Therefore, the uniqueness and originality of this part of my study stands in the facts that it is the first study to examine, analyse and compare the ex-dividend share price behaviour in the four European countries (UK, Germany, France and Italy) and; secondly, it is the first study to provide both intra- and inter-country comparisons between different taxation periods in Europe.

I employ event study methodologies (Brown and Warner, 1985) to investigate the share price reaction around the ex-dividend day. Data was obtained from DataStream and Hydra¹¹ to cover all listed companies on the UK, German, French and Italian Stock Exchanges for the period 1987 to 2002. Results confirm that in countries where the differential between dividends and capital gains is high, ex-dividend day returns are also high. Tests before and after changes in the taxation codes show that returns are not homogeneous across the alternative tax regimes, as I find that in each of the four countries, changes in the tax systems that affect taxes on dividends and/or capital gains alter significantly ex-day returns. However, there is some indication that in countries, such as Germany, where short-term trading is allowed and when transaction costs are low, the pre- and post- ex-dividend day returns are significant suggesting that investors trade to capture dividends.¹² For other countries the results provide further evidence on the tax effects on ex-dividend day returns.

The rest of **Chapter 3** is organised as follows. In Section 3.2 I provide a full review of the literature in four categories: studies that support the taxation effect hypothesis, the short-term effect hypothesis, studies that find a microstructure effect on that day and finally, studies that investigate the effect of taxation regime changes on the ex-dividend day price behaviour. In Section 3.3 I present the motivation and hypotheses to be tested. Section 3.4 discusses the results and the conclusions are in Section 3.5.

¹¹ These are online databases available at Cass Business School, City University

¹² This is not in accordance with the efficient market hypothesis

3.2 LITERATURE REVIEW ON THE EX-DIVIDEND DAY SHARE PRICE BEHAVIOUR

As already mentioned in the introduction, literature studying the share price behaviour around the ex-dividend day can essentially be categorised into four groups, for which I provide in the next sections. Studies that test the non-US markets are included in each section according to their results.

3.2.1 THE TAXATION EFFECT ON THE EX-DIVIDEND DAY BEHAVIOUR

Elton and Gruber (1970) expand the reasoning of Campbell and Beranek (1955) to estimate the marginal shareholder's tax rate on dividends from the average ex-dividend day price drop. They examine the ex-dividend day returns for a sample of NYSE stocks and find that the average price on ex-dividend day drops by less than the value of dividend and also that the price change-to-dividend ratio increases with the dividend yield on the security. They interpret the ex-dividend day behaviour of common stock prices as evidence that differential rates of taxation cause investors to discount the value of taxable cash dividends relative to capital gains; and conclude that the price change to dividend ratios on the ex-dividend days reflect the tax rates of various investors who trade around such days. They argue that the marginal investor who wishes to sell near the ex-dividend day is indifferent between selling on the ex-dividend day and selling on the previous day. As a consequence, the ex-dividend day premium should reflect the differential taxation of dividends and capital gains of these long-term investors¹³.

Elton and Gruber (1970) consider that investors, who buy stocks at price P_p at a particular period are interested in determining the conditions under which they should sell shares. The ex-dividend day is special in the sense that any stock purchase for a long-term buyer before this day, results in the inclusion of the dividend in current income while a buyer on or after the ex-dividend day has no such obligation. Similarly, a long-term seller after the ex-dividend day recognises the dividend as current income, while if he/she sells before he/she excludes the dividend from current income. Elton and Gruber assume that there are no restrictions on short sales and that investors are risk-neutral.

The after tax cash flows to a seller on the cum- and ex-days can be derived as follows. Let P_p be the purchase price, P_{cum} the price at which the seller can sell on the cum-dividend day, P_{ex} the ex-dividend day price, and t_d the investors marginal tax rate on current income and t_g the capital gains tax. If $P_{cum} > P_p$ and the seller has held the stock long enough for the sale to be classified as capital gains, then his/her after-tax cash flow from selling cum-dividend is equal to:

¹³ This conclusion was consistent with the *Tax-Induced Dividend Clientele Hypothesis*, which Miller and Modigliani (1961) had argued would characterise investor behaviour in an environment of differential taxation of dividends and capital gains.

$$P_p + (P_{cum} - P_p)(1-t_g) \quad (1)$$

On the other hand, if the seller waits until the ex-dividend day to sell at price P_{ex} , ceteris paribus, his/her after-tax valuation of the cash flows is equal to:

$$P_p + (P_{ex} - P_p)(1-t_g) + D(1-t_d) \quad (2)$$

Where D is the amount of dividend and t_d is the dividend taxation rate. Elton and Gruber (1970) show that in a risk-neutral world with preferential treatment of capital gains and no restrictions on short sales, shareholders are indifferent between buying or selling shares before or after the ex-day if these two days' after tax returns are equal.¹⁴ Thus, at the equilibrium equating the two after-tax cash flows and rearranging we obtain:

$$P_{cum} - P_{ex} = \Delta P = \left[\frac{(1-t_d)}{(1-t_g)} \right] D \text{ or } DOR_{ex} = \frac{P_{cum} - P_{ex}}{D} = \frac{(1-t_d)}{(1-t_g)} \quad (3)$$

Where, DOR_{ex} is the drop off ratio on the ex dividend day. If dividends and capital gains are taxed equally, the stock price should drop by about the same amount as the pound dividend on the ex-dividend day. To the degree that dividends are viewed as less attractive, because of tax differential, than capital gains, investors will settle for a smaller capital gain, in pre-tax terms, as the equivalent of a pound dividend. In other words, the price drop on the ex-dividend day will be smaller than the pound dividend, and the magnitude of the difference will reflect the tax differential. On the other hand, if capital gains are taxed more heavily than dividends, the price drop on the ex-dividend day will be greater than the pound dividend.

Alternatively, the rate of return on the ex-dividend day, R_{ex} , can be computed from Equations (1) and (2) as follows:

$$R_{ex} = \frac{P_{ex} + D - P_{cum}}{P_{cum}} = (1 - DOR) \frac{D}{P_{cum}} = \left(\frac{t_d - t_g}{1 - t_g} \right) \frac{D}{P_{cum}} \quad (4)$$

In many countries, such as the US, profits distributed as dividend payments are tax-disadvantaged relative to capital gains for many investors (i.e. $t_d > t_g$). Dividends are taxed at ordinary rates

¹⁴ In the original Elton and Gruber model the decision to hold or to sell shares before the ex-dividend day is for reasons unrelated to the dividend. The risks and transaction costs are fixed costs and, thus, irrelevant for determining equilibrium prices (e.g. Lakonishok and Vermaelen, 1986)

without tax credits, whereas effective capital gains taxes are low. Under the dividend tax discrimination, drop-off ratios are expected to be less than one or, alternatively, ex-day returns must be positive in order to compensate investors for the tax penalty. However, the tax environment in the UK is very different. Lasfer (1995) illustrates that under the UK imputation system, d is the dividend net of the tax credit deducted at firm level at rate s . For tax purposes, all investors are deemed to have received a tax credit, equal to $sd / (1-s)$. Thus, $d (1-s)$ represents the gross dividend to be taxed at rate m . Therefore the ex-day drop-off ratio, DOR_{ex} and the yield to ex-day return, R_{ex} are equal to:

$$DOR_{ex} = \frac{P_{cum} - P_{ex}}{d} = \frac{(1-m)}{(1-s)(1-t_c)} \quad (5)$$

and

$$R_{ex} = \frac{P_{ex} + d - P_{cum}}{P_{cum}} = \left(1 - \frac{(1-m)}{(1-s)(1-t_c)} \right) \frac{d}{P_{cum}} \quad (6)$$

Barclay (1987) examines the ex-dividend day behaviour of common stock prices before the enactment of the federal income tax in the US. Evidence is consistent with the tax-effect hypothesis i.e. stock prices decrease by the full amount of the dividend on the ex-dividend days during the pre-tax period. The results show no evidence to support the view that investors appear to value a dollar of dividend less than a dollar of capital gains. The data provides evidence to support the two hypotheses, firstly that investors in the pre-tax period valued dividends and capital gains as perfect substitutes; and secondly, the differential taxation of dividends and capital gains has since caused investors to discount the value of taxable cash dividends relative to capital gains. Generally the findings of the study are consistent with the hypothesis that the differential taxation of dividends and capital gains has a significant impact on the portfolio choices of individual investors. Results also support the view that dividend policy affects the market valuation of a firm's securities.

Kaplanis (1986) uses data to cover fourteen companies on the UK Traded Options Market from 1979-1984, and concludes that the average expected ex-day fall-off implicit in option prices is around 55-60 percent of the dividend and significantly different from it. The fall-off also varies inversely with the dividend yield and the estimates of the expected fall-off are not significantly different from the actual fall-off. Finally, results show that the usual assumption made in valuing options on dividend paying stocks, that the fall-off is equal to the dividend, would lead to downward-biased estimates of the option. He interprets the inverse relationship between the fall-off and dividend yield as being consistent with the tax clientele hypothesis.

Heath and Jarrow (1988) relax the assumption of risk neutrality and show that ex-day share prices are not likely to be set by any category of investors. They analyse the relation between the size of a stock price drop on the ex-dividend day and arbitrage opportunities. They reject the idea that in a frictionless economy where no transaction costs exist, there exist short-term trading strategies that make arbitrage profits if the stock price drop does not equal the dividend. They develop a theorem to show that the stock price drop can differ from the dividend, and yet there are no trading strategies that generate arbitrage opportunities. Therefore, the stock price drop on the ex-dividend date must necessarily reflect the equilibrium trading process involving different tax clienteles, one of which is the short-term trader, and a risk premium the size of which is small but positive.

Lasfer (1996) examines the simultaneous effects on both corporation and personal income taxes on dividend payment adjustments and on the behaviour of share prices on the ex-dividend days in the UK. The paper models the link between the tax treatment of dividend at firm level and at individual level; and shows that the firm's dividend policy depends on the corporate and personal taxes. Additionally, evidence is provided to support that companies set their dividend policies to minimise their tax liability and to maximise the after-tax return of their shareholders. Overall, the results show that taxation affects both the payout policy of the firm and the ex-day returns. Tax exhaustion reduces the level of dividend paid by the firms, while a lower tax burden on dividends in the hands of shareholders appears to encourage firms to pay higher levels of dividends. Furthermore, results are consistent with the tax effects, ex-day returns, but there was no evidence of a tax-induced dividend clientele effect, which effectively supports the proposition that the firm's dividend policy is affected by its shareholder's tax position.

McDonald (2001) attempts to assess the market valuation of the tax credit, using German¹⁵ stock, futures and option prices to examine the effects of dividend payments on the ex-day behaviour. He notes that German dividends typically carry a tax credit, which makes the dividend worth 42.86 percent more to a taxable German shareholder than to a tax-exempt or foreign shareholder. Accordingly, this results in a penalty for foreign investors who buy and hold German dividend paying stocks. The study documents that as a result of the credit, the ex-day drop exceeds the dividend by more than one-half of the tax credit, and shows that future and option prices embed more than one-half of the credit. The existence of credit, however, creates opportunities for cross-

¹⁵ In Germany the tax system is designed to reduce the total tax burden on corporate income by fully compensating shareholders (through tax credits attached to dividend payouts) for tax already paid by the corporation. In October 2000 a German Tax Reform eliminated the imputation system so that investors are reimbursed only part of the taxation suffered at company level.

border tax arbitrage, in which foreign holders of German stock transfer the dividend to German shareholders, and implies that it is tax efficient for foreign investors to hold derivatives rather than investing directly in German stocks. The study does not only consider the heterogeneity of investors in respect to tax rates but also the heterogeneity with respect to the pre-tax value of dividend because of the credit. To tackle this heterogeneity, McDonald adopts the costly arbitrage model of Kalay (1982) and Boyd and Jagannathan (1994) and concludes that in the absence of tax restrictions against arbitrage, the marginal ex-day price drop should reflect the dividend plus credit¹⁶. Generally, results provide evidence that approximately one-half to two-thirds of the value of the dividend tax credit is reflected in prices of German stocks and equity derivatives. The evidence is consistent with the existence of tax-motivated trading occurring around the dividend date, and with German arbitrageurs facing tax risk associated with dividend capture transactions.

In a more recent study, Elton, Gruber and Blake (2002) attempt to differentiate between taxation effects and microstructure effects¹⁷ by examining the ex-dividend day effects on closed-end mutual funds. They are motivated by the fact that this sample contains a set of securities (municipal bond funds) for which the ex-dividend price drop should be greater than the dividend if taxes matter as well as a set of securities (taxable bond and domestic common stock funds) for which the drop should in general be less than the dividend.¹⁸ The study covers the period 1988 to 2001 which also encompasses two major changes in the post-tax value of dividends relative to capital gains for funds with dividends subject to tax, and one major change for the value of tax-free dividends. These changes can provide further tests for testing the taxation hypothesis. By testing ex-dividend effects on a sample of funds where dividends are tax-advantaged, they find that taxes should and do cause the fund price to fall by more than the amount of dividends, which is consistent with tax effect hypothesis. Secondly, when they test the non-tax-advantaged closed-end funds, they find that the fall in the price on ex-dividend date is less than the dividend during periods when capital gain taxes are less than income taxes, which provides further evidence to support the tax hypothesis. In general, results show that the behaviour of price changes with respect to dividends on the ex-day conforms to the theory that taxes determine the relative value vis a vis capital gains. Results hold both for different types of closed-end funds and for the impact of changes in tax law within each type of fund.

¹⁶ This is analogous to Boyd and Jagannathan (1994) result that the marginal price drop in the US should be one-for-one.

¹⁷ Literature on microstructure effects on the ex-date provided in Section 3.2.3

¹⁸ Green and Rydqvist (1999) study a different investment class, Swedish bonds, that should also have an ex-dividend day drop greater than the dividend.

3.2.2 THE SHORT-TERM TRADING EFFECT ON THE EX-DIVIDEND DAY BEHAVIOUR

In contrast to the taxation effect hypothesis, some empirical studies, Kalay (1982), Lakonishok and Vermaelen (1986), Karpoff and Walking (1988), Eades et al (1984), Hess (1982), Fedenia and Grammatikos (1991), and Michaely (1991) amongst others, contest the ex-dividend day tax premium hypothesis, and they support that the ex-dividend prices are set by short-term traders who capture dividends by buying cum-dividend and selling ex-dividend. Additionally, the marginal investors are short-term traders, who generally prefer dividends to capital gains and they are active in dividend capture¹⁹. This prediction is referred to as the “*Short-Term Trading, Hypothesis*”. Generally short-term effects predict that pre-ex-day returns should be positive and post-ex-day returns should be negative. Significant price increases before the ex-day will be consistent with the buying pressure of the short-traders, while, in the post-ex-dividend date, a selling pressure by short term traders would reduce their holding risk and result in a price fall.

Brooks and Edwards (1980), Kalay (1982), Lakonishok and Vermaelen (1986) and Karpoff and Walking (1988) argue that the explanation of dividend-tax clienteles holds only if long-term investors are the equilibrium-price-determining investors. Short-term traders do not enjoy a preferential tax status between capital gains and dividend income. Therefore, they will arbitrage any differences between dividends and security price changes subject to their marginal transaction costs. According to Brooks and Edwards (1980) this arbitrage would drive the ex-day price-change-to-dividend ratio towards a value of one, but deviating from one because of the required coverage of transaction costs. This phenomenon holds for any price-change-to-dividend ratios sufficiently greater or less than one to enable coverage of transaction costs. Thus, the literature questions Elton and Gruber (1970) key assumptions. Kalay (1982) and Miller and Scholes (1982) point out, that transaction costs are not negligible when compared to the usual magnitude of cash dividends. Kalay (1982) also notes that it would be difficult to separate the transactions cost component and the differential tax component by looking at ex-day returns. However, Kalay ignores the possibility that transaction costs and the opportunity cost of capital depend on the stock as well as the market conditions prevailing at a point in time.

Kalay (1982), points out that equilibrium prices around the ex-dividend day appear to be determined not only by the “*the long trading population*” but also by the “*short-term traders*” and argues that short-term profit elimination around the ex-dividend day can make the estimation of investors’ marginal tax rates from the behaviour of share prices in a particular period

¹⁹ Dividend buying, also known as dividend capture, consists of a stock purchase by a taxable corporate investor prior to the stock’s ex-dividend day, and sell the stock soon after the ex-dividend day. If the stock is held long enough to satisfy a minimum holding period stipulated in the Inland Revenue Code, dividends received qualify for a substantial federal income tax deduction, whereas any capital loss is fully deductible against capital gains.

impossible. He supports that when ex-day returns include the tax premium investors taxed at the same rate on dividends and capital gains, then the ex-day prices would fall by the full amount of the dividend. Moreover, in the same paper he presents the “Short-Term Traders” Hypothesis, according to which, the stock price drop should be equal to the entire dividend. Otherwise, short-term traders, who face no differential taxation on dividends versus capital gains, could make *arbitrage profits* by trading on this phenomenon.

Eades, Hess and Kim (1984), follow Black and Scholes (1973) to examine the pricing behaviour for five days both before and after the ex-dividend day and under the hypothesis that failure to distinguish ex-dividend days from surrounding days would cast further doubt upon the tax interpretation of ex-dividend day pricing behaviour. Results either confine neither to the ex-dividend day, nor to taxable distributions by common stocks. All non-common stock samples showed abnormal return behaviour during the ex-dividend period providing inconsistency with the taxation effect hypothesis. Results are further tested for errors, seasonality, announcement effects, infrequent trading and non-normality, which provide no explanation of the ex-dividend period anomaly. They find positive excess returns before and including the ex-dividend day and abnormally negative returns following the ex-dividend day. In fact the abnormal returns on the ex-dividend day are smaller 0.142 ($t = 11.741$) than the excess return on the last cum-dividend day, 0.188 ($t = 15.647$). The results show that the cumulative standardised excess return from day -5 to and including day 0 is 0.53 percent (significant at the 0.01 level), whereas the ex-dividend day excess return is only 0.142 percent ($t = 11.741$). The cumulative negative excess return from day +1 to day +5 is -0.29 percent. Eades et al note that the overall impression is that abnormal returns are not uniquely associated with the ex-day and this evidence suggests that the relative price drops on ex-dividend days cannot be used to measure differential tax rates between dividends and capital gains (page 21). Furthermore, they study the ex-date price behaviour of the NYSE taxable preferred stocks that have a higher dividend yield than common stocks, non-taxable cash distributions to common stocks and stock dividends and splits for the period 1962 to 1980. The ex-dividend day returns of preferred stocks suggest that preferred dividends are taxed at a lower rate than capital gains; non-taxable stock dividends and splits are priced on ex-dividend days as if they are fully taxable; and non-taxable cash distributions are priced as if investors receive a tax rebate with them. The ex-date excess returns are smaller for such stocks and sometimes even negative, suggesting that the tax effect is less for such stocks due to the presence of dividend captures trading around ex-dividend dates. Lakonishok and Vermaelen (1986) confirm Eades et al (1984) results by finding that abnormal trading volume around the ex-dividend day was related to dividend yield. In a later paper Eades et al. (1994) examine the time series behaviour of ex-dividend period returns and positive results, which are not consistent with the traditional tax hypothesis.

Karpoff and Walking (1988) report on empirical tests of the proposition that short-term traders are the marginal investors in dividend-paying stocks and argue that dividend tax penalty and short-term trading explanations are not “competing but complementary”. They prove that investors trading for reasons unrelated to the dividend have incentives to time their trades to maximise after-tax returns, as implied by the tax penalty explanation and they reach to the conclusion that for securities with active short-term trading, ex-day returns are positively related to transaction costs. Empirical results of the study prove that positive correlations between transaction costs and ex-day returns exist in high-yield stocks.

Koski (1996) examines ex-dividend observations for ordinary cash dividends using marginal conditions that explicitly model trading at bid and ask quotations. These conditions distinguished between buying and selling, incorporated the bid-ask spread as marginal transaction cost, and minimised potential biases caused by bid-ask measurement error. She particularly examines the 1984 and 1986 Tax Reform Acts and tests the trading strategies of long-term tax clientele traders. Results suggest that marginal price declines increased relative to the dividend amount from 1983 to 1988, consistent with predictions based on the elimination of preferential tax treatment of capital gains. Consequently, that tax-neutral short-term traders cannot profit from ex-dividend day price declines if they incur the entire bid-ask spread as a marginal transaction cost. Taxable corporations that offset preferential tax treatment of inter-corporate dividend income against transaction costs also cannot profit beyond the spread. Overall, results found to be consistent with the hypothesis that dividend capture trading increased over the examined period.

Boyd and Jagannathan (1994) investigate the ex-dividend day dividend capture activity in the US for the period 1962 to 1987. They develop an equilibrium model in which transaction costs play a key role and where three classes of investors exist: taxable individuals, dividend capturing-tax-advantaged corporations and tax-neutral arbitrageurs. They characterise the nature of equilibrium and the equilibrium relation between expected percentage price drop and dividend yield. The dividend capturing activity is a property of the equilibrium. The equilibrium theory predicted that for low dividend yield stocks, trading would generally take place between taxable individuals. Over some intermediate range of dividend yield, tax-neutral arbitrageurs would enter the market, buying from and selling to taxable individuals. For stocks with high dividend yields dividend capture would be desirable depending on other stock attributes besides yield. Each range of dividend yield is characterised by a different equilibrium pricing condition. Results show that the theoretically predicted relation between expected percentage price drop and dividend yield is a piecewise linear convex function that will, in general, be indexed by prevailing market conditions. This is proved to be true whether or not arbitrageurs enter the market. Overall, evidence is

provided to show that at the margin, percentage price drop is almost exactly equal to the dividend yield, which constitutes an empirical regularity (stylised fact), which is neither predicted by the theory nor inconsistent with it. They note that whatever the explanation, the results that one-for-one marginal price drop has been a gold rule of thumb, at least on average.

Moreover, Michaely and Vila (1995) suggest that, in the presence of a perfect clientele, there should be no tax-related gains from trade among the investors around the ex-dividend day, because investors are confronted with the same relative after-tax valuation of dividends and capital gains. In the absence of disagreement on the relative valuation, there should be no profit opportunity and consequently, no abnormal volume around the ex-dividend day. Thus, if a perfect clientele exists, there should be a significant change in trading volume around the ex-dividend day after the 1986 US Tax Reform. To account for risk, for which Elton and Gruber (1970) did not, they propose an equilibrium model to explain trading volume and stock price behaviour around the ex-dividend day. They show that the ex-day price drop relative to the dividend amount is a function of the average relative tax rates of dividend versus capital gains across traders and the total risk in the economy. They also show that the trading volume around the ex-day is positively related to the heterogeneity of investors' income taxes and the dividend size and is negatively related to the variance of stock.

Romon (2001) studies the stock price reaction, in France, around the dividend announcement and the ex-dividend day by introducing the dividend policy stability criterion in event studies, based on the dividend yield. In France, dividend and earnings announcements are generally made at the same moment. Romon uses a methodology, which enables him to distinguish stock price reactions due to earnings announcements from those due to dividend announcements. He compares the announced values to anticipated values. Results differ according to the event study carried out. The results show that the informational effect of dividend announcement appears different according to the firm dividend policy level. Romon draws attention to results around the ex-dividend day. He notes that when the market knows the firm dividend policy (low, medium or high) and when there is no surprise, the dividend yield clientele effect seems to be extremely limited. Results show a very low increase of Elton and Gruber DOR $((P_b - P_a)/D)$ according to the dividend yields level; consequently this introduces doubts over the dividend clientele hypothesis.

Michaely and Murgia (1995) investigate the effect of taxation on stock price and trading volume around the ex-dividend day on the Italian Stock Market, where dividends on two classes of stock are taxed differently. Data consists of all common and non-convertible, bearer-savings and dividend-saving stocks traded on the Milan Stock Exchange between 1981 and 1990. In Italy, savings on stock dividends, in 1995, were taxed at a fixed rate of 15 percent for all market

participants, whereas the tax rates on common stock dividends varied widely across market participants. They note that this differentiation in tax rate should induce an abnormally high volume of trade because there are positive gains to be made from traders. Evidence shows that the weighted average of investors' tax rates is reflected in the ex-day prices and the variance of the relative tax rate across investors is reflected in the volume of trades. They also find evidence that higher transaction costs result in higher ex-dividend day excess returns and lower abnormal volume, which is consistent with the "profit elimination" activity by institutions and corporations.

3.2.3 THE MICROSTRUCTURE EFFECT ON THE EX-DIVIDEND DAY BEHAVIOUR

A recent explanation to the ex-dividend price movements is based on microstructure arguments. Two articles have recognized the fact that prices fall by less than the dividend, but they have put forth explanations for this phenomenon, which are neither related to taxes nor to short-term trading around the event. The first of the microstructure argument is presented by Bali and Hite (1998) who state that the drop in the price less than the dividend is really due to discreteness in prices rather than taxes. The second is presented by Frank and Jaganathan (1998) who hypothesise that the collection and reinvestment of dividends is bothersome for individual investors but not for market makers; therefore, the latter tend to buy before a stock goes ex-dividend and then sell on the ex-date. They argue that the bid-ask bounce contributes to, if not totally explains a phenomenon others interpret as tax/short-term trading effects.

Bali and Hite (1998) investigate the discreteness in trading prices on observed ex-dividend day stock price changes, for the period 1962 to 1994, based on the notion that since prices are constrained to discrete tick multiples while dividends are essentially continuous, ex-day price changes will not equal dividends. The price-drop-to-dividend firstly found to be less than one, secondly found to increase with dividends and thirdly, decline between tick multiples, giving a "sawtooth" pattern of data. In addition they estimate regressions of price changes on dividends and the distance from the tick below. The coefficient of the later found to be insignificantly different from one and the coefficient on the fractional part of the dividend found to be almost equal to one-half, which results in discontinuities at exact tick multiples. Finally, abnormal returns on the ex-dividend day found to be even smaller than the rounding error caused by discreteness and too small to generate arbitrage profits since trading was confined to tick multiples. Since dividends and dividend yields are highly correlated, discreteness will give the impression of tax-induced dividend clienteles even if there are none. Taxable cash dividends and non-taxable stock dividends found to exhibit similar ex-dividend day behaviour. Therefore, Bali and Hite conclude that at a minimum the tax-induced dividend clientele hypothesis is not the only hypothesis capable for explaining the behaviour of stocks during the ex-dividend day.

Frank and Jagannathan (1998) examine data from the Hong Kong stock market for the period 1980-1993, where neither dividends nor capital gains are taxed, therefore, anything than a one-for-one price drop on ex-dividend days cannot be driven by taxes. They develop a model of investor behaviour in which there were two prices in the market, the ask price and the bid price. In this non-Walrasian setting, they show that, under certain conditions, on the ex-dividend day the stock price would rise by a small amount relative to the magnitude of the bid-ask spread and the relative importance of traders. Evidence shows that in the Hong Kong Stock Market, where no relevant taxes are faced by the marginal trader, the ex-day share price adjustment is reflecting taxes as in the US and elsewhere. The authors account for the ex-day price drop by recognising that most traders tend to occur at the bid on the last cum dividend date, in order to avoid the nuisance of collecting the dividend; and at the ask on the ex-dividend date, therefore it is clear that stock prices rise on the average on ex-dividend days quite independent of the amount of taxation on dividend.

Green and Rydqvist (1999) criticise the Frank and Jagannathan model because dividends are undervalued relative to capital gains due to the existence of “nuisance value” in their model. Green and Rydqvist examine the behaviour of Swedish bonds around the ex-dividend day; which carry tax-exempt coupon payments, but capital gains and losses are taxed as with other securities. Results show that the tax-induced preference for cash distribution, lead the bonds to trade at negative yields. The price of the bond was so high, reflecting the tax shelter it offered, that on a pre-tax basis the internal rate of return is negative. The price drop that occurs over the ex-distribution period is larger in periods when marginal tax rates were high and whenever the tax code allowed more generous use of the associated capital loss. However, Green and Rydqvist note that results do not give conclusive evidence that the ex-dividend behaviours in equity markets are entirely tax induced, rather than attributable to micro-structural or other market frictions.

French, Varson and Moon (1999) propose the application of an option-pricing framework to the ex-dividend behaviour of common stocks. They assume that the total value of the firm decreases by an amount equal to the dividend, when a firm’s financial structure contains a debt component, thus, the concept of option pricing applied to equity valuation leads to a situation in which the payment of a cash dividend results the ex-dividend day stock decline being less than the dividend. The difference between the fall in the value of the firm and the fall in stock value is equal to the decline in value absorbed by the debt. They note that in perfect capital market, arbitrage should occur such that the ex-dividend day behaviour of yields no abnormal returns (i.e. the decline will be equal to the dividend). They use a sample of 40,251 ex-dividend day observations, and they observe a decrease in stocks by an average of 77 percent of the dividend on the ex-day. They also categorise their sample into stocks with no long-term debt and those with positive long-term debt;

and they find that the former fall on average by 100 percent of the dividend while the latter fall only by 74 percent. Finally, they analyse in a regression model that considers other factors influencing the ex-dividend behaviour, and they find that the amount of firm debt has a significant and positive relationship with observed ex-dividend day price changes. Since their model controls for other variables that affect the ex-day returns (e.g. tick intervals, transaction costs, the tax status of the dividend and the dividend capture activity), they conclude that the option pricing framework provides a valid explanation for a portion of observed ex-dividend day behaviour.

Graham Michaely and Roberts (2003) analyse²⁰ the ex-day price and volume reactions to the dramatic reduction in price discreteness and bid-ask spreads that occurred as the pricing grid changed from $1/8^{\text{th}}$ and $1/16^{\text{th}}$ to decimals for stocks listed on NYSE. They also look at the 1997 reduction in the capital gains tax rate from 28 percent to 20 percent. If the price discreteness²¹ and/or the bid-ask bounce²² are the dominant factors driving the ex-day activity, then ex day premia is expected to get closer to one and abnormal returns are expected to approach zero as the pricing grid becomes finer. They find evidence to support the opposite. They also find that same patterns when they base their analysis on mid-quotes i.e. there is no evidence to support that the price discreteness nor the bid-ask bounce explain the patterns in ex-day premiums and abnormal returns. Results are consistent with the notion that the decrease in spreads reduced the cost of transaction for small trades-but because liquidity fell at the same time as bid-ask spreads transaction costs for large trades did not fall. They also find that the premium is closest to one among stocks with the highest dividend yield and abnormal volume is also high for these stocks which is consistent with dividend capture or arbitrage activity forcing the premium to approach one for the high dividend yield stock. This is also consistent with price discreteness and bid-ask bounce explanations. However, they do not find a change in the association between dividend yield and premiums as price discreteness and bid-ask spreads falls across pricing eras, casting doubt on these microstructure explanations being the dominant cause of the positive relationship between yields and premiums. Generally results are consistent with the tax hypothesis that the ex-day premium is caused by preferential taxation of capital gains relative to dividend income.

²⁰ The purpose of their study is threefold: they firstly test the predictions of the microstructure theory, that is the decline in minimum tick size and associated reduction in bid-ask spread should increase the average ex-day premium, so that is closer to one; secondly; they test the tax hypothesis, that is the price drop is less than the dividend because high personal taxes on dividends (relative to capital gains) reduce the value of the dividend; and thirdly they focus on how the interaction of transaction costs, taxes and risk affects ex-day prices and volume behaviour. They find that the median effective ex-day bid-ask spread fell from 0.125 to 0.0625 to 0.020 in the one-eighth and one-sixteenth decimal eras respectively. The occurrence of large reduction in spreads is due to reduced coarseness in the pricing grid and permits a test of the transaction cost models. As transaction costs decrease, more arbitrage trades should take place and the average premium should increase, and become closer to one, especially for those stocks that experienced the greater reduction in spreads (i.e. trading volume, and large arbitrage trades should increase).

²¹ See Bali and Hite (1998)

²² See Frank and Jagannathan (1998)

3.2.4 THE TAXATION REGIME CHANGE EFFECT ON THE EX-DIVIDEND DAY BEHAVIOUR

Poterba and Summers (1984), strengthen the tax hypothesis interpretation by finding predictable differences in ex-dividend-day share price reactions across three different tax regimes in the UK. They study the relationship between dividends and stock price movements during two major tax changes in the UK²³ and document the importance of taxes in determining this relationship. Using both daily and monthly data on British Securities, they conclude that dividend taxation has a substantial effect on the premium which investors require to induce them to receive returns in the form of dividends. Their results confirm the view that the taxation of dividends reduces their relative valuation by investors; they find that taxes change equilibrium relationships between dividend yields and market returns. Moreover, findings suggest the importance of tax changes and the coefficients and their differences decline to magnitudes similar to those of the CAPM. The finding that dividend taxes are recognised by investors and affect ex-ante returns, which they demand, deepens the puzzle of why firms pay dividends. Davidson (1989) and Davidson and Mallin (1989) argue that the ex-date price change of shares in the UK is far more complicated than that proposed by Poterba and Summers (1984). Davidson and Mallin (1989) believe that drop-off ratios resulted from an interaction between arbitrage constraints and a weak dividend preference for higher yielding shares. They conclude that the tax differential hypothesis has little relevance to the long-term ex-dividend day behaviour of shares in the UK.

The Poterba and Summer (1984) results are also in contrast with Lakonishok and Vermaelen (1983) who examine the effects of both the Tax-Clientele and Short-Term Trading Hypotheses on the Toronto Stock Exchange around the 1986 Reform Act and find evidence to support the short-term hypothesis. The results are inconsistent with the tax-clientele interpretation of ex-dividend day behaviour, since prices appear to fall by a significantly smaller amount after the tax reform relative to the dividends than before. The authors also note that the relative price drop was much smaller than reported in similar studies, which employed US data, despite the more favourable Canadian tax treatment of dividends relative to capital gains. They also note that the results should not be interpreted as evidence that stock prices are independent of personal taxes and dividend policy. They merely argue that the price behaviour on ex-dividend days should not be used to assess the relative valuation (by the average investor) of taxable dividends versus taxable capital gains or the existence of the so-called "clientele" effects. In a later study, Lakonishok and Vermaelen (1986) show that there is abnormally high volume around the ex-dividend days for some stocks, which they interpreted as additional evidence of short-term trading. Booth and

²³ The major changes in British Corporate Income Taxation can safely be viewed as exogenous. Both occurred following changes in the political party in power. Firstly, in 1965, the newly elected Labour Government instituted Capital Gains Tax at a statutory rate of 30 percent. This reform should have increased shareholders' relative valuation of dividend income. Secondly, in 1973, the Conservative Government introduced an integrated Corporate Income Tax,

Johnson (1984) however, criticise Lakonishok and Vermaelen (1983). The former argue that the low drop-off ratios observed by the latter, could be explained by their adjustment for small dividend payments.

Michaely (1991) analyse the behaviour of stock prices around ex-dividend days after the implementation of the 1986 US Tax Reform Act and provide evidence that the 1986 tax change had no effect on the ex-dividend stock price behaviour. Results show that the premiums for the high-yield securities are consistently above one, which proves the significant role of corporate traders. They find that the tax reform does not change the incentives of short-term traders and has a very small impact on corporate traders' incentive to trade around the ex-dividend day. Finally, they conclude that the reduction in transaction costs and structural changes in the US financial markets may have resulted in the dominance of institutional traders in the trading around ex-dividend day and consequently, a change in the individual investor's tax rates had no significant effect on the ex-dividend day prices.

Menyah (1993) attempts to fill the gaps left in earlier studies by applying the methods of both Elton and Gruber (1970) and Kalay (1982) by investigating ex-dividend day pricing in the UK with a view to assessing the relevance of the contending hypothesis to the UK market. The investigation covers four major tax changes, which have altered the taxation of dividends and capital gains. He investigates the major hypothesis on ex-dividend day pricing for the UK equity market. The results hardly show any support for the tax-induced dividend clientele hypothesis. Investors were found to prefer capital gains to dividends and therefore, the tax effect concept was reinforced by the results. Moreover, some evidence is obtained that the short-term trading hypothesis may explain part of the puzzle in the pricing on ex-dividend days at least before the introduction of the Anti-avoidance Legislation of 1970²⁴.

Lasfer (1995) studies the behaviour of share prices around the ex-days that resulted from the regulatory changes of the 1988 ICTA, which affected only the differential taxation of dividends and capital gains for the tax-exempt investors, in an attempt to isolate the impact of taxation on the ex-dividend days. He examines the ex-day abnormal returns of a large sample of UK listed companies and compares the distribution of ex-day abnormal returns in pre- and post-1988 ICTA. The tests are conducted under the hypothesis that taxation is the only force that drives ex-day share prices; therefore, pre-1988 ex-day returns are expected to be positive and significant in

which effectively reduced the dividend tax rate on personal and corporate investors and actually provided a dividend subsidy to untaxed institutions. This resulted to a reduction of the tax rate applicable to dividend income.

²⁴ Under the Anti-Avoidance Legislation, which introduced in 1970, the Revenue had the power to tax as a dealer, anyone who traded "too frequently". This implied that all profit from such trading, be dividends or capital gains, would be taxed at ordinary income tax rates.

order to reflect the tax differential between dividends and capital gains. As a consequence post-1988 ex-day returns are expected to be negative and insignificant to reflect the tax credit associated with the cash dividend. Results are consistent with the tax hypothesis, providing evidence that the significant shift between the two periods, pre- and post- 1988, is driven mainly by the highest dividend yield groups; while for the lowest quintile, ex-day share prices drop by the full amount of the dividend in both periods. Additionally, results show that ex-day returns are not affected by commonly used measures such as the bid-ask spread and trading volume, or by the day of the week, the month of the year, type of dividend distribution or a number of days to the actual receipt of the cash dividend. Lasfer (1995) specifically investigates the relevance of short-term trading to the UK and concludes that ex-day returns in the UK are not affected by short-term trading. This makes ex-dividend evidence from the UK particularly useful in testing the impact of dividend taxation.

Bell and Jenkinson (2002) examine the impact of the July 1997 Tax Reform in the UK, which was structured in such a way that the immediate impact fell almost entirely on pension funds, the largest investor class in the UK by reducing their valuation of dividend income by 20 percent. They attempt to test whether pension funds in the UK are the marginal investors, and if so how taxes affect the valuation of dividend income, by estimating the extent of any change in the valuation of dividend income before and after the reform when considering the ex-dividend day share price behaviour. They also generally test for clientele effects in the UK by using a smoothed measure of dividend yield, in contrast with previous studies (for example, Lasfer, 1995 and Lakonishok and Vermaelen, 1983). Before 1997, results show firstly, that the average drop-off ratios are ranging from 0.84 to 1.16 depending on the sample and measurement method and secondly, that strong clientele effects exist as drop-off ratios are positively related to dividend yields. These provide support for the hypothesis that effective rates of capital gains tax are considerably below statutory rates for many investors, and that pension funds are the effective marginal investors for high-yielding companies. After the FA1997, significant changes in drop-off ratios are found, especially for high-yielding companies. This provides further evidence for the tax-exempt investor being the marginal investor for high-yielding companies whose valuation of income after 1997 was reduced by 20 percent. In line with the theory, drop-off ratios are found to decrease on average by 13 to 18 percent depending on the company size. Overall, results provide evidence to support the clientele effect hypothesis as well as the notion that taxation significantly affects the valuation of dividend income.

Han (1994) argues that 1986 Tax Reform Act²⁵ in the US constitutes a dramatic change, and offers a unique opportunity to examine investors' valuation of dividend relative to capital gains and to test the tax effect hypothesis as opposed to the short-term hypothesis. Data consists of stocks listed on NASDAQ and NYSE/AMEX for the period 1983 to 1990²⁶. Results show that the ex-date returns on NASDAQ stocks significantly decrease after the 1986 TRA but this is not the case for NYSE/AMEX stocks. He also finds that while the ex-date return behaviour is more consistent with the tax premium hypothesis for NASDAQ stocks, for the NYSE/AMEX stocks the behaviour is more consistent with the short-term hypothesis. Thus although, both factors may affect ex-date returns, the ex-date returns of NASDAQ stocks are dominated by the tax premium, whereas those of NYSE/AMEX stocks are dominated by the short-term trading. Han argues that these different dominant factors for the two groups contribute to the different results for the 1986 TRA effect on ex day returns.

3.3 MOTIVATION AND HYPOTHESIS TO BE TESTED

In summary, the effects of dividend taxation on the valuation of the firm have several fundamental implications. If, for example, dividend taxes do not influence share prices as suggested by Miller and Scholes (1978), then dividends impose a tax penalty on taxable shareholders. However, if share prices absorb the effects of dividend taxation, then corporations could distribute dividends without imposing a penalty on shareholders at the margin. That is dividend policy would be unaffected by dividend taxes, if dividend taxation is constant. In the case of unanticipated temporary changes in the dividend tax, payout decisions would be affected. Several researchers, King (1977), Auerbach (1979 a, b), and Bradford (1981), have suggested that if dividend taxes reduce the market value of retained-earnings equity, then it would reduce shareholders' required return on this source of financing below the required return on equity raised from external markets. Aside from the corporate financial implications, tax policymakers devote substantial attention to the potential share price effects of dividend taxes (Gentry and Hubbard, 1998). If dividend taxes reduce share prices, then a portion of the economic efficiency benefits of corporate tax integration or other fundamental income and consumption tax reform would be dissipated in windfall gains to current shareholders.

Following the literature review, it seems reasonable to argue that, on balance, US evidence is mixed. The validity of the Elton and Gruber (1970) results could also be difficult to sustain in other capital markets. International evidence, (e.g. from the Toronto Stock Exchange in

²⁵ The 1986 Tax Reform Act abolished the tax differential on dividends and capital gains for ordinary investors.

²⁶ He comments on two previous studies, Michaely (1991) and Robin (1991) which provide contradicting results. The former finds no evidence to support that the 1986 TRA affects the ex-date returns behaviour while the latter supports the opposite. Han (1994) argues that the differences in the results of these two studies might be due to different data sets

Lakonishok and Vermaelen (1983) and Booth and Johnson (1984) amongst other studies), indicate that marginal tax rates cannot be inferred from ex-dividend day price change to dividend ratios. The short-term hypothesis is also difficult to sustain since the price change to dividend ratios are very low relative to what could be expected in the presence of short-term arbitrage opportunities. For the UK, most of the studies including Lasfer (1995, 1996), Brealey (1970), Poterba and Summers (1984,1985), Kaplanis (1986), Bell and Jenkinson (2001), find evidence to support the tax hypothesis. The inferences about the two contending hypotheses are essentially by-products of studies focused on related but different issues.

Despite the long existing literature, the ex-dividend day stock price behaviour puzzle remains unsolved. The purpose of the present part of the study is to examine, compare and contrast the ex-dividend day behaviour of stock prices in the UK, Germany, France and Italy, in order to shed light in the challenging puzzle. In order to investigate and test the forces driving the ex-dividend share price behaviour, I am testing the *Tax Effect Hypothesis* as opposed to other explanations of the ex-dividend day price behaviour in the literature, the main of which is the Short-term Trading Hypotheses, in order to investigate the relevance of the contending hypotheses to the four markets. Additionally, comparison of ex-dividend day stock returns before and after major tax system changes in each country will be useful in identifying the tax effects on the dividend policy of the firm.

The study will follow the Elton and Gruber (1970) model to test whether there is any evidence of the “Clientele Effects”, originally proposed by Miller and Modigliani. That is, if investors with high marginal tax brackets hold low dividend yield stocks, then those stocks should have relatively small DOR_{ex} Values, reflecting the tax bracket of their median shareholder. Elton and Gruber’s (1970) controversial finding that on ex-dividend days share prices decline less than the value of their dividends, suggests that marginal investors may face higher tax rates on dividends than on capital gains. In order to test whether marginal investors in Europe face higher dividend taxes than capital gains taxes I calculated the tax discrimination variable in each country under consideration and I appoint an event-study methodology in the next section in order to observe the ex-dividend day behaviour of stock returns in each country.

HYPOTHESIS: If taxation effects drive the ex-dividend share price behaviour then in countries where dividends are taxed at a higher rate than capital gains, ex-dividend day returns will be higher.

and methodologies used as well as to the fact that the above studies focus on stocks listed on different US stock exchanges.

Ex-dividend day returns are also expected to change with tax reforms that affect the tax discrimination variable. For example, before FA1997, tax-exempt investors were entitled to a full refund of the tax credits attached to dividends. This feature, which was uncommon among other countries operating imputation credits, resulted in tax-exempt investors having a strong preference for dividend distributions (with the associated tax credit) over retaining profits within the company (which generated no tax credits for the shareholders). Considering that tax-exempt investors constitute the largest investor class in the UK I would expect firstly, higher abnormal returns on the ex-dividend day in the UK before the reform; and secondly, in comparison with other countries abnormal returns are expected to be higher in the UK, before FA1997. If this hypothesis is correct, results are expected to be reversed after the 1997 FA in the UK. Similarly, the tax reforms in other countries reviewed in Chapter 2 are all expected to have significant impact on the ex-dividend day returns. These predictions are tested directly in the present chapter.

The issues I investigate in this part of my study are of central importance to corporate finance and asset pricing. It is important to understand the degree to which investor taxes and transaction costs are impounded into share prices, which in turn can affect security returns, the cost of capital, capital structure, investment spending and governmental revenue collection. The long existing and contradictive theoretical and empirical evidence around the issue of dividend taxation that the literature has to offer, motivate this study. To the best of my knowledge the study will contribute to the literature because of its country- comparative nature and will provide an understanding of the dividend taxation systems in European countries. The study can be proved useful to both European investors (and International investors) and to policymakers (managers who set the dividend policy as well officials who consider taxation systems) as dividend taxation is a matter of considerable importance. Moreover, the simultaneous examination of different major taxation reforms in different countries has not been previously provided in the literature, and this would offer a further understanding of the dividend taxation and share price behaviour as predictions of the theories developed would be tested through time (before and after taxation systems).

3.4 DATA AND METHODOLOGY

Data for the purpose of testing my hypotheses is drawn from DataStream, an online Database to cover all listed companies on the London Stock Exchange (FTSE), the Frankfurt Stock Exchange (DAX), the Paris Stock Exchange (CAC) and the Milan Stock Exchange (MIBTEL) for the period August 1987 to August 2002. The database covers a longer period time-series data, however the period of my study has been limited due to a large number of missing observations before 1987 especially for French and Italian companies. Changes through the years of study in the Listing of the companies are taken into consideration. Data obtained consists of dividend distributions, ex-dividend dates, share prices, and market indices. The sample selected had to meet three

requirements. Firstly, in order to avoid the problem of confounding effects of other various announcements firstly raised by Miller and Scholes (1982) any firms that had any other specific earnings, stock splits, or rights issues announcements, within a period of twenty days either before or after the ex-dividend day were excluded. Secondly, following Lakonishok and Vermaelen (1993) in order to avoid problems with “thinly” traded securities; events for which one or more prices were missing were omitted. Therefore, the companies with no continuous daily price quotation on the Stock Exchanges or with discontinuous accounting data were omitted. Thirdly, foreign companies and companies which do not have their major activities in the countries under consideration were also omitted in order to avoid non-linearity with the country Share Index as well as special treatment on dividends (which is beyond the scope of my study). My final sample contains a total of 10085 observations for the UK, 3516 for France, 2910 for Germany and 1237 for Italy, a pooled sample of 17,748 observations. These observations are relatively evenly distributed across years and cover all industries and firm sizes.

The study employs the Brown and Warner (1985) event study²⁷ methodologies. I use the market model to compute the abnormal returns over the event window [-40, +40] days relative to the ex-dividend day. To obtain the market coefficients, security returns are regressed against the corresponding market index in each country over the period [-290, -41] trading days relative to the ex-dividend date. The market index is taken as the index that combines small as well as large firms. For example, I use the *Financial Times All Share Index* in the UK. A minimum of 40 non-missing observations is required for the market model. I test the robustness of my results using various alternative event study specifications. In particular, I use the Dimson (1979) model and Scholes and Williams (1977) specifications to account for non-synchronous trading, and the adjusted market model ($\beta=1$). I also obtain results based on the mean adjusted returns to overcome any potential problems that might arise from the market model. To test for the sensitivity of my results to the event study methodology, I compute the drop-off ratio and the raw returns. I also compute the adjusted drop-off ratio by multiplying the price cum-dividend by one plus the expected return, defined from the market model.

To test for potential effects of short-term trading, I relate my computed ex-day returns to the corresponding bid-ask spreads. I use this measure as a proxy for transaction cost effects. DataStream provides the posted rather than the effective bid and ask prices. Patersen and Fialkowski (1994) argue that, on the NYSE, when trades are executed inside the posted bid-ask spread, the posted spread is not an accurate measure of transaction costs faced by investors. However, in the European markets posted spreads are likely to be closer to the effective spreads

²⁷ See Brown and Warner (1980, 1985) and MacKinlay (1997)

because, unlike the NYSE, large trades are not negotiated upstairs but brought directly to the market makers and filled immediately. Moreover, market makers have to display firm bid and ask prices for no less than the *minimum marketable quantity*²⁸ (*MMQ*) and, unlike, for example in the NASDAQ where market makers may “back away” from trading at posted prices, they are obliged to buy and sell up to that quantity at their quoted prices. Furthermore, unlike the retail oriented NASDAQ market, over 60 percent of the trading on European markets is done by institutions that demand immediacy. Empirical evidence shows that even in the UK transactions are commonly made in other markets such as the London Stock Exchange within the spread and that dealers offer systematic discounts from posted prices on medium to large trades (e.g. Schwartz, (1991) and Reiss and Warner, (1994)). Thus if trading activity increases around the ex-dividend day, the posted bid and ask prices are not likely to reflect the effective transaction costs but only data on the observed bid and ask prices is available. I, therefore, compute the bid-ask spread on the ex-day, BAS_{ex} , rather than the average over a specified period, as in, e.g., Karpoff and Walking (1990) as follows:

$$BAS_{ex} = \frac{ASK_{ex} - BID_{ex}}{(ASK_{ex} + BID_{ex})/2} \quad (7)$$

where, ASK_{ex} and BID_{ex} are the ex-day bid and ask prices respectively.²⁹ I expect short-term traders to capture dividends of high-yield-low-bid-ask spread shares. If short-term traders capture dividends of these shares, then their abnormal returns should be positive (negative) before (after) the ex-days.

3.5 EMPIRICAL RESULTS

3.5.1 COUNTRY ANALYSIS OF EX-DIVIDEND DAY BEHAVIOR

Table 3.1, Panel A reports the abnormal returns (ARs) based on the market model. On day zero the abnormal returns are all positive and significant suggesting that ex-dividend day prices decrease by less than the amount of the dividend in each country. The highest ex-day returns appear to be in France with 1.29 percent ($t = 4.97$), followed by Italy with 0.79 percent ($t = 3.95$) and UK 0.75 percent ($t = 3.56$) and, finally, Germany with 0.57 percent ($t = 2.57$). These results are consistent with previous studies. For example, Lasfer (1995) and Bell and Jenkinson (2002) show that ex-day prices decrease by significantly less than the amount of

²⁸ The minimum marketable quantity, referred to as the Normal Market Size (NMS), is a dealing size set by the exchange's council at about the median transaction size.

²⁹ An alternative measure for transaction costs is trading volume. Trading volume is shown to be negatively related to transaction costs (Loeb (1983)) and this proxy was widely used in past research (e.g. Lakonishok and Vermaelen (1986) and Fedenia and Grammatikos (1991)). However, data on this variable is not available for many companies and for other countries other than the UK.

dividend in the UK while Harris et al (1998) show that the imputation credit in Germany is capitalized in share prices. The results are also consistent with the US studies (e.g. Eades et al (1984)) and reject the hypothesis of non-excess returns on the ex-dividend dates and counter the argument that shareholders are indifferent to the differential taxation of dividends and capital gains (e.g. Miller and Scholes (1978)). Interestingly, in five days before and five days after the ex-dividend dates, none of the abnormal returns are statistically significant.

In **Table 3.1, Panel B**, I test for robustness of these results using alternative event study methodologies. The results based on the raw returns, the adjusted market model (with beta equal to 1 and alpha equal to zero), the mean adjusted returns and the Scholls and Williams and Dimson specifications all show that ex-day returns are positive and significant. These results provide an early indication that the differential taxation between dividends and capital gains is the main driver of the ex-dividend day returns.

Furthermore, I investigate the tax hypothesis by analyzing the behavior of share prices around the ex-dividend days. **Figures 3.1 to Figure 3.4** report the abnormal returns and the cumulative abnormal returns over the period [-20, +20] days for each of the countries in my sample. As documented in **Table 3.1**, all the figures show positive abnormal returns on the ex-dividend dates. However, in all markets there seem to be a positive trend in share prices before the ex-dividend dates and a downward trend in the post-ex-dividend dates. **Figure 3.1** reports the results for the UK market. There is no major change in returns before day -10, but then returns increase about 0.4 percent up to day -1. In the post ex-dividend dates share prices appear to fall. I test whether this abnormal performance in the pre- and post- ex-dividend dates is significant by analyzing the CARs around the ex-dates. The results reported in **Table 3.2** indicate that none of the CARs in the pre- and post- event dates is significant despite being mainly positive in the pre-event and negative in the post-event dates. For example, over the period [-40, -1] the CARs in the UK amount to 0.32 percent ($t = 0.24$) and in the post-event period [+1, +40] they are -1.398 percent ($t = -1.05$). These results are relatively the same across different cumulation periods and are consistent with previous UK evidence (e.g. Lasfer, 1995) but do not provide support to US studies (e.g. Lakonishok and Vermaelen, 1986, Michaely, 1991) where the significant abnormal returns are not solely confined to the ex-dividend dates. Therefore, the results suggest that ex-dividend day returns in the UK are likely to be driven by tax differentials between dividends and capital gains and not by short-term traders.

In contrast, in Germany, ex-day returns in the pre- and post- event periods are not randomly distributed. **Figure 3.2** shows a significant increase in the abnormal returns in the pre-event period and then a decrease in the post-event period. **Table 3.2** reports the magnitude of the CARs

over different cumulating periods and their respective t-statistics. Over the periods [-20, -1] and [-5, -1] the CARs are not statistically significant. However, CARs_[-40, -1] are positive and significant and in the post-event periods the CARs are all negative and significant. In particular, over the periods [-40, -1], and [+1, +40] the CARs are 3.30 percent ($t = 2.37$) and -2.75 percent ($t = -1.98$), respectively. These results indicate that in Germany dividend capture is predominant and that ex-day returns may not reflect solely the tax differential between dividends and capital gains. Moreover, these results, suggest that investors buy shares in the pre-event period and sell their shares after the ex-dividend day in order to capture the dividend. These investors are likely to be corporate and individual non-residents who transfer their shares to German residents who are entitled to the dividend and tax credits.³⁰ Since in Germany dividend stripping is legal, such transfer creates positive excess returns in the pre-event period and negative returns in the post-event period. The results are consistent with McDonald (2001) who finds evidence of tax motivated trading around the ex-dividend day.

The results for the French market reported in Figure 3.3 mimic those of the UK (Figure 1). There is a slight increase in the abnormal returns over the period -10 to -1 and in the post-ex-dividend dates, the abnormal returns appear to drift down. However, Table 3.2 shows that none of the abnormal returns are significantly different from zero in the pre- and post-event dates. Over the period [-40, -1] share prices increase by 0.72 percent ($t = 0.44$) and fell by -1.84 percent ($t = -1.12$) over the period [+1, +40]. Thus, despite being a legal practice, dividend capture is not common in France and, thus, ex-day returns may only reflect the tax differential between dividends and capital gains. These results are consistent with Romon (2000) who shows that ex-prices in France decrease significantly by less than the amount of the dividend.

Figure 3.4 reports the results for Italy. The abnormal returns appear to be non-random in the pre- and post- event period. They increase by about 0.6 percent in the period [-20, -1] and then decrease from about 1.2 percent on day +1 to 0,2 percent on day +20. However, Table 3.2 indicates that the CARs are only statistically significant in the period [+1, +40]. To the extent that the negative abnormal performance in the post-event dates reflects the selling pressure of short-traders, or results provide support to Michaely and Murgia (1995) ex-dividend excess returns in Italy might be due to high transaction costs. However, this activity does not seem to dominate as the pre- and post-ex-day abnormal returns are not all significant despite the fact that dividend capture is allowed in Italy. Therefore, the results are likely to reflect the tax discrimination between dividends and capital gains and do not provide support to Michaely and Murgia (1995)

³⁰ See Chapter 2, Section 2.4.2 for a full discussion on the treatment of dividends when investors are corporations or non-German residents. Moreover, Table 2.2 shows the shareholder structure in Europe and indicates that these two

who, despite finding some of the ex-day pricing is tax motivated, conclude that taxes do not explain fully the ex-dividend price drop.

classes of investors hold an important share of the German market: corporations hold 39 percent and foreign investors hold 12 percent of the market.

TABLE 3.1: EX-DIVIDEND DAY ARS AND CARs IN THE UK, GERMANY, FRANCE AND ITALY FOR THE PERIOD 1987 TO 2002

In panel A. the Average Abnormal Returns (ARs) are calculated using the Market Model over an event window from day -40 to day +40, with the ex-dividend day being day 0. Market Model coefficients are calculated by regressing the security returns against the main index of the country, such as the Financial Times All Share Index in the UK, using -290 to -41 trading days relative to the ex-day. In Panel B. I test for robustness by calculating the abnormal returns using alternative event studies methodologies. Raw is the raw returns, ARB1 is the Market Adjusted Returns with Beta equal to 1, MAR is the Mean Adjusted Returns, AR Scholls is the Scholls and Williams method and AR Dimson is the Dimson method. T-Stat are the t-statistics; *** Significant at 0.01 level, ** Significant at 0.05 level and * Significant at 0.1 level.

DAYS	UNITED KINGDOM			GERMANY			FRANCE			ITALY		
	ARS %	T-STAT	ARS %	ARS %	T-STAT	ARS %	ARS %	T-STAT	ARS %	T-STAT	ARS %	T-STAT
	PANEL A. ABNORMAL RETURNS AROUND EX-DIVIDEND DATES USING MARKET MODEL											
-5	0.102	0.49	0.085	0.39	0.067	0.26	0.024	0.12	0.024	0.12	0.024	0.12
-4	0.001	0.01	0.116	0.53	-0.002	-0.01	0.034	0.17	0.034	0.17	0.034	0.17
-3	-0.015	-0.07	0.045	0.21	0.017	0.07	0.069	0.35	0.069	0.35	0.069	0.35
-2	0.050	0.24	0.095	0.43	0.065	0.25	0.041	0.21	0.041	0.21	0.041	0.21
-1	0.026	0.12	0.074	0.34	0.087	0.34	0.039	0.19	0.039	0.19	0.039	0.19
0	0.749***	3.56	0.566***	2.57	1.288***	4.98	0.792***	3.95	0.792***	3.95	0.792***	3.95
1	-0.063	-0.30	-0.289	-1.32	-0.196	-0.76	-0.158	-0.79	-0.158	-0.79	-0.158	-0.79
2	-0.007	-0.03	-0.351	-1.59	-0.126	-0.48	-0.145	-0.72	-0.145	-0.72	-0.145	-0.72
3	-0.006	-0.03	-0.094	-0.43	-0.147	-0.57	-0.201	-1.01	-0.201	-1.01	-0.201	-1.01
4	0.036	0.17	-0.160	-0.73	-0.036	-0.14	-0.053	-0.27	-0.053	-0.27	-0.053	-0.27
5	-0.031	-0.15	-0.015	-0.07	-0.082	-0.32	-0.121	-0.60	-0.121	-0.60	-0.121	-0.60
	PANEL B. ABNORMAL RETURNS ON THE EX-DIVIDEND DATES USING ALTERNATIVE MODELS											
RAW	0.798***	3.80	0.555***	2.52	1.304***	5.03	0.651***	3.25	0.651***	3.25	0.651***	3.25
ARB1	0.823***	3.92	0.558***	2.54	1.257***	4.85	0.927***	4.63	0.927***	4.63	0.927***	4.63
MAR	0.753***	3.59	0.552***	2.51	1.281***	4.94	0.626***	3.12	0.626***	3.12	0.626***	3.12
AR SCHOLLS	0.704***	3.35	0.522***	2.38	1.191***	4.60	0.809***	4.04	0.809***	4.04	0.809***	4.04
AR DIMSON	0.685***	3.26	0.524***	2.38	1.419***	5.48	0.845***	4.22	0.845***	4.22	0.845***	4.22

TABLE 3.2: CARs MEASURES IN DIFFERENT EVENT WINDOWS

The table reports the Cumulative Abnormal Returns in the UK, Germany, France and Italy using different event windows. CARs are based on the market model and are calculated over 5, 20 and 40 days on either side relative to the Ex-dividend day. The Market Model coefficients are calculated by regressing the security returns against the main index of the country, such as the Financial Times All Share Index in the UK, using -290 to -41 trading days relative to the ex-day. T-statistics in the parenthesis; *** Significant at 0.01 level, ** Significant at 0.05 level and * Significant at 0.1 level.

EVENT WINDOW	CARs $_{-40,-1}$ %	CARs $_{-20,-1}$ %	CARs $_{-5,-1}$ %	CARs $_{+1,+5}$ %	CARs $_{+1,+20}$ %	CARs $_{+1,+40}$ %
UK	0.322 (0.24)	0.395 (0.42)	0.164 (0.35)	-0.070 (-0.15)	-0.544 (-0.58)	-1.398 (-1.05)
GERMANY	3.30*** (2.37)	1.309 (1.33)	0.415 (0.84)	-0.909** (-1.85)	-1.80** (-1.83)	-2.750* (-1.98)
FRANCE	0.722 (0.44)	0.513 (0.44)	0.236 (0.41)	-0.585 (-1.01)	-1.092 (-0.94)	-1.838 (-1.12)
ITALY	0.853 (0.67)	0.589 (0.66)	0.207 (0.46)	-0.678 (-1.51)	-1.182 (-1.32)	-2.29** (-1.81)

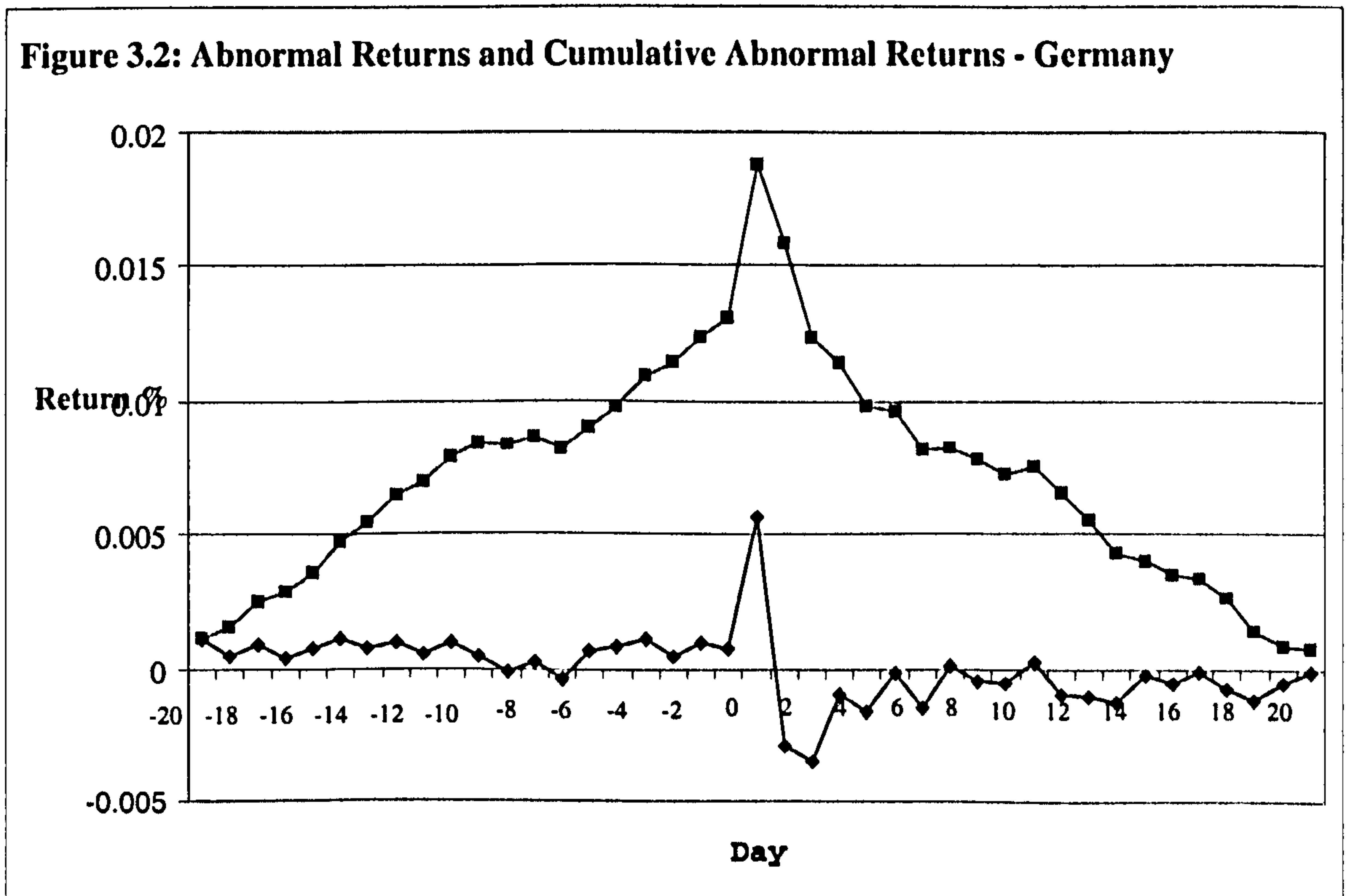
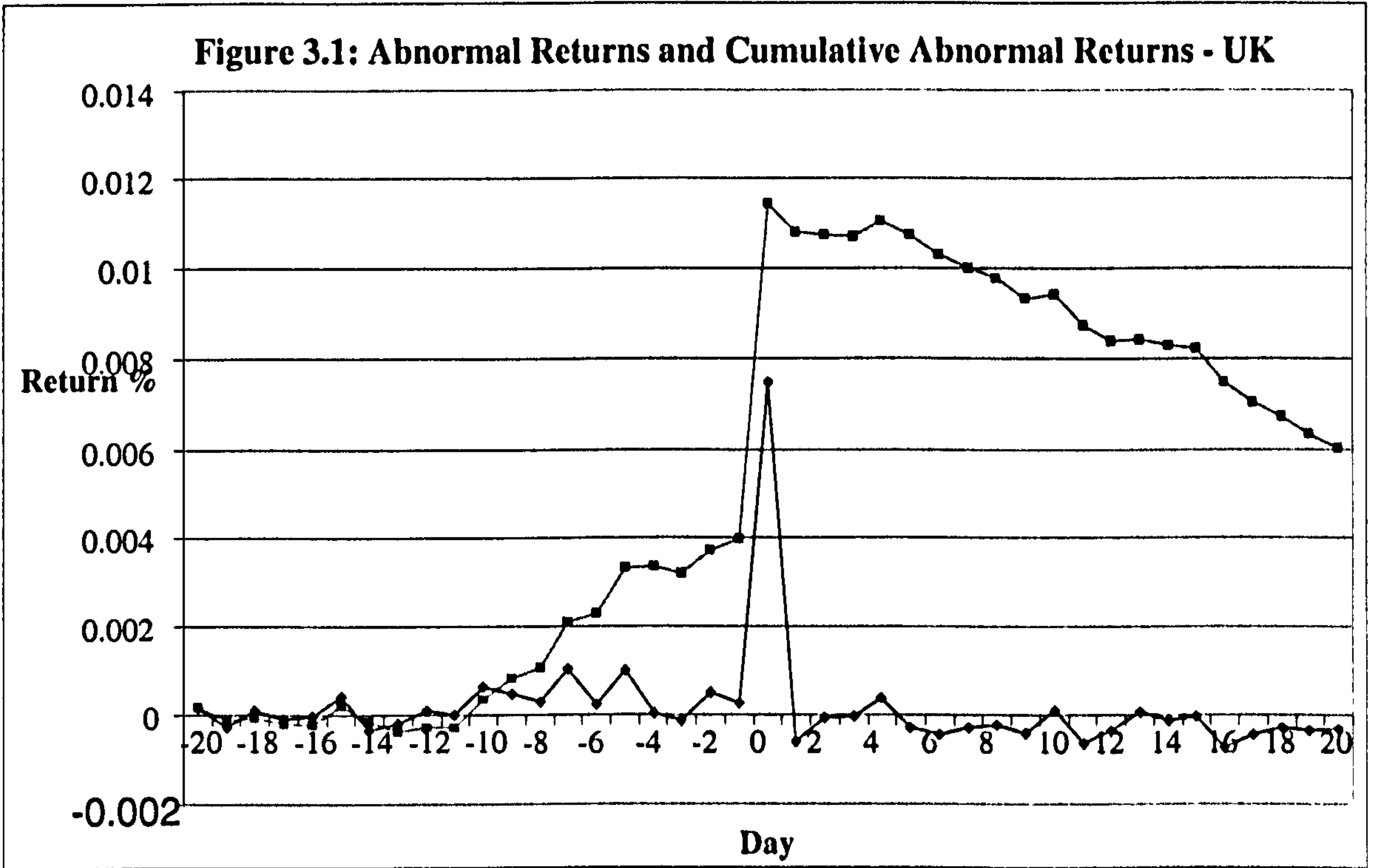


Figure 3.3: Abnormal Returns and Cumulative Abnormal Returns - France

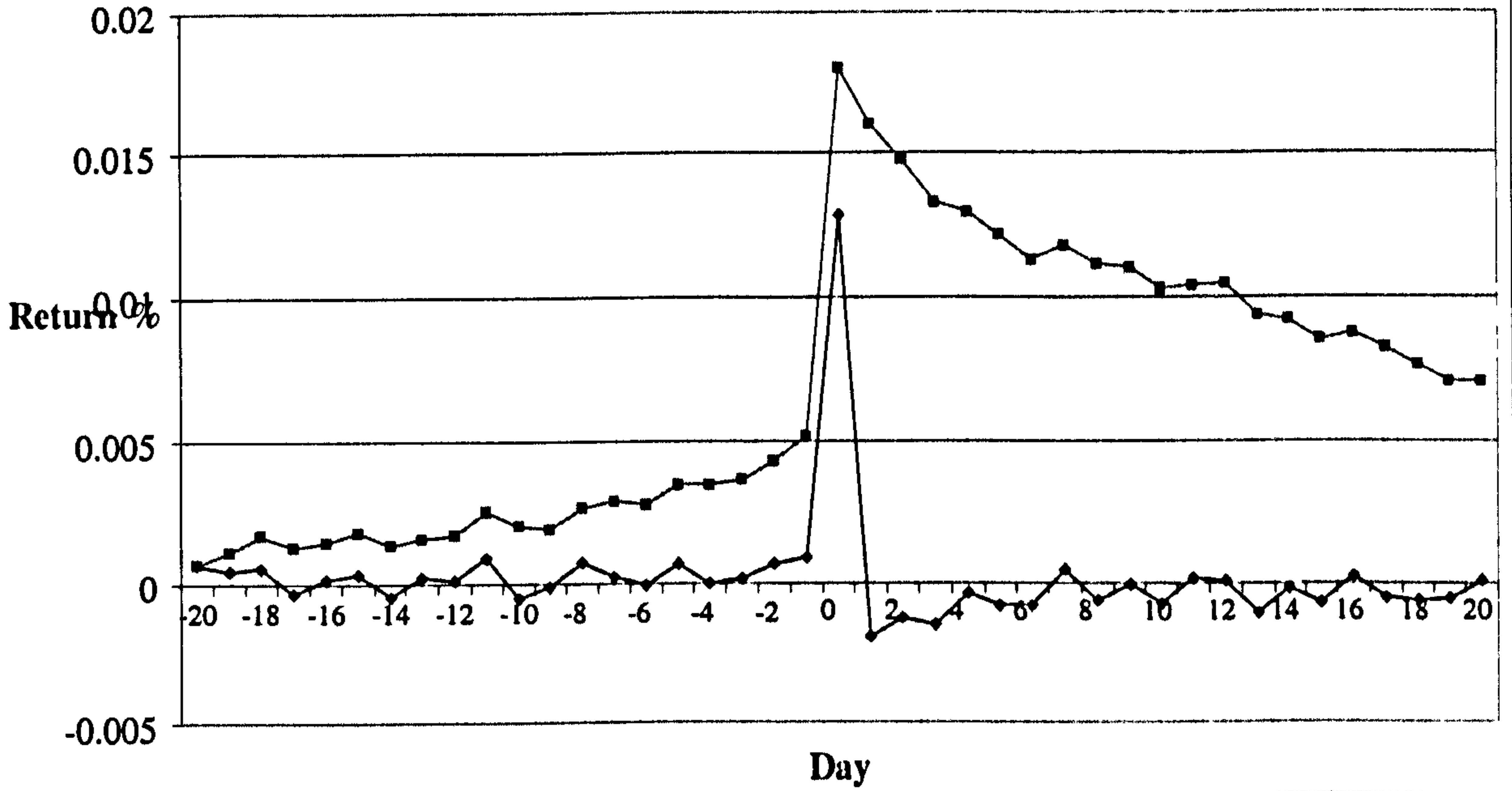
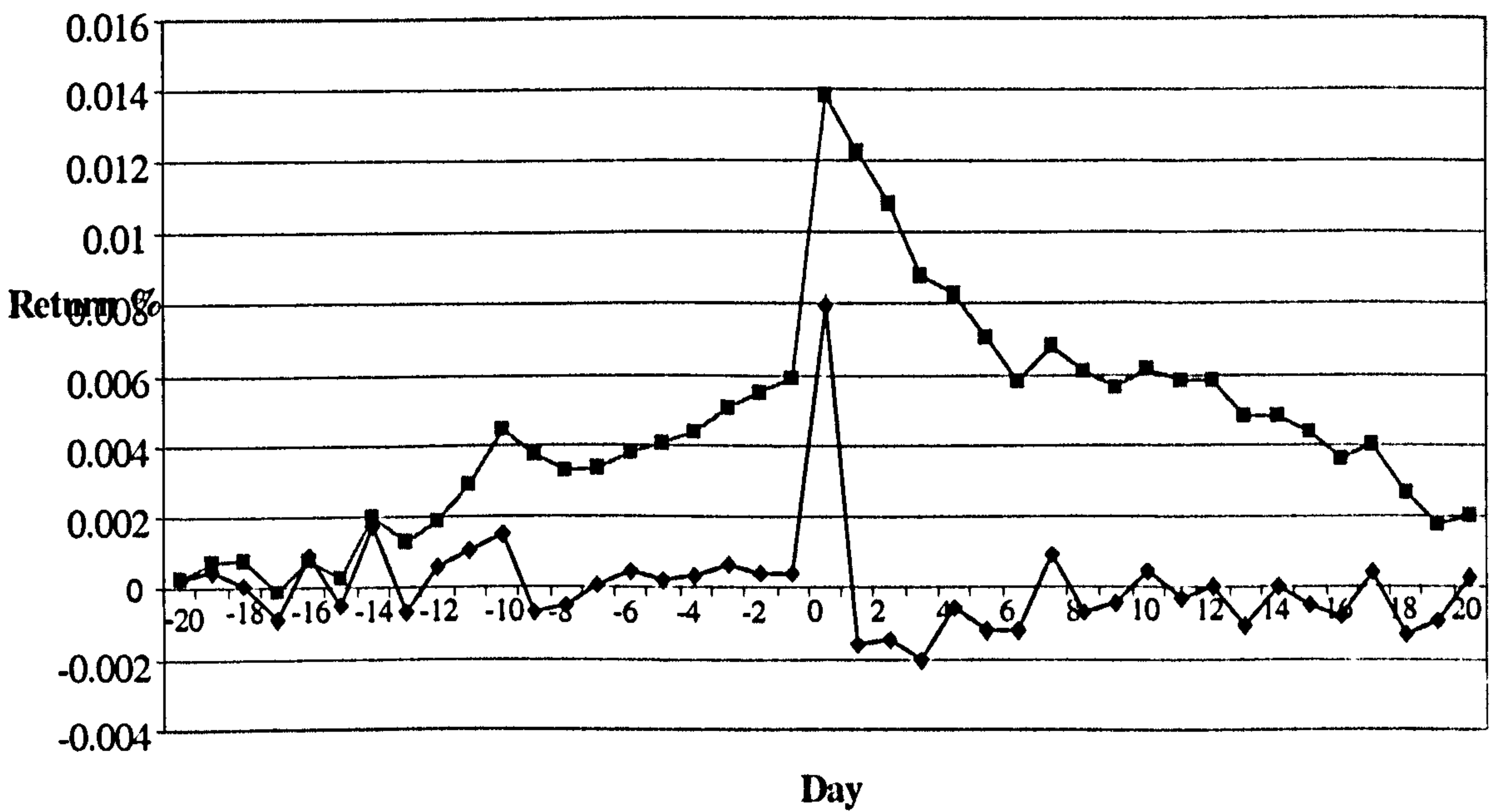


Figure 3.4: Abnormal Returns and Cumulative Abnormal Returns - Italy



3.5.2 COMPARATIVE ANALYSIS OF EX-DIVIDEND DAY RETURNS ACROSS COUNTRIES

In this section I compare the returns on the ex-dividend dates and around event dates across the countries in my sample. I test the hypothesis stipulated above that the differences in ex-day returns across countries are related to the differences across these countries in the tax discrimination variable. **Table 3.3**, duplicates results from **Chapter 2**, and provides a summary of the tax differential differences across the countries in my sample. On average, if ex-day returns are set by higher taxpayers, then ex-day returns should be higher in Germany and France to the remaining countries. In contrast, if ex-day share prices are set by tax exempt investors and/or basic taxpayers, then ex-day returns should be higher in Italy when share prices should fall by the amount of the dividend compared to other countries where share prices should fall by more than the amount of the dividend.

Table 3.4 provides a comparison of the ex-dividend dates abnormal returns and cumulative abnormal returns ($CAR_{s-20, -1}$ and $CAR_{s+1, +20}$) between the four countries under consideration. The results provided in the first three columns of the Table show that ex-day returns in France are significantly higher than other countries. In particular, the ex-day abnormal returns in France are higher by 0.54 percent ($t = 2.64$) than the UK, 0.72 percent ($t = 3.48$) than Germany and 0.49 percent ($t = 2.29$) in Italy. The ex-day returns in Italy are statistically the same ($t = 0.42$) as compared to the UK. Finally, results suggest that in Germany ex-day returns are low and they are likely to under-estimate the tax differential between dividends and capital gains.

The remaining columns of **Table 3.4** show the differences across countries in the pre- and post-event abnormal returns. The results show that Germany has statistically higher abnormal returns in the pre-event period and lower abnormal returns in the post-event period than the UK, France and Italy. For example, compared to the UK, the abnormal returns over the $[-20, -1]$ period are 0.91 percent ($t = 5.25$), but lower in the post event period $[+1, +20]$ (difference in the means of 1.225 percent, $t = 6.53$). In the post-event period, the abnormal returns in the UK are also statistically lower than those in France and Italy, suggesting that the UK short-term traders are not likely to capture dividends.

TABLE 3.3: THE TAX DISCRIMINATION VARIABLE

The tax discrimination variable is the ratio of the after-income tax on dividends over the after-tax capital gains assuming that 1 unit of dividends generates 1 unit of capital gains if reinvested in the company. The standard rate of capital gains is assumed to be equal to the effective rate.

PERIODS	DATES	HIGHER TAX PAYER	BASIC TAX PAYER	TAX-EXEMPT	
<u>PANEL A: THE UK SYSTEM</u>					
1	6 Apr 88 - 31 Mar 94	1.333	1.333	1.333	
2	1 Apr 94 - 1 Jul 97	1.250	1.250	1.250	
3	2 Jul 97 - 5 Apr 99	1.250	1.250	1.000	
4	6 Apr 99 - 31 Dec 02	1.125	1.000	1.000	
<u>PANEL B.1: GERMAN SYSTEM ASSETS QUALIFY FOR CAPITAL GAINS TAX EXEMPTION</u>					
1	1 Jan 88 - 31 Dec 90	0.500	0.886	1.136	
2	1 Jan 91 - 31 Dec 93	0.508	0.875	1.080	
3	1 Jan 94 - 1 Oct 98	0.496	0.854	1.054	
4	1 Nov 98 - 31 Dec 02	0.548	0.864	1.167	
<u>PANEL B.2: GERMAN SYSTEM SHORT - TERM HOLDING PERIOD</u>					
1	1 Jan 88 - 31 Dec 90	1.136	1.136	1.136	
2	1 Jan 91 - 31 Dec 93	1.080	1.080	1.080	
3	1 Jan 94 - 1 Oct 98	1.055	1.055	1.054	
4	1 Nov 98 - 31 Dec 02	1.166	1.166	1.167	
<u>PANEL C: FRENCH SYSTEM (BASIC RATE IS 35%)</u>					
1	1 Jan 88 - 31 Dec 92	0.674	1.014	1.250	
2	1 Jan 93 - 1 Oct 97	0.899	1.352	1.667	
3	1 Nov 97 - 31 Dec 98	0.957	1.352	1.667	
4	1 Jan 99 - 31 Dec 02	1.667	1.896	1.667	
<u>PANEL D. ITALIAN SYSTEM</u>					
		HIGHER	BASIC (36%)	LOWER	TAX - EXEMPT
1	1 Jan 88 - 31 Mar 91	1.463	1.092	1.092	1.000
2	1 Apr 91 - 30 Jun 95	0.956	0.976	1.311	1.000
3	1 Jul 95 - 31 Jan 99	0.941	0.941	1.284	1.000
4	1 Feb 99 - 31 Dec 02	1.407	1.275	1.563	1.000

TABLE 3.4: COMPARISONS OF THE EUROPEAN EX-DIVIDEND DAY ARS AND CARs

Table compares the Ex-Dividend Day ARs and CARs in the UK, Germany, France and Italy. T-statistics reported in the parenthesis; **** Significant at 0.01 level, ** Significant at 0.05 level and * Significant at 0.1 level.

<u>BENCHMARK</u>	EX-DIVIDEND DAY ARs			CAR _{-20,-1}			CAR _{+1,+20}		
	GERMANY	FRANCE	ITALY	GERMANY	FRANCE	ITALY	GERMANY	FRANCE	ITALY
UK	0.183** (2.27)	-0.540* (-2.64)	-0.043 (-0.42)	-0.914*** (-5.25)	-0.118 (-0.64)	-0.193 (-0.90)	1.225*** (6.53)	0.548*** (2.75)	0.638*** (2.93)
GERMANY		-0.723* (-3.48)	-0.227** (-2.08)		0.796 (3.83)	0.720*** (3.06)		-0.705*** (-2.86)	-0.615*** (-2.35)
FRANCE			0.496** (2.29)			-0.076 (-0.31)			0.090 (0.34)

3.5.3 IMPACT OF MAJOR TAXATION CHANGES ON EX-DIVIDEND DAY RETURNS

The present part of the study analyses the behavior of share prices around the ex-dividend day both before and after major taxation reforms in each country under consideration in order to further test the impact of taxation on the share prices around the event day. The ratio of the ex-dividend day price drop to the amount of the dividend is expected to reflect the relative taxation of dividends and capital gains of the clientele investor. Support of this argument would require a rejection of the null hypothesis³¹ $H_0: AR_{BTR} \leq AR_{ATR}$ in favor of the alternative $H_1: AR_{BTR} = AR_{ATR}$ whenever taxation reforms affect the investors' tax discrimination variable. **Table 3.3** shows the changes on the investors' tax discrimination variable in each country under consideration both before and after major tax reforms. To examine the effect of taxation reforms on the ex-dividend day share price behavior the study period was divided into sub periods, before and after major tax reforms and the differences in the AR and CAR behavior between the sub-periods was derived. The t-statistics report the significance level of the mean differences between the pre- and post- tax reform periods around the ex-dividend days.

Table 3.5 reports the distribution of the abnormal returns by tax period. For the UK the ex-dividend date abnormal returns are all positive and significant. However, their magnitude is not constant. They increase monotonically from 0.37 percent in the first period (1988 to March 1994), to 0.70 percent in the second period (April 1994 to July 1997). Then as the tax credit is eliminated to pension funds, ex-day returns increased to 0.95 percent and to 1.17 percent in the last period when the tax credit is eliminated to all investors. In **Panel B**, I report the t-statistics of the differences in means between the tax periods. The average abnormal returns in the first period are statistically lower than the ex-day returns in the remaining period. As shown in **Table 3.3**, the tax discrimination variable of all investors in the first period is higher than the remaining periods because of the high rate of the dividend tax credit. When the tax credit was cut in 1994 from 25 percent to 20 percent, ex-day returns increased from 0.37 percent to 0.70 percent. They then increased to 0.95 percent when the tax credit was eliminated to pension funds in July 1997 and to 1.169 percent when it was cut for the remaining investors to only 10 percent. However, the difference in the mean ex-day abnormal returns between the last two periods is not statistically significant, suggesting that the marginal investors that set the ex-day returns continue to be pension funds. These results suggest that the UK tax reforms that altered the tax differential between dividends and capital gains, had a significant impact on the ex-dividend day pricing.

Table 3.5 also reports the behavior of share prices in the twenty days before and after the ex-dividend dates. I test the hypothesis that following the increase in the overall tax of dividends, ex

day returns will increase and this will attract short-term traders. The second and third columns of **Table 3.5** show that over the different tax periods, the pre-ex-day returns and the post-ex-day returns are negative suggesting that investors may be buying shares before and selling them after the ex-dividend dates. Although the results indicate that the magnitude of the pre- and post-ex-day cumulative abnormal returns has increased over the 4 periods, none of the abnormal returns is significant to indicate that the buying and selling pressure affected the returns.

In Germany, ex-day returns are not statistically significant in the first period (1988 to December 1990) and they become positive and significant but remain relatively constant in the remaining periods. **Panel B** indicates that the abnormal returns in the first period are statistically lower than the remaining periods. The trend in the abnormal returns over the first three taxation periods is likely to be consistent with the impact of the tax changes on the tax discrimination variable described in **Table 3.3**. However, if taxation was the sole determinant of ex-dividend day returns, one would expect a decrease in the ex-day returns in the fourth period (November 1998 to August 2002) as the tax discrimination increased for all investors. I also expect ex-dividend day returns in Germany to be significantly higher than those in the UK to reflect the tax discrimination differences reported in **Table 3.3**. For example, in the fourth period ex-day returns in the UK are 1.17 percent compared to 0.74 percent in Germany ($t = 2.69$). However, these low abnormal returns in Germany are likely to be depressed by short-term traders. As reported in the fifth and sixth column of **Table 3.5** $CAR_{s-20, -1}$ are positive but not significant and the $CAR_{s+1, +20}$ are negative and most of them are significant.

In France, ex-day returns have decreased significantly over the three periods from 2.61 percent ($t = 10.07$) in 1988-1992 to -0.11 ($t = -0.43$) in the last period. These results reflect the increase in the tax discrimination variable documented in **Table 3.3**. For example, for high taxpayers, the tax discrimination variable increased from 0.67 percent in the first period (1988 to December 1992), to 1.67 percent in the last period implying that the tax cost of dividends has decreased. As a result, ex-day prices appear to fall by the amount of the dividend. Although the CARs are positive in the pre- and negative in the post-event period, they do not show strong evidence to support significant trading to capture dividends, particularly in the first two periods when ex-day returns are large.

Finally, in Italy, ex-day returns increased from 0.35 percent in the first period (1988 to March 1991) to 1.08 percent in the second period (April 1991 to June 1995). Afterwards, there is a decrease to 0.54 percent, in the third period (July 1995 to January 1999) before rising to 1.37 percent in the final period (February 2000 to August 2002).

³¹ Where AR_{BTR} and AR_{ATR} are AR Before and After Taxation Reforms respectively.

These results are not consistent with the changes in the tax discrimination variable in **Table 3.3** which predict that ex-day returns should be low in the first and last period and relatively the same in the remaining two periods in non-tax exempt investors determine ex-dividend day returns. The pre- and post-ex-day returns are not statistically significant, suggesting that short-term trading activity is not likely to prevail in Italy.

TABLE 3.5: THE EX-DAY ARS AND CARS BEFORE AND AFTER MAJOR TAXATION REFORMS IN THE UK, GERMANY, FRANCE AND ITALY FOR THE PERIOD 1987 TO 2002

The abnormal returns are based on the Market Model with the coefficients calculated by regressing the security returns against the main index of in each country using -290 to -41 trading days relative to the ex-day. Taxation periods reflect the periods before and after major taxation changes; In the UK, Period 1: April 1988 to March 1994 (N= 3540), Period 2: 1 April 1994 to 6 July 1997 (N= 2321), Period 3: 7 July 1997 to 5 April 1999 (N = 1448), and Period 4: 6 April 1999 to August 2002 (N = 2776); In Germany, Period 1: January 1988 to December 1990 (N = 351), Period 2: January 1991 to December 1993 (N = 592), Period 3: January 1994 to October 1998 (N = 964), and Period 4: November 1998 to August 2002 (N = 1002); In France, Period 1: January 1988 to December 1992 (N = 469), Period 2: January 1993 to October 1997 (N = 1297), Period 3: November 1997 to December 1998 (N = 353), and Period 4: January 1999 to August 2002 (N = 1397); In Italy Period 1: January 1988 to March 1991 (N = 211), Period 2: April 1991 to June 1995 (N = 314), Period 3: July 1995 to January 1999 (N = 270), and Period 4: February 1999 to August 2002 (N = 441). T-statistics reported in the parenthesis; *** Significant at 0.01 level, ** Significant at 0.05 level and * Significant at 0.1 level.

TAXATION PERIODS	UNITED KINGDOM			GERMANY			FRANCE			ITALY		
	ARS (T-STAT)	CARS _{t-20,t-1} (T-STAT)	CARS _{t+1,t+20} (T-STAT)	ARS (T-STAT)	CARS _{t-20,t-1} (T-STAT)	CARS _{t+1,t+20} (T-STAT)	ARS (T-STAT)	CARS _{t-20,t-1} (T-STAT)	CARS _{t+1,t+20} (T-STAT)	ARS (T-STAT)	CARS _{t-20,t-1} (T-STAT)	CARS _{t+1,t+20} (T-STAT)
PANEL A. ABNORMAL RETURNS												
1	0.367* (1.75)	0.170 (0.18)	-0.207 (-0.22)	0.154 (0.70)	1.070 (1.09)	-1.166 (-1.19)	2.609*** (10.07)	0.409 (0.35)	-1.330 (-1.15)	0.351* (1.75)	0.386 (0.43)	-0.836 (-0.93)
2	0.702*** (3.34)	0.074 (0.08)	-0.501 (-0.53)	0.539*** (2.45)	1.185 (1.21)	-1.792** (-1.82)	2.162*** (8.35)	0.420 (0.36)	-0.845 (-0.73)	1.080*** (5.39)	0.614 (0.69)	-1.368 (-1.53)
3	0.949*** (4.52)	1.414 (1.51)	-0.320 (-0.34)	0.551*** (2.50)	1.250 (1.27)	-1.592 (-1.62)	1.861*** (7.19)	0.565 (0.49)	-2.090** (-1.80)	0.540*** (2.70)	0.501 (0.56)	-0.888 (-0.99)
4	1.169*** (5.57)	0.421 (0.45)	-1.127 (-1.20)	0.740*** (3.37)	1.523 (1.55)	-2.044** (-2.08)	-0.110 (-0.43)	0.620 (0.54)	-0.988 (-0.85)	1.366*** (6.82)	0.733 (0.82)	-1.395 (-1.56)
PANEL B. T-STATISTICS OF DIFFERENCES IN MEANS												
T- P1-P2	-2.50***	0.42	1.54	-2.43***	-0.23	0.22	0.63	-0.02	-0.97	-0.12	-0.46	0.80
T- P1-P3	-3.78***	-3.71***	0.41	-2.47***	-0.39	-0.13	0.74	-0.24	1.11	1.97**	-0.23	0.08
T- P1-P4	-5.97***	-0.88	3.67***	-3.27***	-0.96	0.68	4.55***	-0.41	-0.64	0.29	-0.69	0.90
T- P2-P3	-1.66*	-3.96***	-0.65	-0.08	-0.17	-0.44	0.33	-0.27	2.10***	2.17***	0.21	-0.85
T- P2-P4	-3.64***	-1.20	2.46***	-1.21	-0.85	0.51	5.26***	-0.57	0.34	0.46	-0.25	0.05
T- P3-P4	-1.49	2.62***	2.51***	-1.12	-0.80	1.09	2.35***	-0.10	1.78*	-1.97**	-0.43	0.98

3.5.4 THE DISTRIBUTION OF EX-DAY RETURNS BY YIELD AND BID-ASK SPREAD

Table 3.6 reports the distribution of ex-day returns by dividend yield and tax periods. The sample firms are first classified into their respective tax periods and then ranked according to their dividend yield computed as the ratio of the total dividend for the year over the price cum-dividends. In general, the dividend yield effect in the UK is clear and its absence in Germany also. This is strong evidence of different motivations in the two countries. **Panel A** shows the results for the UK. Ex-dividend day returns increase monotonically across the dividend yield quintiles in each tax period. In the first period, the ex-day returns are negative for the first four dividend yield quintiles. In the second two periods, ex-day returns are not statistically different from zero. I also note that for the first four dividend yield quintiles, the ex-day abnormal returns are increasing across the tax periods. In contrast, for the highest dividend yield quintile, ex-day returns have decreased from 4.95 percent (median 3.49 percent) in the first period to 1.47 percent (median 1.14 percent) in the last period.

Panel B reports the results for Germany. Ex-dividend day returns do not follow a homogeneous pattern of behaviour across tax periods. Abnormal returns in the first and third dividend yield quintiles increase monotonically across taxation periods. However, in the second and fourth dividend yield quintiles, abnormal returns increase in the first two taxation periods, decrease in period 3 and then increase again in the last taxation period. In the high-dividend yield quintile, abnormal returns increase across the first three taxation periods, while there is a decrease in period 4. Similarly, within dividend yield quintiles the ex-dividend abnormal returns do not appear to follow a homogeneous pattern of behaviour. In the first taxation period, ex-dividend day abnormal returns in the third dividend yield equal to 0.59 percent ($t = 2.69$), however, abnormal returns in any other dividend yield quintile are not significant. In the second taxation period, abnormal returns are significant and increase across dividend-yield quintiles. However, high dividend-yield abnormal returns decrease to 0.54 percent ($t = 2.47$) from 0.95 percent ($t = 4.33$) in the fourth quintile. In the third taxation period, there is evidence of taxation effect, as abnormal returns increase across the dividend yield quintiles. Finally, period 4, ex-day abnormal returns in the second dividend-yield quintile equal to 0.45 percent ($t = 2.03$), increase to 1.26 percent ($t = 5.73$) in the fourth yield quintile, but decrease again to 0.53 percent ($t = 2.39$) in the high dividend-yield quintile.

Panel C reports the results for France. Across all taxation periods, ex-dividend day abnormal returns in the low dividend yield quintile are negative and insignificant. In the other dividend yield quintiles abnormal returns are significantly negative, except in the high dividend yield quintile where there is a significantly positive ex-day share price reaction. In the first taxation period, abnormal returns follow a decreasing pattern of behaviour in the first four dividend yield

quintiles. In the high dividend yield quintile abnormal returns increase to 2.94 percent ($t = 9.83$). In the remaining taxation periods, abnormal returns follow a homogeneous pattern of behaviour across the dividend yield quintiles. There is a decreasing pattern of share price behaviour in the first three dividend yield quintiles. This behaviour is reversed thereafter, as in the fourth dividend yield quintile there is an increase in abnormal returns, while in the high dividend yield quintiles, abnormal returns are significantly positive.

Panel D reports the results for Italy. Across taxation periods, abnormal returns do not follow a homogeneous behaviour. For example, in the low dividend yield quintile, abnormal returns increase in period 2 to 0.42 percent ($t = 2.11$), decrease in period 3 to -2.05 percent ($t = -10.22$) while in period 4 there is no significant ex-dividend day share price reaction. In the high dividend yield quintile, abnormal returns are not significant in period 1, increase to 0.70 percent ($t = 3.30$) in period 2, further increase to 1.81 percent ($t = 9.04$) in period 3, while in period 4 there is a decrease to 1.23 percent ($t = 6.12$). In the taxation periods 1 and 2, abnormal returns increase in the first three dividend yield quintiles, while in the fourth and high dividend yield quintiles there is decreasing share price behaviour. In taxation period 3, there is evidence of ex-dividend day taxation effects, as abnormal returns are positively related in the dividend yield. In taxation period 4, abnormal returns decrease in the third dividend yield quintile, to 0.85 percent ($t = 4.26$), but follow an increasing pattern of behaviour thereafter. High dividend yield companies experience significantly positive abnormal returns equal to 1.23 percent ($t = 6.12$).

In **Table 3.7** I test further the tax hypothesis by relating the ex-dividend day returns to commonly used measures of transaction costs. Following Karpoff and Walking (1996) and Lasfer (1995) I use bid-ask spread as a measure of transaction costs and expect short-term trading to occur mainly in high-yield low-bid-ask spread companies. For these companies abnormal returns are expected to be not significant on the ex-dividend day, significantly positive in the pre-event period and significantly negative in the post-event period. According to the short-term hypothesis, the buying (selling) pressure of short-term traders results in positive (negative) share price reaction in the pre- (post-) ex-day periods. For these companies, ex-day returns will not reflect the tax differential between dividends and capital gains but rather the level of transaction costs incurred by short-term traders.

In the UK there is no evidence to support any dividend capturing activity around the ex-dividend day. The low-yield-high-bid-ask spread companies' abnormal returns equal to -0.56 percent ($t = 2.67$) on the ex-dividend day. However, the significance of the ex-day abnormal returns and the insignificantly positive (negative) share price behaviour in the pre- (post-) event do not provide

any support for the short-term hypothesis. Also in the second, third and fourth dividend yield quintiles, abnormal returns are significantly positive on the ex-dividend day, but insignificant in the days surrounding the event across all bid-ask spread quintiles. High-dividend yield companies earn significant ex-day returns, and insignificant returns in the periods surrounding the event which provide evidence inconsistent with the short-term trading activity.

In Germany, results provide mixed evidence. Low-dividend-yield-high-bid-ask-spread companies earn significant abnormal returns on the ex-dividend day equal to 0.69 percent ($t = 3.14$), returns are not significant during the days -20 to -1, while during the days +1 to +20 abnormal returns equal to -1.97 percent ($t = -2.00$). In the second dividend yield quintile, abnormal returns for the high bid-ask spread companies equal to 0.53 percent ($t = 2.41$) on the event date, 2.16 percent ($t = 2.20$) in the period [-20, -1] days and -2.06 percent ($t = -2.09$) in the period [+1, +20] days. In the third and fourth dividend yield quintile, abnormal returns appear to be positive and significant on the ex-dividend day, insignificant in the pre-event period, but negatively significant in the post-event period. Similarly, in the high dividend yield quintile, low bid-ask spread companies experience positive abnormal returns equal to 1.18 percent ($t = 5.38$) on the event day, but in the days surrounding the event abnormal returns are not statistically different from zero. Ex-dividend day abnormal returns for high bid-ask spread companies equal to 0.54 percent ($t = 2.45$), returns in the pre-event period equal to 1.38 percent but they are not statistically significant ($t = 1.41$) and in the post-event period abnormal returns are statistically negative ($CAR_{+1, +20}$ equal to -2.68 percent, $t = -2.72$). This behaviour might be attributed to the activity of the foreign investors (who are not entitled to any tax credit) to transfer their shares to German investors in order to observe the tax credit attached to their dividends. These results further support my earlier conclusions (Section 3.5.1) and McDonald (2001) who finds evidence of tax motivated trading around the ex-dividend day.

In France, evidence is more consistent with the taxation effect hypothesis than the short-term trading hypothesis. Low-yield-low-bid-ask spread companies experience positive abnormal returns equal to 2.00 percent ($t = 7.69$) on the ex-dividend day, in the days -20 to -1 there is no significant share price reaction and in the days +1 to +20 cumulative abnormal returns equal to -3.27 percent ($t = -2.82$). Low-yield-high-bid-ask-spread companies do not experience any significant share price reaction either on, before or after the ex-dividend day. In the second, third and fourth dividend yield quintiles, there is generally significantly positive share price reaction on the ex-dividend day. In the pre- (post-) event periods companies across all dividend-yield-bid-ask-spread quintiles experience insignificantly positive (negative) abnormal returns. High yield quintile, low bid-ask spread companies earn insignificantly positive abnormal returns (equal to 0.19 percent, $t = 0.72$) on the ex-dividend day and significantly positive returns during days -20

to -1 (equal to 2.75 percent, $t = 2.37$), which indicates consistency with the dividend capturing activity and the buying pressure of short-term traders. However, the insignificantly negative abnormal returns in the post-event period do not allow any support for the short-term trading activity hypothesis. This conclusion is further reinforced by the significance of the ex-dividend day abnormal returns, and the insignificant pre- and post-event share price reaction in the high-dividend-yield-high-bid-ask-spread quintiles.

In Italy, the share price behavior around the ex-dividend day also provides evidence for the taxation effect hypothesis. Low-dividend-yield-high-bid-ask spread companies earn significantly negative abnormal returns on the ex-dividend day as well as in the pre- and post-event periods. High bid-ask spread companies earn insignificantly positive abnormal ex-dividend day returns. Returns in the days before and after the event are also insignificant. The ex-dividend day share price behavior in all the other dividend yield quintiles is positive and significant. In the high dividend yield quintile, low bid-ask spread companies experience positive abnormal returns on the ex-dividend day, equal to 0.54 percent ($t = 2.69$) and the pre-event period (ARs equal to 1.49 percent, $t = 1.66$) but in the post-event period abnormal returns do not appear to be statistically different from zero. High-high-dividend-yield-low-bid-ask-spread companies earn significantly positive abnormal returns in the days -20 to -1 equal to 1.81 percent ($t = 2.02$) and negative abnormal returns during the days +1 to +20 equal to -2.16 percent ($t = 2.42$). However, the significance of the ex-dividend day abnormal returns (0.96 percent, $t = 4.79$) do not provide support for the short-term hypothesis in Italy.

TABLE 3.6: THE DIVIDEND YIELD EFFECT ON THE EX-DIVIDEND DAY ARs AND CARs IN THE UK, GERMANY, FRANCE AND ITALY

The abnormal returns are based on the Market Model with the coefficients calculated by regressing the security returns against the main index of in each country using -290 to -41 trading days relative to the ex-day. The Dividend Yield (DY) is calculated as the [Annual DPS/P₀] where DPS is the Dividend Per Share, on the Ex-Dividend Day ARs and CARs. Taxation periods reflect the periods before and after major taxation changes; In the UK, Period 1: April 1988 to March 1994 (N= 3540), Period 2: 1 April 1994 to 6 July 1997 (N= 2321), Period 3: 7 July 1997 to 5 April 1999 (N = 1448), and Period 4: 6 April 1999 to August 2002 (N = 2776); In Germany, Period 1: January 1988 to December 1990 (N = 351), Period 2: January 1991 to December 1993 (N = 592), Period 3: January 1994 to October 1998 (N = 964), and Period 4: November 1998 to August 2002 (N = 1002); In France, Period 1: January 1988 to December 1992 (N = 469), Period 2: January 1993 to October 1997 (N = 1297), Period 3: November 1997 to December 1998 (N = 353), and Period 4: January 1999 to August 2002 (N = 1397); In Italy Period 1: January 1988 to March 1991 (N = 211), Period 2: April 1991 to June 1995 (N = 314), Period 3: July 1995 to January 1999 (N = 270), and Period 4: February 1999 to August 2002 (N = 441). The firms in the sample are split into equal number of observations to form the dividend yield quintiles. T-statistics is reported in the parenthesis; ***, **, * Significant at 0.01, 0.05 and 0.1 levels, respectively.

DY QUINTILES	PERIOD 1	PERIOD 2	PERIOD 3	PERIOD 4
PANEL A. UK				
1- Low	-1.198*** (-5.70)	-0.210 (-1.00)	-0.130 (-0.62)	0.789*** (3.75)
2	-0.660*** (-3.14)	0.371* (1.77)	0.856*** (4.07)	1.491*** (7.10)
3	-0.810*** (-3.85)	0.442** (2.10)	0.852*** (4.05)	0.940*** (4.47)
4	-0.440** (-2.09)	0.542*** (2.58)	0.952*** (4.53)	1.156*** (5.50)
5 - High	4.947*** (23.54)	2.361*** (11.24)	2.217*** (10.55)	1.470*** (7.00)
PANEL B. GERMANY				
1- Low	-0.496** (-2.25)	-0.249 (-1.13)	0.092 (0.419)	0.565*** (2.57)
2	0.279 (1.27)	0.656*** (2.98)	0.319 (1.46)	0.447** (2.03)
3	0.592*** (2.69)	0.665*** (3.02)	0.703*** (3.19)	1.090*** (4.96)
4	0.172 (0.78)	0.951*** (4.33)	0.887*** (4.03)	1.259*** (5.73)
5 - High	0.252 (1.14)	0.543*** (2.47)	0.819*** (3.72)	0.527*** (2.39)
PANEL C. FRANCE				
1- Low	0.186 (0.72)	-0.207 (-0.80)	0.064 (0.25)	-0.290 (-1.12)
2	-0.524** (-2.02)	-0.378 (-1.46)	-0.635** (-2.44)	-0.683*** (-2.63)
3	-1.118*** (-4.30)	-1.292*** (-4.97)	-1.439*** (-5.54)	-2.129*** (-8.19)
4	-1.581*** (-6.08)	-1.286*** (-4.95)	-1.018*** (-3.92)	-1.554*** (-5.98)
5-High	2.944*** (9.83)	3.284*** (5.13)	4.059*** (5.12)	4.336*** (6.69)
PANEL D. ITALY				
1- Low	0.331* (1.65)	0.422** (2.105)	-2.046*** (-10.22)	0.141 (0.70)
2	1.626*** (8.12)	0.938*** (4.68)	0.649*** (3.24)	1.299*** (6.48)
3	1.739*** (8.68)	2.261*** (11.29)	0.913*** (4.56)	0.854*** (4.26)
4	1.231*** (6.15)	0.949*** (4.74)	1.477*** (7.37)	0.941*** (4.69)
5-High	0.212 (1.06)	0.669*** (3.30)	1.810*** (9.04)	1.227*** (6.12)

TABLE 3.7: THE DY AND BID-ASK EFFECT ON THE EX-DIVIDEND DAY ARS AND CARs IN THE UK, GERMANY, FRANCE AND ITALY

Table Reports the DY and Bid Ask Spread (BAS_{ex}) Effect on the Ex-Dividend Day ARs and CARs. The abnormal returns are based on the Market Model with the coefficients calculated by regressing the security returns against the main index of in each country using -290 to -41 trading days relative to the ex-day. The Bid-Ask Spread is calculated as $[(ASK_{ex}-BID_{ex})/((ASK_{ex}+BID_{ex})/2)]$ where ASK_{ex} and BID_{ex} are the ASK and BID Security Prices on the Ex-Day respectively. The firms in the sample are split into equal number of observations to form the quintiles. The number of observation in each quintile is 404 in the UK, 116 in Germany, 141 in France and 49 in Italy. T-statistics reported in the parenthesis; *** Significant at 0.01 level, ** Significant at 0.05 level and * Significant at 0.1 level.

		UNITED KINGDOM					GERMANY					FRANCE					ITALY				
DY	BAS _{EX}	ARS % (T-STAT)	CAR _{-1,+20} (T-STAT)	ARS % (T-STAT)	CAR _{-20,-1} (T-STAT)	ARS % (T-STAT)	CAR _{-1,+20} (T-STAT)	ARS % (T-STAT)	CAR _{-20,-1} (T-STAT)	ARS % (T-STAT)	CAR _{-1,+20} (T-STAT)	ARS % (T-STAT)	CAR _{-20,-1} (T-STAT)	ARS % (T-STAT)	CAR _{-1,+20} (T-STAT)	ARS % (T-STAT)	CAR _{-20,-1} (T-STAT)	ARS % (T-STAT)	CAR _{-1,+20} (T-STAT)		
Low	Q1	0.471** (2.24)	-1.502 (-1.60)	-0.041 (-0.19)	0.663 (0.67)	-2.792*** (-2.84)	0.505 (0.43)	1.997*** (7.69)	0.505 (0.43)	0.455* (1.75)	-0.530 (-0.46)	-0.659*** (-3.29)	-1.503* (-1.69)	-0.659*** (-3.29)	-3.274*** (-2.82)	-1.914** (-2.14)					
	Q2	1.145*** (5.45)	-1.438 (-1.53)	0.870*** (3.96)	1.483 (1.51)	-0.807 (-0.82)	0.424 (0.37)	0.455* (1.75)	0.424 (0.37)	1.461*** (5.62)	-0.931 (-0.80)	0.951*** (4.75)	1.541* (1.72)	0.951*** (4.75)	-0.530 (-0.46)	-0.526 (-0.59)					
Q1	Q3	0.711*** (3.39)	-1.015 (-1.08)	0.30*** (3.73)	1.613* (1.64)	-1.803* (-1.83)	0.184 (0.16)	1.461*** (5.62)	0.184 (0.16)	1.461*** (5.62)	-0.931 (-0.80)	-0.386** (-1.93)	2.267*** (2.53)	-0.386** (-1.93)	-0.717 (-0.80)						
Q1	Q4	1.020*** (4.85)	-1.518 (-1.62)	0.52** (2.36)	2.732*** (2.78)	-1.604 (-1.63)	1.626 (1.40)	1.639*** (6.31)	1.626 (1.40)	1.639*** (6.31)	-2.400** (-2.06)	-0.006 (-0.03)	0.355 (0.40)	-0.006 (-0.03)	0.309 (0.34)						
Q1	Q5	-0.561*** (2.67)	-1.479 (-1.57)	0.691*** (3.14)	1.085 (1.10)	-1.967** (-2.00)	-0.043 (-0.04)	-0.100 (-0.38)	-0.043 (-0.04)	-0.100 (-0.38)	-0.925 (-0.79)	0.068 (0.34)	-0.035 (-0.04)	-0.925 (-0.79)	-0.663 (-0.74)						
Q2	Q1	0.533*** (2.54)	-1.205 (1.28)	0.375* (1.70)	0.389 (0.39)	-1.11 (-1.13)	0.284*** (2.44)	0.976*** (3.76)	0.284*** (2.44)	0.976*** (3.76)	-1.395 (-1.20)	0.388* (1.93)	0.666 (0.74)	-1.395 (-1.20)	0.087 (0.10)						
Q2	Q2	0.395* (1.88)	-1.474 (-1.57)	0.391* (1.78)	0.486 (0.49)	-2.468*** (-2.51)	0.666 (0.57)	-0.414 (-1.59)	0.666 (0.57)	-0.414 (-1.59)	-0.417 (0.36)	1.336*** (6.67)	1.677* (1.87)	-0.417 (0.36)	-2.005** (-2.24)						
Q2	Q3	0.399* (1.89)	-0.924 (-0.98)	0.584*** (2.65)	1.409 (1.43)	-1.219 (-1.24)	-0.992 (-0.85)	1.338*** (5.15)	-0.992 (-0.85)	1.338*** (5.15)	-1.309 (-0.89)	1.196*** (5.97)	1.765** (1.97)	-1.309 (-0.89)	1.710* (1.91)						
Q2	Q4	0.663*** (3.16)	-0.667 (-0.709)	0.374* (1.69)	2.061** (2.10)	-0.972 (-0.99)	1.818 (1.56)	0.368 (1.42)	1.818 (1.56)	0.368 (1.42)	-1.057 (-0.91)	1.453*** (7.26)	1.228 (1.37)	-1.057 (-0.91)	-0.555 (-0.62)						
Q2	Q5	0.383* (1.82)	-0.567 (-0.60)	0.530*** (2.41)	2.164** (2.20)	-2.059** (-2.09)	0.940 (0.81)	2.619*** (10.08)	0.940 (0.81)	2.619*** (10.08)	-0.912 (-0.78)	0.770*** (3.84)	0.563 (0.63)	-0.912 (-0.78)	-1.865** (-2.08)						

		UNITED KINGDOM			GERMANY			FRANCE			ITALY		
DY	BID-ASK	ARS % (T-STAT)	CAR _{20,-1} (T-STAT)	CAR _{1,+20} (T-STAT)	ARS % (T-STAT)	CAR _{20,-1} (T-STAT)	CAR _{1,+20} (T-STAT)	ARS % (T-STAT)	CAR _{20,-1} (T-STAT)	CAR _{1,+20} (T-STAT)	ARS % (T-STAT)	CAR _{20,-1} (T-STAT)	CAR _{1,+20} (T-STAT)
Q3	Q1 Low	0.503*** (2.39)	0.840 (0.89)	-0.224 (-0.24)	0.387* (1.76)	1.636* (1.66)	-1.883* (-1.92)	1.872*** (7.21)	0.324 (0.28)	0.246 (0.21)	0.703*** (3.50)	-2.081** (-2.32)	-2.669*** (-2.98)
Q3	Q2	0.568*** (2.70)	0.803 (0.85)	-0.604 (-0.64)	1.002*** (4.56)	0.643 (0.65)	-2.169** (-2.21)	-0.413 (-1.59)	0.705 (0.61)	-1.286 (-1.11)	1.122*** (5.60)	1.220 (1.36)	-3.183*** (-3.55)
Q3	Q3	0.419** (1.99)	0.365 (0.39)	-0.262 (-0.28)	0.588*** (2.67)	1.727* (1.77)	-0.862 (-0.88)	1.457*** (5.61)	0.799 (0.69)	-0.837 (-0.72)	1.312*** (6.55)	0.848 (0.95)	-1.500* (-1.68)
Q3	Q4	0.391* (1.86)	-0.151 (-0.55)	-0.226 (-0.24)	1.059*** (4.82)	2.023** (2.06)	-3.573*** (-3.63)	1.048*** (4.04)	-0.627 (-0.54)	0.487 (0.42)	1.320*** (6.59)	-0.468 (-0.52)	-0.971 (-1.08)
Q3	Q5 High	0.339 (1.61)	-0.065 (-0.07)	-0.340 (-0.36)	0.456** (2.09)	0.986 (1.00)	-1.150 (-1.17)	1.184*** (4.56)	-1.197 (-1.03)	-0.583 (-0.50)	1.583*** (7.90)	-0.402 (-0.45)	-2.089** (-2.33)
Q4	Q1 Low	0.599*** (2.85)	1.378 (1.47)	-0.078 (-0.08)	0.833*** (3.79)	0.231 (0.24)	-1.895** (-1.93)	0.592** (2.28)	0.365 (0.31)	-1.692 (-1.46)	0.926*** (4.63)	1.107 (1.24)	-2.410*** (-2.69)
Q4	Q2	0.347* (1.65)	0.899 (0.96)	-0.278 (-0.29)	0.692*** (3.15)	2.097** (2.13)	-1.315 (-1.34)	1.466*** (5.64)	0.052 (0.04)	-0.528 (-0.46)	0.861*** (4.30)	0.369 (0.41)	-0.348 (-0.39)
Q4	Q3	0.355* (1.69)	0.850 (0.91)	0.361 (0.38)	0.465** (2.12)	1.461 (1.49)	-1.780* (-1.81)	2.430*** (9.35)	0.624 (0.54)	-0.647 (-0.56)	0.815*** (4.07)	0.413 (0.46)	-1.187 (-1.33)
Q4	Q4	0.387* (1.84)	0.095 (0.10)	0.582 (0.62)	-0.237 (-1.08)	2.052** (2.09)	-1.816* (-1.85)	2.591*** (9.97)	0.385 (0.33)	-1.630 (-1.40)	1.265*** (6.32)	-1.017 (-1.14)	-1.020 (-1.14)
Q4	Q5 High	0.474** (2.26)	-0.924 (-0.98)	0.792 (0.84)	0.721*** (3.12)	1.774* (1.80)	-3.067*** (-3.12)	3.025*** (11.65)	1.296 (1.12)	-1.322 (-1.14)	1.244*** (6.21)	2.045** (2.28)	-2.460*** (-2.75)
Q5	Q1 Low	3.297*** (15.69)	0.541 (0.58)	0.408 (0.44)	1.184*** (5.38)	0.589 (0.60)	-0.625 (-0.64)	0.188 (0.72)	2.748*** (2.37)	-1.084 (-0.93)	0.539*** (2.69)	1.486* (1.66)	0.028 (0.03)
Q5	Q2	3.467*** (16.50)	1.437 (1.53)	0.556 (0.59)	0.746*** (3.39)	0.701 (0.71)	-2.105** (-2.14)	1.085*** (4.18)	-0.405 (-0.35)	-2.247* (-1.93)	1.020*** (5.09)	1.435 (1.60)	-1.990** (-2.22)
Q5	Q3	2.986*** (14.21)	0.637 (0.68)	0.865 (0.92)	0.215 (0.98)	0.799 (0.81)	-1.527 (-1.55)	0.161 (0.82)	0.896 (0.75)	1.105 (0.95)	1.540*** (7.69)	-0.187 (-0.21)	-1.644* (-1.84)
Q5	Q4	2.013*** (9.58)	1.299 (1.38)	0.393 (0.42)	0.585*** (2.66)	0.532 (0.54)	-1.739* (-1.77)	2.103*** (8.09)	0.359 (0.31)	-2.686** (-2.31)	1.574*** (7.86)	-0.658 (-0.74)	-0.052 (-0.06)
Q5 High	Q5 High	2.363*** (11.25)	-0.249 (-0.29)	1.039 (1.11)	0.538*** (2.45)	1.382 (1.41)	-2.679*** (-2.72)	3.112*** (11.98)	1.132 (0.97)	-1.731 (-1.49)	0.959*** (4.79)	1.806** (2.02)	-2.164*** (-2.42)

3.5.5 REGRESSION RESULTS

Table 3.8 Panel A reports the regression results of ex-day abnormal returns against dividend yield (DY), size [$\ln(MV)$] and bid-ask spread (bid-ask). If ex-day prices are affected by taxes, then ex-day returns should be related to dividend yield weighted by the tax differential of dividends to capital gains. If, on the other hand, short-term traders capture dividends, then ex-day returns should reflect the level of transaction costs incurred by these traders. Transaction costs data is not available in machine-readable form. I use two proxy variables for the level of transaction costs. First, Stoll and Whaley (1983) argue that transaction costs are inversely related to firm size as measured by its market value. Following Karpoff and Walking (1988), I use the firm's market value as a proxy for transaction costs. Secondly, I use the bid-ask spread. As argued above, the bid-ask spread is the posted not the actual. Thus, this variable may not be a direct measure of transaction costs.

The strong and positive relationship between ex-day returns and dividend yield observed in Table 3.8 for all countries provides support for the taxation hypothesis. In particular, the significant coefficient of dividend yield variable of 0.96 ($t = 66.57$) for the UK reflects the differential taxation of dividend and capital gains $[(m-z)/(1-z)]$ reported in Table 3.3. Similarly, in the other three countries the dividend yield variable coefficient is positive and significant. In Germany it is equal to 0.06 ($t = 4.56$), in France to 0.35 ($t = 13.85$) and in Italy to 0.22 ($t = 5.76$). Therefore, as predicted by the taxation effect hypothesis, results show a positive relation between dividend yield and ex-day abnormal returns. According to the short-term trading hypothesis, there should be a negative relation between the market value of the firm (proxy for transaction costs) and the ex-dividend day abnormal returns. However, the significantly positive coefficients of the market value variable provide further support for the taxation effect hypothesis in all the countries under consideration. A second measure of transaction costs is the bid-ask spread. The coefficients of this variable do not appear to be statistically significant in the UK, Germany or France, thus evidence in these countries is not consistent with the dividend capturing activity. However, in Italy the bid-ask spread variable coefficient of 0.02 is significant ($t = 5.04$) indicating trends short-term trading activity. I also use the dummy variable technique to test the effect of the taxation regimes on the ex-dividend day share price behaviour. In all the countries but in Italy, the coefficients of the taxation periods appear to be significant providing for the taxation effect hypothesis.

In addition I perform the regressions with market value and bid-ask spread variables removed in order to test whether ex-dividend day abnormal returns can still be explained by the taxation variables. In all the countries the dividend yield coefficients are significantly positive as expected. Also the ex-day taxation effects are further supported by the significance of the taxation periods

(Italy is an exception). Results remain the same upon the removal of the dividend yield and the market value variables. Now, the bid-ask spread coefficients are not statistically different from zero. Finally, I remove the dividend yield and bid-ask variables. The market value coefficient is not significant in the UK, in Germany equals to -0.001 ($t = -1.79$), in France equals to 0.005 ($t = 7.58$) and in Italy equals to 0.001 ($t = 1.83$). These results further reinforce the ex-dividend day taxation effect hypothesis in European countries.

Table 3.8 Panel B reports the results of the drop off ratio regressed against the dividend yield, bid-ask spread and the taxation periods. The dividend yield coefficient in the UK is equal to 0.31 ($t = 27.70$), in Germany is equal to 0.65 ($t = 25.24$), in France is equal to 0.04 ($t = 1.65$) and in Italy is equal to 0.70 ($t = 17.40$). Therefore, results are in line with the taxation effect hypothesis, as there is a positive and significant relationship between the drop-off-ratio and the dividend yield variable.

TABLE 3.8: EX-DIVIDEND DAY ABNORMAL RETURNS REGRESSIONS

The table reports the regression results of the ex-day abnormal returns against dividend yield (DY), size as measured by log of market value of equity at cum-dividend date price (ln(MVE)), bid-ask spread (Bid-Ask) and dummy variables for tax periods. In the UK, Period 1: August 1987 to March 1994 (N= 3540), Period 2: 1 April 1994 to 6 July 1997 (N= 2321), and Period 3: 7 July 1997 to 5 April 1999 (N = 1448); In Germany, Period 1: August 1987 to December 1990 (N = 351), Period 2: January 1991 to December 1993 (N = 592), and Period 3: January 1994 to October 1998 (N = 964); In France, Period 1: August 1987 to December 1992 (N = 469), Period 2: January 1993 to October 1997 (N = 1297), and Period 3: November 1997 to December 1998 (N = 353); In Italy Period 1: August 1987 to March 1991 (N = 211), Period 2: April 1991 to June 1995 (N = 314), and Period 3: July 1995 to January 1999 (N = 270). The t-statistics are in parentheses. *, **, ***, Significant at 0.01, 0.05 and 0.1 levels, respectively.

COUNTRY	INTERCEPT	DY	LN(MV)	BID-ASK	TAX PERIOD 1	TAX PERIOD 2	TAX PERIOD 3	R ²
PANEL A. DEPENDENT VARIABLE IS EX-DAY ABNORMAL RETURNS								
UK	-0.004 ^{***} (-2.57)	0.961 ^{***} (66.57)	0.0004 [*] (1.80)	0.014 (1.34)	-0.0167 ^{***} (-15.395)	-0.00539 ^{***} (-4.491)	-0.0023 [*] (-1.673)	0.3086
GERMANY	0.008 ^{***} (3.75)	0.056 ^{***} (4.56)	0.0004 (1.35)	0.001 (0.91)	-0.0069 ^{***} (-3.317)	-0.0017 (-0.990)	-0.0017 (-1.099)	0.0113
FRANCE	-0.028 ^{***} (-11.40)	0.349 ^{***} (13.85)	0.004 ^{***} (11.14)	0.002 (1.24)	-0.0142 ^{***} (-4.629)	-0.0087 ^{***} (-3.931)	-0.0059 [*] (-1.740)	0.7609
ITALY	0.007 [*] (-1.87)	0.220 ^{***} (5.76)	0.001 ^{***} (3.14)	0.022 ^{***} (5.04)	-0.0004 (-0.188)	-0.0014 (-0.652)	-0.0025 (-0.503)	0.0476
UK	-0.003 ^{***} (-3.120)	8.99 ^{***} (66.539)			-0.0169 ^{***} (-15.694)	-0.0054 ^{***} (-4.524)	-0.0023 [*] (-1.709)	0.3080
GERMANY	0.006 ^{***} (4.96)	0.058 ^{***} (4.734)			-0.0069 ^{***} (-3.270)	-0.0016 (-0.894)	-0.0016 (-1.056)	0.1037
FRANCE	-0.006 ^{***} (-4.126 ^{***})	0.350 ^{***} (87.613)			0.0138 ^{***} (4.4280)	0.0085 ^{***} (3.753)	0.0061 [*] (1.757)	0.7523
ITALY	0.004 ^{***} (2.122)	0.181 ^{***} (4.807)			-0.0015 (-0.664)	-0.0027 (-1.273)	-0.0033 (-0.659)	0.0203
UK	0.012 ^{***} (11.739)			-0.0160 (-1.507)	-0.0079 ^{***} (-6.205)	-0.0047 ^{***} (-3.305)	-0.0022 (-1.353)	0.0443
GERMANY	0.007 ^{***} (6.87)			0.0013 (0.977)	-0.0059 ^{***} (-2.805)	-0.0019 (-1.133)	-0.0019 (-1.246)	0.0306
FRANCE	-0.001 (-0.399)			0.0045 (1.178)	0.0274 ^{***} (4.392)	0.0228 ^{***} (5.080)	0.0197 ^{***} (2.835)	0.0100
ITALY	0.008 ^{***} (5.600)			0.021 ^{***} (4.679)	0.0005 (0.204)	-0.0017 (-0.804)	-0.0050 (-0.978)	0.0194

COUNTRY	INTERCEPT	DY	LN(MV)	BID-ASK	TAX PERIOD 1	TAX PERIOD 2	TAX PERIOD 3	R ²
UK	0.0128*** (8.493)		-0.0002 (-0.949)		-0.0081*** (-6.299)	-0.0047*** (-3.299)	-0.0022 (-1.363)	0.042
GERMANY	0.010*** (5.129)		-0.0006* (-1.787)		-0.0060*** (-2.880)	-0.0023 (-1.293)	-0.0020 (-1.291)	0.038
FRANCE	-0.031*** (-6.204)		0.005*** (7.581)		0.0275*** (4.451)	0.2288*** (5.122)	0.0194*** (2.812)	0.026
ITALY	0.003 (1.082)		0.0009* (1.832)		0.0011 (0.497)	-0.0017 (-0.789)	-0.0050 (-0.985)	0.047

PANEL B. DEPENDENT VARIABLE DROP-OFF RATIO

COUNTRY	INTERCEPT (T-STAT)	DY (T-STAT)	BID-ASK (T-STAT)	TAX PERIOD 1 (T-STAT)	TAX PERIOD 2 (T-STAT)	TAX PERIOD 3 (T-STAT)	R ²
UK	0.002*** (3.129)	0.3121*** (27.695)	0.0258*** (4.899)	0.00083 (1.305)	0.00182*** (2.573)	0.0004 (0.502)	0.071
GERMANY	0.002* (1.784)	0.6508*** (25.243)	0.0019 (1.443)	0.0040** (1.903)	0.0004 (0.216)	-0.0009 (-0.598)	0.185
FRANCE	0.013*** (3.9169)	0.0035* (1.649)	0.1725 (1.480)	0.0015 (1.480)	0.0108 (0.789)	0.0003 (0.132)	0.017
ITALY	0.004*** (2.181)	0.696*** (17.399)	0.0239*** (5.114)	-0.0054*** (-2.275)	-0.0037 (-1.599)	-0.0012 (-0.226)	0.219
UK	0.001*** (1.966)	0.3065*** (27.308)		0.0007 (1.183)	0.0018*** (2.613)	0.0004 (0.538)	0.070
GERMANY	0.002 (1.829)	0.6519*** (25.293)		0.0039 (0.056)	0.0034 (0.193)	-0.0090 (-0.555)	0.185
FRANCE	0.0129*** (3.893)	0.0034* (1.613)		0.0015 (0.809)	0.0011 (0.833)	-0.0003 (-0.129)	0.011
ITALY	0.003 (1.753)	0.708*** (17.549)		0.0054*** (2.249)	-0.0031 (-1.340)	-0.0087 (-0.159)	0.202

3.6 CONCLUSION AND FUTURE DEVELOPMENTS OF THE STUDY

In this Chapter of my thesis, I analyse the behaviour of ex-day returns in four major European countries: the UK, Germany, France and Italy. The study was motivated by the long existing controversy in the literature as to what drives the ex-dividend share prices as well as by the differences in the European taxation systems (as analysed in Chapter 2). I provide a literature review on the theories provided. The taxation effect hypothesis (Elton and Gruber, 1970, Kaplanis, 1986, Lasfer, 1996, Elton, Gruber and Blake, 2002); the short-term hypothesis (Kalay, 1982, Eades, Hess and Kim, 1984, Koski, 1996, Boyd and Jagannathan, 1994); and the microstructure effect hypothesis (Bali and Hite, 1998, Frank and Jagannathan, 1998). Also another part of the literature (Poterba and Summer, 1984, Menyah, 1993, Lasfer, 1995, Bell and Jenkinson, 2002) considers the taxation regime change effect on the ex-dividend day behaviour.

In order to test whether marginal investors in Europe face higher taxes on dividends than on capital gains, I use event study methodologies (Brown and Warner, 1985) in order to observe the ex-dividend day behaviour of stock returns and relate each country's tax discrimination variable to the ex-dividend day returns. If taxation effects drive the ex-dividend share price behaviour then in countries where dividends are taxed at a higher rate than capital gains, ex-dividend day returns are expected to be higher.

Data was obtained from DataStream to cover the period 1987 to 2002. My final sample includes a total of 10,085 ex-dividend day events for the UK, 2,910 for Germany, 3,516 for France and 1,237 for Italy. Results reported are based on the market model, over the event window [-40, +40] trading days relative to the ex-dividend date. The robustness of my results has been checked using alternative models for example the market adjusted model and the Dimson (1979) model. To test for potential effects of short-term trading, I analyse the ex-dividend day returns by bid-ask spreads (Karpoff and Walking, 1990).

I find that, on average, ex-day returns are positive in all the countries in my sample, suggesting that ex-day prices decrease by less than the amount of the dividend. Results confirm that in countries where the differential between dividends and capital gains is high, ex-day returns are also high. Moreover, I show that ex-day returns are not homogeneous across my sample periods. I find that in each of the four countries under consideration, changes in the tax systems that affect taxes on dividend and/or capital gains alter significantly ex-day returns. The study adds to the literature by providing further evidence on the taxation effects on ex-dividend day returns in European countries. However, I show that some countries are subject to heavy short-term trading and their ex-day returns are lower to reflect the tax differential between dividends and capital gains. Further tests of the ex-dividend day abnormal returns provide further evidence to support

the taxation effect hypothesis in the UK. In Germany, results are consistent with McDonald (2001) who finds evidence of tax motivated trading around the ex-dividend day. In France and Italy results support the taxation effect hypothesis but evidence is not strong enough to completely rule out the short-term trading hypothesis.

A major limitation of the study is the fact that data on the share ownership structure is not available. After considerable research, I was able to obtain an indication of the ownership structures in the four countries under consideration, but unfortunately data is not disaggregated enough to show what percentage of the equity capital each class of taxpayer owns, in order to draw clear conclusions on the marginal investor driving the market on the ex-dividend day.

**CHAPTER 4: THE INFORMATION CONTENT OF DIVIDEND ANNOUNCEMENTS IN THE UK,
GERMANY, FRANCE AND ITALY: A COMPARATIVE STUDY**

4.1 INTRODUCTION

Miller and Modigliani (1961), propose that in capital markets where there are no imperfections such as taxes, transaction costs, agency conflicts or asymmetric information, the dividend policy of the company is irrelevant to the market value of its shares. However, they hint that the information content of dividends can explain the observed share price reaction to changes in dividends. They argue that when a firm follows a stable dividend policy, investors interpret a change in the dividend payout rate as a change in the management's view of the firm's future profitability (page 430). This view partly reconciles the traditional posture regarding company dividend policy, which considers that the market value of shares increases when managers opt for a high target payout ratio (for example, Gordon, 1956).

The theory of dividend signaling argues that there exists an informational asymmetry about the firm's future prospects. A common theme of the signaling models is that in the presence of asymmetric information between managers (insiders) and shareholders (outsiders), dividends may be used as a signaling mechanism by managers to communicate to the market their assessment of the firm's current performance and future prospects. Bhattacharya (1979), Miller and Rock (1985), John and Williams (1985) attempt to explain how and why dividend changes signal information to the market. In general, dividend models posit that dividend announcements transmit information about the firm's future and/or current earnings (prospects of the company) and consequently the changes in the value of the firm around dividend announcements should be proportionate to the changes in dividend policy. Therefore, when a firm unexpectedly increases (decreases) dividends, it signals managements' future optimistic (pessimistic) outlook. Outside investors are expected to revise their expectations about the firm's future value on the basis of this information.

There are essentially three implications of the information-signaling hypothesis, which have been empirically tested. The first implication is that dividend changes should be positively associated with subsequent earnings changes. If this condition is not met, then it may be concluded that dividends do not even have the potential to transmit information, let alone the signal. Unfortunately, the overall accumulated evidence (Watts, 1973, Gonedes, 1978, Benartzi, Michaely and Thaler, 1997) grants only weak support to the assertion that dividend changes convey information about future changes in earnings, unless extreme dividend changes are considered (Healy and Palepu, 1988). The second

implication is that unexpected dividend changes should be positively associated to stock price changes.¹ There is a substantial amount of empirical evidence that documents a positive association between dividend changes and excess returns on the announcement day (Pettit, 1972, Asquith and Mullins, 1983, Aharony and Swary, 1980, Brickley, 1983, Kalay and Lowenstein, 1985, Michaely, Thaler and Womack, 1995). However, the available empirical evidence also indicates that unfavourable dividend changes elicit market reactions that are much greater in magnitude than favourable dividend changes (De Angelo, De Angelo and Skinner, 1990, 1992, 1996, Healy and Palepu, 1988). In a more recent study, Grullon, Michaely and Swaminathan (2002) show that dividend increases are followed by price increases, because they signal that firms enter the maturity stage of the business cycle, and therefore their risk is decreasing. Thirdly studies empirically test the implications of the information-signaling hypothesis and assert that unexpected changes in dividends should be followed by revisions in the market's expectations of future earnings changes in the same direction as the dividend (Ofer and Siegel, 1987).

The purpose of this part of my thesis is twofold.² Firstly, I test the share price reaction on the dividend announcement day and; secondly, I consider the predictions of the dividend signaling hypothesis in the UK, Germany, France and Italy by examining the share price reaction on the announcement day according to the direction of the dividend and earnings changes announced. This is to observe whether evidence obtained in the US also applies in European Countries.³ Beer (1993) and Sheifert (1997) make the point that there has been relatively little empirical research on signaling using data from the European markets to analyse the dividend changes and test the signaling hypothesis. The recent development of European data now enables the testing of dividend theory predictions in countries outside the US. Additionally, an imperative motivation for the study of share price reaction around the dividend announcement day in Europe is the existence of institutional, financial and corporate governance differences between countries. These differences result in different country-level information asymmetries between insiders (managers) and outsiders (shareholders) of the companies. The main argument of this part of my thesis, is that if dividends are used as a signaling

¹ Note that a positive association between announcement of dividend changes and stock price movements is also consistent with the free cash flow/overinvestment explanation of why firms pay dividends (Jensen, 1986). A firm with substantial free cash flow will have a tendency to overinvest by accepting investment projects with negative NPV. If managers are overinvesting an increase in dividends will, other things equal, reduce the extent of overinvestment and increase the market value of the firm; a decrease in dividends will have the opposite results. This hypothesis was empirically tested by Lang and Litzenberger, 1989. I test the hypothesis in the next chapter of my thesis.

² An analysis of the share price reaction to dividend announcements would also set the grounds for testing the predictions of the agency conflict hypothesis in the next chapter.

³ My analysis is in line with Rajan and Zingales (1995) who investigate the capital structure theories using international data and note that to the extent which other countries are similar to the US, they provide an independent sample to test the theory and evidence developed, whereas differences would increase the ability to discriminate among alternative theories.

mechanism to mitigate information asymmetries, then in countries where there is a higher level of information asymmetry between shareholders and managers, abnormal returns on the dividend announcement days are expected to be higher than in countries where investors are better informed about the future (and current) prospects of the company. Assuming that the corporate governance system and the institutional characteristics of the firm affect the level of information asymmetry, I would expect the abnormal returns on the dividend announcement day in bank-based countries such as Germany, France and Italy where companies are generally more closely held,⁴ to be lower than in market-based countries, i.e. UK.

Data for the purpose of testing my hypothesis is collected from DataStream and Hydra, online databases, to cover all listed companies on the London, German, French and Italian Stock Exchanges for the period 1987 to 2002. The final sample consists of 10,717 dividend announcements in the UK, 1,019 in Germany, 982 in France and 633 in Italy. I employ event study methodologies (Brown and Warner, 1985) to calculate the abnormal returns around the dividend announcement dates. I analyse the share price reaction around the event according to the dividend change announcements (i.e. dividend increases, decreases, no changes, initiations and omissions) as well as according to the earnings announcements.

Results show that in the UK investors perceive dividend increases (decreases) as good (bad) news for the future of the company. However, in all three bank-based countries studied, where information asymmetry is lower than in market-based countries, investors perceive dividend increases/initiations negatively, while dividend decreases result in positive abnormal returns. The positive abnormal returns obtained as a result of dividend decrease/omission announcements might lead to the conclusion that companies in bank-based countries decrease dividends in order to use the less costly internal funds to take positive net present value opportunities. Investors in these countries are informed about the prospects of the companies, therefore they would not penalise dividend-decreasing firms and consequently managers do not fear a negative market reaction following such announcements. At the same time, the negative market reaction to dividend increases/initiations could indicate that companies are running out of good investment opportunities. Results of examining both the earnings and dividend signals, show that when both signals are in accord and the dividend evidence is corroborated by earnings news, the stock market reacts more positively than when the dividend-change groups are tested as a whole.

⁴ See Franks and Mayer (1994), La Porta, Silanes and Shleifer (1999)

The rest of the chapter is organised as follows. In Section 4.2, I provide a literature review of the studies that analyse the share price reaction around dividend announcement day, the studies that provide evidence to support/reject the information content of dividend hypothesis, and studies that consider the effect of firm specific characteristics on the signalling power of dividends as well as international studies. In Section 4.3, I identify the institutional, financial and corporate governance differences between the countries under consideration that are expected to result in different levels of information asymmetry, I put forward the motivation of this part of my thesis and I set the hypotheses to be tested. In Section 4.4, I describe the data and methodology used to test my hypotheses. Finally, in Section 4.5, I analyse the results, providing inter- and intra- country comparisons. The conclusions are discussed in Section 4.6.

4.2 LITERATURE REVIEW: THE SIGNALLING EFFECT HYPOTHESIS AND THE SHARE PRICE BEHAVIOUR AROUND THE DIVIDEND ANNOUNCEMENT DAY

Various studies have set forth to explain the relationship between dividends and firm value. The information content of dividend hypothesis is based on the assumption that managers possess more information about the prospects of the firm than individuals outside the firms. The hypothesis asserts that dividend changes convey managers' inside information to outsiders and has its roots in Lintner's (1956) classic study on dividend policy. One of Lintner's primary findings in the interviews of a sample of corporate managers is that a high proportion of managers attempt to maintain a stable regular dividend and that firms increase their dividends only when management is relatively confident that higher payments can be maintained.⁵ Additional support to Lintner's argument is provided by Darling (1957), Fama and Babiak (1968), De Angelo and De Angelo (1989), Pogue (1970), Higgins (1972), MacCabe (1979), Peterson and Benesh (1983), Fama (1974). Lintner's model however, cannot explain a firm's increase (decrease) of dividend payments when its current earnings decrease (increase), because in his model decreases (increases) in current earnings are gradually translated into decreases (increases) in current dividends in order to maintain stable dividend payments.

4.2.1 THEORETICAL MODELS

If managers change regular dividends only when the earnings potentials of the firm have changed, changes in regular dividends are likely to provide some information to the market about the firm's prospects. The first to formally model the notion of the information content of dividends are Bhattacharya (1979), Miller and Rock (1985) and John and Williams (1985). Firstly, Bhattacharya

⁵ In Lintner's words, managers demonstrate a "reluctance" (common to all companies) to reduce regular rates once established and a consequent conservatism in raising regular payouts (Lintner, 1956).

(1979) develops a theoretical model to explain that dividends are used as a costly means of removing information asymmetries in the market concerning the firm's value. In his model, signaling costs are a function of the differential tax treatment of dividends versus capital gains income of investors and of the financing costs of raising unanticipated funds to fulfil dividend obligations. He argues that if the market has imperfect information then equilibrium can emerge in which dividends are a signal of expected cash flows. The equilibrium firm value is a positive function of expected cash flows and the equilibrium dividend level, and a negative function of signaling costs and the rate of interest.

John and Williams (1985) identify a dividend-signaling model motivated by the effect of dividends on shareholders' wealth, as a signal of firm profitability. An assumption of the model is that firms have more information about their expected future earnings than outsiders, and this assumption leads firms with insufficient internal funds to differentiate themselves from lower quality firms. By design the model provides an extremely adverse environment for signalling with dividends; taxes are paid only on dividends; no transaction costs are incurred when issuing, retiring or trading shares, and; all sources and uses of firms' funds are fully observed by outsiders through costless public audits. Nevertheless, there exists a signalling equilibrium with dissipative dividends where corporate insiders distribute taxable dividends if and only if the demand for cash by both their firm and its current shareholders exceeds the supply of internal funds. Thus, some firms pay dividends, while others do not. Of those firms that pay dividends, many simultaneously sell new shares to outside investors. Still, other firms pay dividends, sell no new shares, and, instead support their share prices and thereby benefit current claimants who sell outstanding shares to new investors. John and Williams argue that their signalling equilibrium exists because the marginal benefit to insiders of distributing dividends differs across firms. For firms with more valuable inside information, the premium paid in the market for stocks with marginally larger dividends, and thereby the reduction in dilution for current shareholders, just compensates stockholders for the incremental personal taxes on dividends. By contrast, for firms with less favourable inside information, the dissipative costs of the same dividend exceed at the margin the gains from reducing dilution. Consequently, there exists in the market a pricing function for stock, which separates firms with more favourable inside information from those with less. In the resulting signalling equilibrium, firms with more favourable inside information optimally pay higher dividends; other things equal, and receive appropriately higher prices for their stock.

Miller and Rock (1985) develop a financial signaling model founded on the concept of "net dividends". This is the first theory that explicitly combines dividends and external financing to show

that they are merely two sides of the same coin. They show that the earnings, dividend and financing announcements are closely related. The earnings surprise and the net dividend surprise can convey the same information. The financing announcement effect is merely the dividend announcement effect, but with the sign reversed. Therefore, an unexpected increase in dividends indicates a better prospect for the firm's future cash flows and will increase shareholder's wealth. In addition, an unexpected issue of new equity or debt will be interpreted as bad news about the future prospects of the firm and will decrease the firm's value.

Ambarish, John and Williams (1987) construct an efficient signaling equilibrium with dividends and investments or, equivalently, dividends and net new issues of stock. The equilibrium's properties are also identified. Because corporate insiders can exploit multiple signals, the efficient mix must minimise dissipative costs. In equilibrium, many firms both distribute dividends and deviate from the optimal investment. Also, the impact of dividends on share prices is positive. By contrast, the announcement effect of new share issuance is negative for firms with private information primarily about assets in place and positive for firms with inside information mainly about opportunities to invest. Kumar (1988) develops a model of the firm in which insiders possess private information about the firm's prospects, and investment is endogenous. He shows that there exists a coarse dividend signaling equilibria: dividends partition the space of possible prospects of the firm, and changes in dividends reflect "broad", or nonincremental, changes in these prospects. Dividend changes have nontrivial information effects; however dividends are smoothed and therefore are poor predictors of future earnings.

4.2.2 EMPIRICAL EVIDENCE

The above theoretical predictions are tested from different perspectives. In this section, I summarise the main results based on different methodologies.

MARKET REACTION TO DIVIDEND CHANGES

A number of studies test the signalling hypotheses by investigating the share price reaction to dividend announcements. Pettit (1972) finds that significant share price increases (decreases) follow announcements of dividend increases (decreases). In his study, firms are cross-classified according to the estimated dividend and earnings information conveyed to the market. Earnings information is classified into two groups (positive or negative) according to whether actual reported quarterly earnings exceeded or fell short of expected earnings. Expected earnings are formed from estimates of the relationship that exists between the firms' (growth adjusted) earnings and market earnings.

Dividend classes are made up of: omissions, reductions, no-changes, less than 10 percent increases, 10 to less than 25 percent increases, 25 percent increases and greater, and initial payments. The objective is to provide reasonably homogeneous dividend information groups as a basis for testing the hypothesis that dividends convey information. For each of these earnings-dividend classes the abnormal performance index is calculated. The conclusion that a significant level of new information is conveyed to the market by dividend announcements is based on two findings. First, the performance indices are highest for the initial dividend payment group and decline as dividend performance becomes worse within the earnings classes. Second, for all but the "no-change" group the dividend announcement seems to dominate earnings announcement. That is when dividends are changed; the impact of earnings announcements seems negligible.

Aharony and Swary (1980) attempt to observe whether quarterly dividend announcements convey useful information beyond that provided by quarterly earnings. They only examine quarterly dividend and earnings announcements made public on different dates within a given quarter, therefore, they are able to distinguish earnings announcements that proceed or follow from those that accompany dividend announcements. They demonstrate that a simple dividend forecasting model can successfully predict abnormal stock performance. The model forecasts no-change in dividends from one quarter to the next: $D^*_q = D_{q-1}$, where D^*_q equals the ordinary dividend per share in the q^{th} quarter and the asterisk denotes an expectation operator. The model is consistent with the hypothesis that managers are reluctant to change dividends in either direction unless they believe that the prospects of the firm have significantly improved or deteriorated. The model is ultimately validated by evidence that stock performance was above normal following positive dividend announcements and below normal for negative announcements. Moreover, they find that changes in quarterly cash dividends provide useful information beyond that provided by corresponding quarterly earnings. In addition, their results support the semi-strong form of the efficient capital market hypothesis, that is, on average the stock market adjusts in an efficient manner to new quarterly dividend information.

Theobald, Balachandran and Cadle (1996) analyse the price reactions to dividend cuts and omissions in the UK (where dividends and earnings are announced simultaneously) and also investigate the signalling power of interim dividend cuts/omissions within a dividends-earnings framework following Watts (1973) and DeAngelo et al (1992). They use a logit analysis to investigate the variables that determine whether a firm will cut or omit its interim dividend. Their sample consists of 243 interim cuts or omissions. Consistent with signalling theories/ information content of dividends, they find a negative price reaction to interim dividend cuts and omissions. The price reaction is found

to be generally stronger (i.e. more negative) where the interim cut or omission occurs for firms that have not reduced their dividends in the previous three-year period. They also find evidence consistent with Christie (1994) that the magnitude of the price reaction is a U-Shaped function of the size of the dividend reduction. The predictive power of interim dividend cuts and omissions for future earnings variables is established in cross-section. Interim dividends are found to have incremental predictive ability over and above earnings variables for both the year in which the cut/omission was made and for the subsequent year's change in earnings. Moreover, they find that gearing, company size (market value) and interim earnings change variables have explanatory power in distinguishing between whether a firm cuts or omits its interim dividend level. Overall, in all three approaches adopted (return generating process, price reaction investigation and earnings/dividends relationship) results show that interim dividend cuts and omissions have the power to communicate information to the market about future earnings.

Lonie, Abeyratna, Power and Sinclair (1996) investigate the stock market response to interactive dividend and earnings announcements by a sample of 620 UK companies over the period January to June 1991. They firstly, examine the possibility that the response to a dividend announcement may be influenced by whether the dividend is being increased, decreased or left unchanged. US studies suggest that this may indeed be the case and acknowledge the role of the dividend as a signal to investors; dividend increases tend to be associated with positive abnormal returns, and dividend decreases tend to be associated with negative abnormal returns around the time of the dividend announcement. Secondly, they recognize that identifying a unique dividend information announcement effect is particularly difficult in the UK because UK dividends are almost invariably announced simultaneously with information about corporate earnings. They address this problem by focusing on those occasions when the signals associated with these announcements conflict with one another - where dividends are increased and earnings decrease or vice versa. The influence of combinations of dividend and earnings news is found to be important in explaining the share price reaction on the announcement day.

Healy and Palepu (1988) examine dividend initiations and dividend omissions over an eleven-year period and find that share price increases (decreases) upon the initiation (omission) of dividend announcements. They show that the information conveyed by extreme dividend changes (including initiations and omissions), is related to earnings changes following the announcement of these dividend policy changes. They state that firms have earnings increases on the year of, and two years following the dividend initiation (i.e. the increases appear to be permanent). However, in contrast, to

the dividend signaling theory, for the sample of dividend omissions, they conclude that the earnings decline experienced by these firms before and after the omission announcement appeared to be temporary. That is, the decline in earnings before dividend omissions is reversed in subsequent years.

Christie (1994) examines dividend omissions, and shows that despite the fact dividend omissions trigger a substantial decline in share value, those losses are much smaller in magnitude than cases where reduction of dividends was less than 100 percent. Results show that for less than 20 percent reductions in dividends, prices fall around 5 percent; while for those exceeding 60 percent the fall is around 8.8 percent. However, if dividends are omitted entirely, the average two-day risk adjusted return is just -6.9 percent (the differences between these groups are statistically significant). Christie derives a U-Shaped empirical relation between risk-adjusted excess returns and the magnitude of dividend reductions. He determines that "omitting" firms distribute subsequent dividends at values, which approach their pre-announcement value faster than firms that had reduced dividends. The U-Shape may arise from the market anticipating higher future growth rates in dividends from omitting firms. However, Christie notes that a conclusive economic explanation is not apparent.

Garrett and Priestley (2000) analyse the dividend behaviour of the aggregate stock market and propose a model, which assumes that managers minimise the costs of adjustment associated with being away from their target dividend payout. They exhibit significant evidence of dividend smoothing and dividends conveying information regarding unexpected positive changes in current permanent earnings. They note that dividends may respond to both past prices which following Marsh and Merton (1987), act as forecasts of current and future permanent earnings, and to unexpected current permanent earnings; and find that, at least at the aggregate level, information about expected future permanent earnings is captured by lagged stock prices. Therefore, dividends do not signal the future level of earnings of the firm. However, they prove that dividends convey information about current unexpected permanent earnings. One of the three contributions of the paper is to deal with signaling and find very strong evidence that dividends convey information about positive shocks to current permanent earnings; additionally the authors support the hypothesis that information about expected changes in permanent earnings is already captured in lagged stock price changes and therefore, no support was found that dividends signal future permanent earnings.

Bajaj and Vijh (1990) test for firm-size effect and find that price reactions to dividend changes are greater for small firms than for large firms, which indicates that dividend announcements for smaller firms are more informative. They note that some of the information provided by the dividend

announcement to investors in small firms is available to investors in large firms from other sources. Generally, they support the hypothesis that dividends provide information about future cash flows of the firm. On the other hand, Jalilvand and Harris (1984) and Rao and White (1994) find no evidence to support that a firm size affects dividend payouts. Mozes and Rapaccioli (1995) investigate the role dividend announcements play in explaining the inverse relation between the magnitude of the market reaction to earnings announcements and firm size. They find that size-effects do not exist in the case where dividends are announced before the earnings announcements, while such an effect exists for a sample of firms that either do not pay dividends or announce dividends after announcing earnings.

DIVIDENDS AND FUTURE EARNINGS

Watts (1973) was among the first to examine the relation between dividends and future earnings. He uses a sample of 310 firms during the period 1946 to 1967 and he regresses future earnings changes on current unexpected dividend changes. While the average regression coefficients of dividend changes across firms are positive, the average t-statistics are very low. He attempts to measure the importance of dividends in two separate ways. Firstly, he estimates the relation between annual earnings in the future (in period $t+1$) and annual dividends in $t-1$ and t . Secondly, he measures the relation between unexpected changes in share price and unexpected changes in annual dividends, which are meant to serve as the conveyer of the information. The second method is interesting since unexpected changes in share price incorporate all unexpected changes in future anticipated earnings and not just earnings one period into the future. Watts classifies fiscal firm years into positive and negative dividend categories according to the sign of the difference between actual dividend changes and expected dividend changes.⁶ Abnormal returns for the two groups were calculated and results show no significant difference in abnormal performance between the two groups. Based on these findings, Watts concludes that dividends do not convey information.

Gonedes (1978) investigates the extend to which income, dividend and extraordinary income items reflect information relevant to assessing firm's equilibrium values. He finds that income can be used in making inferences about predictive distributions of attributes of firm's decisions and supports that dividend reflect information relevant to those inferences because of a connection with income. This argument is based on the idea that dividend-change announcements (which include announcements of no-change) reflect information available to managers (and perhaps other insiders), but not to investors in general.

⁶ Expected dividend changes for each firm are formed from coefficients estimated from the time series expression: $\Delta D_t = D_t - D_{t-1} = \beta_1 D_{t-1} + \beta_2 E_t + \beta_3 E_{t-1} + \epsilon_t$, where D is dividends per share and E is earnings per share.

Penman (1983) compares the properties of dividend announcements and management earnings forecasts as predictors of earnings and the firm value. He provides evidence that both dividend announcements and management's earnings forecasts possess information about managements' expectations. However, he argues that not all information in earnings forecasts is available in dividend announcements. For firms whose dividend announcement implied a relatively high earnings prediction, the information conveyed by their dividend is similar to that conveyed by their earnings forecasts. He also shows that many firms did not adjust their dividends to the level of earnings implied by the earnings forecasts and so, for these firms with a relatively low adjustment of dividends the dividend announcement did not predict firms' values as well as the earnings forecasts. Therefore, Penman supports that there is not much information conveyed by dividend changes themselves, after adjusting for management's future earnings forecasts.

As with any other explanation of dividend policy empirical evidence is mixed and inconclusive; so is the case with the dividend signaling. Benartzi, Michaely and Thaler (1997) are motivated by Miller (1987) who notes that dividends are better described as lagging earnings than as leading earnings. They criticise Watts (1973) and Healy and Palepu (1988) results that they both rely on a small number of data, and that the latter only considers the extreme cases of initiations and omissions, which could be special. Benartzi et al (1997) utilise a large number of firms and events and control for other factors that could create spurious relationship between dividends and subsequent earnings changes, such as the timing of the dividend change. Results are consistent with Watts (1973) since no evidence to support the view that changes in dividends have information content about future earnings changes is found; that is the predictive value of changes in dividends is found to be minimal.

The only strong predictive power found is that dividend cuts reliably signal an *increase* in future earnings and that dividend-increasing firms are less likely to have subsequent earnings decreases than firms that do not change their dividend policy despite similar earnings growth. In this sense, changes in dividends are considered to signal something about the present, that is, the current increase in earnings is permanent. Instead, a strong past and concurrent link between earnings and dividend changes is obtained which implied that if there is any information content in dividend announcements, it is that the concurrent change in earnings is permanent rather than transitory. Overall, results indicate that dividend changes provide information about current and past levels of earnings rather than future earnings.

A different explanation to the dividend-signaling hypothesis is approached in a series of papers by DeAngelo, DeAngelo and Skinner (1990, 1992⁷) who are based on Lintner's observation that net income is the key characteristic in determining dividend changes. They use a sample of "unhealthy" firms and they observe that an annual loss is a necessary, but not sufficient condition for a firm's dividend reduction. In their sample of 167 firms (DeAngelo et al, 1990), 50.9 percent reduced dividends whereas for those firms without losses, only 1 percent reduced dividends. They conclude that firms reduce dividends less often when their loss includes unusual income items, which would indicate transitory earnings problems.

DeAngelo, DeAngelo and Skinner (1996) employ a variety of model specifications and definitions of favourable dividend actions to assess the empirical importance of dividend signaling in order to examine the signaling content of managers' dividend decisions for firms whose annual earnings declined after nine or more consecutive years of growth. Evidence to reject the dividend-signaling hypothesis is obtained, as results provide no indication that managers' dividend decisions in the year of the earnings decrease (Year 0) are useful signals of future earnings prospects. They also investigate and reject the separating equilibrium hypothesis, where dividend decisions conform to a separating equilibrium. That is managers of firms with relatively good prospects use dividend increases to differentiate their companies from other firms in seemingly similar situations that have comparatively poor prospects. DeAngelo et al provide evidence to suggest that three factors namely managerial over-optimism, modest resource commitments and to a lesser extent managerial mistakes help to explain why favourable dividend actions of the firms in their sample, failed to provide any informative signals about the future prospects of the firms.

Jensen and Johnson (1995) attempt to provide evidence regarding the motivation for decreasing dividends, the information conveyed by a drop and managerial actions taken both before and after a drop. Results show a drop in earnings before the dividend is reduced and increase in earnings thereafter. Stock prices are observed to follow a similar pattern, however the rebound in stock prices following the dividend decrease is not found to be significant. They note that the stock market reaction suggests that investors in spite of the ensuing earnings rebound view dividend drops negatively. They also examine 19 variables in addition to earnings and share prices, to provide a more complete picture of the firm behaviour before and after a dividend reduction and find that dividend reductions are the consequence of reduced earnings and deteriorating liquidity positions as well as

⁷ In this paper DeAngelo et al extend their sample size of NYSE firms to 167 firms with losses between 1980 and 1985, included 440 firms without losses and extend their analysis to transitory losses.

debt levels. They conclude that a dividend drop generally occurs at the low point of a firm's financial decline and marks the beginning of firm restructuring activities.

Elfakhani (1995) presents a signaling system that accounts for the interaction between financial statements and dividend announcement in order to test whether changes in financial statements and dividends can together provide a better information transmittal system to deliver missing private information of the firm. The testing methodology considers balance sheet information followed by dividend change signal as to resolve most of the uncertainty about the firm's future. The dividend signal is considered as having three components. Firstly the content of favourableness, good or bad; secondly the sign of dividend change, positive or negative; and, thirdly, the role of dividend signal, confirmatory, clarificatory or unclear. Results reveal that the classification of dividend signal by the three components improves the understanding of the firm's value. In particular, the more the market understands (with certainty) about the firm's sources and uses of funds before the dividend announcement, the clarifying role of dividend becomes minimal. Under these conditions, dividends are less efficient and have little value to the market. On the other hand, the less the market knows, the more eager it is to receive dividend signal and to assess its contents (as carrying good or bad news). Thus, confirmatory signal induces less market reaction in returns than those of the clarificatory or unclear signals. Results also suggest that dividend signal sending good news to cause larger price movements than those involving bad news. This suggests that bad news may be discounted long before the dividend announcement; so the dividend may carry little information. Furthermore, Elfakhani suggests that market reaction is more dependent on the expected content of favourableness, than in the sign of dividend change; therefore, he concludes that neither all dividend decreases carry bad news nor all dividend increases carry good news.

In a recent study, Nissim and Ziv (2001) were motivated by the contradiction between the signaling theories (for example, Aharony and Swary (1980), Asquith and Mullins (1983), Petit (1972)) on the one hand and the predictions of DeAngelo et al (1996), Benarzi et al (1997) on the other. In order to investigate whether dividend changes convey information about the future profitability they follow previous studies and estimate expected profitability. They modify the regression model to address two issues related to the estimation of unexpected earnings namely measurement error and omitted correlated variables. They extend the analysis and examine the relation between dividend changes and the level of future profitability, controlling for profits in the dividend change year and for the expected profits based on information available before the dividend change. For this purpose they use both earnings and abnormal earnings as two alternative measures of profits. With both measures of

profitability, they find that dividend increases are positively related to profits in each of the four subsequent years, but dividend decreases are not found to be related to future profits. The lack of association between dividend decreases and future profitability is allocated to accounting conservatism. Results for abnormal earnings are found to be stronger, suggesting that accounting for the required return more than offsets the error in measuring abnormal returns. Moreover dividend changes are found to be positively related to the level of future profitability, after controlling for book value, past and current profitability, market expectations of future profitability as reflected in price prior to the dividend change, past earnings and dividend changes, and, consensus analysts' earnings forecasts. Overall, this provides strong evidence in support to the information content of dividend hypothesis.

Kao and Wu (1994) attempt to test the information effects on dividends and to understand the factors, which influence the dividend policy of the firm. Based on the Lintner (1956) model, they derive an extension of the Marsh-Merton Model, a rational signaling model that provides a direct test on the relation between unexpected dividend and earnings changes. The factors incorporated in Kao and Wu model include firm size, leverage of the firm, short-term adjustments due to volatility of earnings, long-term changes in earnings and systematic and unsystematic risk. Most of these factors are found to affect the management's decision to choose the optimal dividend policy and to use dividends as a signaling device. Results indicate that dividend changes reflect both internal partial adjustment operation and changes in the firm's future earnings conditions. Dividends are observed to convey information for about two years after the dividend announcement. Overall, results support the hypothesis that managers have superior information to form more precise estimates of permanent earnings and that they adjust dividends in response to changes in permanent earnings.

Chen and Wu (1999) examine the predictive relations between corporate dividends, earnings and prices and the implications of these relations for dividend signaling and smoothing. They find that dynamic relations exist among dividends, earnings and prices; that dividend changes are driven by both signaling and smoothing motives; and that information about unexpected changes in future earnings can be provided by dividend changes. Chen and Wu conduct additional tests in order to differentiate between the dividend smoothing and signaling models by imposing restrictions on the dynamic behaviour of the dividend and earning variables and information signaling. They observe that dividend often signal unexpected changes in the firm's future earnings conditions. Additionally, they provide evidence that dividend and earnings series exhibit a dynamic relation when firms use dividends to signal future earnings.

The relationship between dividends and earnings is also found to be a function of firms' size. Bhushan (1989) suggests that information acquisition is less costly for investors of large firms than for investors of small firms. That is, the amount of information available before the earnings announcement is an increasing function of firm size. If more information is available about a firm, it is less likely to be motivated to release a signal to investors. Therefore, larger firms tend to pay a smaller dividend than smaller firms and vice versa. A number of other studies however, Chang and Rhee (1990), Smith and Watts (1992), Gaver and Gaver (1993), Holder, Langrehr and Hexter (1998) to name a few, discover a positive relationship between dividends and firm size which indicates that the larger a firm, the higher the dividend payments. Eddy and Seifert (1988) document an association between firm size and abnormal returns from the announcement of large dividend increases. Dividend announcements are only examined in cases where no contemporaneous earnings announcements were made. They control for both the payout ratio of firms and size of the dividend increase and, they use means tests and analysis of variances. They show that abnormal stock price reaction to a dividend increase is greater for small firms.

CONTAGION EFFECTS

Several studies report significant positive intra-industry information transfers. For example, Foster (1981) finds that an earnings release by a firm that has a positive (negative) impact on its own stock price also has a positive (negative) impact on the stock prices of its industry rivals. Similar results are obtained by Baginski (1987), Slovin, Sushka, and Bendeck (1991), Lang and Stulz (1992). In contrast, a number of studies document insignificant intra -industry announcement effects, for example Slovin, Shushka and Polonchek (1992), Hertzal (1991). Third, the signalling theories of Akerlof (1970) and Spence (1973) imply that rivals' stock prices will react in a direction opposite to that of the announcing firm. Investors who are initially unable to distinguish between low- and high-quality firms will price shares by averaging values across all firms. Once a firm announces a dividend initiation, the market will react favourably to the positive information about this "good" firm, and the rest of the firms in the industry will be identified as "lemons" and should exhibit negative price reactions.⁸

⁸ Lang and Stulz (1992) call this phenomenon a competitive intra-industry effect, because the reactions reflect new information about the competitive balance within the industry.

Firth (1996) was amongst the first to examine⁹ whether the information revealed by a dividend change announcement affects the valuations and earnings forecasts of other companies in the same industry as the announcement firm. The study links the dividend signalling and information transfer (or contagion effects) to test whether the dividend change of one firm is associated with the stock price performance of other companies in the same industry. The results indicate that there are information transfers from dividend change announcing firms to other companies in the same industries. Specifically, an unexpected dividend increase (decrease) for one firm led to increased (decreased) stock returns for nonreporters. The abnormal stock returns of both the dividend announcers and the non-announcers were positively associated with both changes in analysts' earnings forecasts of the other companies and actual changes in future profits and dividends. The magnitude of the information transfer is found to be related to the magnitude of the dividend change, the correlation of stock returns between the announcer and non-announcer, and the immediately prior dividend change history of the other company.

Laux, Starks and Yoon (1998) find that large revisions in dividends are accompanied by stock price reactions for industry rivals of the announcing firm and show that firm characteristics can influence whether rival firms have a contagion or a competitive reaction. They imply that regardless of how refined the industry definition is there may still be cross-sectional differences in information transfer. They observe that for rivals without extensive market power or growth options relative to the announcer, dividend increases elicit no reaction and dividend decreases elicit a negative reaction. Conversely, rivals with relatively more market power and growth options experience positive reactions to dividend increases and no reaction to dividend decreases. Overall, Laux et al conclude that the intra-industry effects of dividend revisions are apparent only when the industry information implicit in an announcement is not offset by the effects of competitive realignments that become more likely with the announcement.

However, Howe and Shen (1998) examine the intra-industry information effects of announcements of dividend initiations and find no contagion effects. Results indicate that the share prices of industry competitors do not react to dividend initiations. Further, analysts do not revise their earnings forecasts for non-announcing rival firms. They conclude that the information conveyed to the market by the decision to initiate dividends contains no industry-wide component. They also note that dividend initiation appears to be a firm-specific event.

⁹ Boim (1977) was the first study to examine the information transfer as a result of dividend changes but her study was limited to the dividend omission announcement of only one firm.

DIVIDENDS AND BANK MONITORING

Low, Glorfeld, Hearth and Rimbey (2001) establish a new link between the theories of banking and dividend policy in an examination of how bank monitoring and firm dividend signals complement one another to resolve information asymmetries. They investigate the relationship between the market reaction to dividend omission announcements and bank debt, using a sample of firms that omitted their dividends between 1978 and 1996. They use daily stock price returns for each firm in the sample along with various measures of bank debt (for example, the firm's bank debt in current and long-term liabilities). In order to control for size, the sample is further divided into sub-samples consisting of large and small firms. Results indicate that in the presence of a bank lending relationship, announcements of dividend omission by small firms are interpreted differently than similar announcements made by large firms. In the case of small firms, the signal associated with the firm's banking relationship provides a framework for interpretation of the firm's dividend decision. Evidence indicates that the presence of banks as monitors is observed to be of greater informational value to investors than the presence of private non-bank lenders. In contrast, when examined large firms, results indicate that investors do not value the role of bank monitoring, and tend to react more negatively to announcements of dividend omission in the presence of high level of bank debt. This response was observed to be driven by concerns over the firm's ability to meet its financial obligations, rather than any third-party review of these better-known firms. Overall, the importance of the paper is the evidence provided that banks serve as an important signaling role in influencing investors' assessment of the dividend decisions of small firms.

INTERNATIONAL EVIDENCE

Overall, empirical evidence provided in the literature is mixed. Therefore, there exist a need for further testing of the predictions of the hypothesis in countries outside the US where the institutional, financial and corporate governance systems differ. These differences between the European countries under consideration constitute the main motivation of this part of my thesis; as to the best of my knowledge a study of this nature has not been previously conducted. In the this section I set a review of the international evidence found in the literature around the share price behaviour on the dividend announcement date, while in the next section, I firstly put forward the motivation and, secondly, I set the hypothesis to be tested.

Dewenter and Warther (1998) compare the dividend policies of U.S. and Japanese firms, partitioning the Japanese data into keiretsu, independent and hybrid firms. They draw on the differences between the U.S. and Japanese corporate governance systems and examine the correlation between dividend

changes and share returns, and the reluctance of managers to change dividends. They argue that close ties between managers and investors in Japanese firms, and especially in keiretsu firms, substantially reduce information asymmetries and agency conflicts relative to their US counterparts. Consistent with the predictions of the signaling hypothesis, they find that Japanese managers need not fear adjusting dividends in response to earnings changes. They conduct an event study of dividend omissions and initiations and find that the Japanese announcements are met with smaller share price reactions than the concurrent U.S. announcements. Moreover, they find that US stock price reactions are significantly tied to the magnitude of the change in the firm's dividend yield in contrast with Japanese¹⁰ reactions. Japanese keiretsu firms are also found to cut dividends more often and respond to poor performance by cutting dividends more quickly than either U.S. or independent Japanese firms.

Seifert (1997) examines whether there are significant market adjusted earnings changes associated with large dividend changes in the US, Canada, France, Germany, Australia and the UK for the period 1984 to 1993. Results show significant adjusted earnings changes right around the time of dividend changes. This evidence is supportive of the idea that when firms increase or decrease their dividends significantly, or initiate or omit their dividends, there are similar earnings changes right around the time of the dividend changes (defined as the period from 1 year before, to 1 year after the annual dividend change). He finds only weak support for Lintner's contention that significant permanent earnings changes take place before firms change their dividend. On the other hand, almost no support is found for the information/signaling notion that dividend changes foreshadow continual significant earnings changes. Interestingly, Seifert finds that the pattern of adjusted earnings changes is similar in all the countries under consideration especially in the period right around dividend changes, despite the fact that the dividend behaviour in the US differs from the one in the other countries.

Amihud and Murgia (1997) investigate the tax-based signaling models, which propose that higher dividend taxation is a necessary condition to make them informative about companies' values. According to these models, dividends in Germany should not be informative because dividends are not tax disadvantaged but are in fact taxed lower for most investor classes. They conduct an event study examining the reaction of share prices to announcements of dividend changes for the period 1988 to 1992. Results show that dividend increases induce a significant positive reaction in share

¹⁰ Estimates of the Lintner (1956) speed of adjustment coefficient indicate that Japanese keiretsu-member firms adjust their dividends more quickly than do US firms or Japanese independent firms.

prices equal to 0.965 percent ($t = 6.97$) while dividend decreases induce a reduction in share prices equal to -1.73 percent ($t = 4.46$). The share price reaction to dividend changes and to earnings changes for the same year is also examined, and results provide evidence that dividends contain information beyond that contained in earnings despite of the earlier announcements of estimated and actual earnings dividend news. Amihud and Murgia conclude that the positive price reaction to dividend changes may simply support Black's (1976) statement that investors care about dividends directly.

Romon (2000) examines both the ex-dividend day and dividend announcement day share price reactions in France for the period 1991 to 1995 by introducing the dividend policy stability criterion in event studies. The sample consists of 203 companies quoted on the Parisian Stock Exchange, and is divided according to the firm dividend policies. He uses the dividend yield variable as a proxy for dividend stability and distinguishes between three groups of firms characterised by stable dividend policies (low, medium or high). Results obtained on both the global sample and the stable dividend yield firm sample and confirm previous research results and validate the dividend announcement informational effect hypothesis. However, he observes disparities in cumulative average abnormal returns according to the firm group stable dividend yield. The cumulative average abnormal returns calculated on the global sample, prove to be the result of a sum of different cumulative average abnormal returns. Overall, results show that the informational effect of dividends appears to be different according to the firm dividend yield policy (low, medium or high).

Aivazian, Booth and Cleary (2001) compare the dividend behaviour of firms operating in different institutional regimes. The sample consists of companies in eight developing countries on the one hand and of ninety-nine US companies for the period 1980 to 1990 on the other. They consider the US as a market-oriented country, whereas all eight developing countries are classified as bank-oriented countries. This classification is found to be important for the role of dividends both as a signal and as a pre-commitment device. Firstly, they apply the Lintner (1956) model and find that dividends tend to be more sensitive to current earnings and less sensitive to prior dividend payments in bank-oriented countries than in the US; which implies that developing countries move more quickly to their target level. As a result, in developing countries dividends are less likely to be used as a signal for future earnings. Secondly, cross sectional regressions are conducted using the dividend yield as the dependent variable, and business risk, debt ratio, tangibility, logarithm of sales, return on equity and market to book as the independent variables. Cross-sectional results proved difficult to find good empirical proxies for the informational asymmetries. Overall, the results show that the heavy reliance

on bank financing and the relative small emphasis placed on external capital markets as a source of finance in developing economies, relative to developed ones, alleviates informational asymmetry problems and reduces the signaling value associated with dividends. As a result, dividends appear to be less sticky in the less developed capital markets.

4.3 STUDY MOTIVATION: INSTITUTIONAL, FINANCIAL AND CORPORATE GOVERNANCE DIFFERENCES BETWEEN EUROPEAN COUNTRIES, INFORMATION ASYMMETRY AND HYPOTHESES TO BE TESTED.

The main motivation of my thesis is to test whether theories developed in the US can also be applied to European countries. I show that differences in the institutional structure as well as the financial and corporate governance systems (for example, differences in the ownership structure and concentration, differences in the bank involvement amongst others) between countries, are likely to result in different levels of information asymmetry and I test whether the level of information asymmetry across countries is reflected in the share price reaction to dividend announcements. To the extent that dividends signal the future (and/or current) prospects of the company, then in countries characterised by low information asymmetries the share price reaction to announcements of dividend changes would be expected to be lower than in countries where investors are less informed about the management's actions. It seems reasonable to assume that the market reaction depends upon the quality and quantity of information available to the market at the moment of the announcement.¹¹

The information quality of the firm is often referred to as financial transparency. Financial transparency¹² is defined as the ability of market participants to form accurate assessments regarding the firm's current state and future prospects. The degree of transparency depends on both the willingness and ability of management to rectify any informational discrepancies with market participants.¹³ The overall level of transparency is probably a function of several components,¹⁴ which can be both country and firm specific. Individual firm transparency (or information disclosure) is important because differences in transparency may arise from individual firm characteristics such as size, growth prospects, profitability¹⁵ or analysts following the firm. Investors in firms with low levels of transparency may seek improved information, which might be achieved through dividend

¹¹ Bajaj and Vijh, (1990), Elfakhani (1995)

¹² Henceforth, transparency

¹³ See Ang and Ciccone (2001) provide a full discussion on financial transparency and examine the components of financial transparency using an international sample of firms.

¹⁴ For example, Lowenstein (1996) mentions the accounting disclosure standards; Atiase (1995), Freeman (1987), Bhushan (1989) mention firm-specific characteristics such as size; Benesh and Peterson (1986), Brown (1998) mention profitability and poor/good performance.

¹⁵ Profitability is an important factor because firms may disclose more information in good times than in bad times.

announcements.¹⁶ Therefore, firms with low levels of transparency are expected to display a greater positive (negative) market reaction to a dividend increase/initiation (decrease/omission) announcement as the market perceives dividends as substituting for the scarcity of quality information.¹⁷

A potential component of information asymmetry between countries is related to corporate governance structures, the legal environment and ownership structure. According to Aivazian, Booth and Cleary (2001) much of the financial theory on which dividend policy is based comes from a capital market perspective. This perspective assumes an arms length financing and generates dividend policy implications from models of signaling and information asymmetries. Perhaps the initial cause of information differences is the firm's country of origin. As countries vary in history, development and culture, so they vary in corporate governance structures. Certain pressures originating from the governance structures may induce a firm to disclose less or more information. Views on the financial system overlap each other to a large extent but they all discuss the differences between at least two types, insider systems and outsider systems¹⁸ (Franks and Mayer, 1997). Detailed expositions regarding the different types of systems can be found in Prowse (1992, 1996), Row (1993) and Shleifer and Vishny (1997) amongst others. Generally, the Anglo-American system is labelled as an outsider system where the number of listed companies is large, the process of acquiring control (not only participate in equity return) is effectively market oriented (i.e. there is a liquid capital market with frequently traded ownership and control rights) and there are a few corporate holdings or interlocked patterns of ownership. In such countries information asymmetry (and agency costs) problems are high. Thus companies need to signal to the market their private information. In insider systems (or bank-based systems), such as Japan and Continental Europe, ownership is typically concentrated in a few hands holding large block shares of corporate equity and control rests with corporate insiders. These shareholders may be individuals, family holdings, financial institutions, management, bloc alliances, and conglomerates or cross shareholdings. In such markets, information

¹⁶ Ang and Ciccone (2001) note that since dividends are paid from retained earnings, a minimum amount of earnings must be earned to perpetuate a dividend policy, transmitting a strong, informative signal to the market participants regarding future earnings.

¹⁷ Measurement of financial transparency is beyond the scope of my thesis at this stage, however, it constitutes an interesting theme for future research and further development of the study.

¹⁸ Studies have also distinguished between financial systems using alternative terminology, for example Zysman (1983) and Dosi (1990) distinguished between capital market based systems and credit based systems, Berglof (1990) distinguished between market oriented and bank oriented systems, Berglof and Sjogren (1995) distinguished between Arm's length financing and control oriented financing systems, Rajan and Zingales (1990) distinguished between Arm's length systems (also used the term market based system) and relationship-based systems.

asymmetries are low; therefore companies are not likely to recur to dividend payments to signal their private information.¹⁹

Based on the above brief description of the corporate governance systems, on numerous studies mentioned as well as the discussion in the Introduction of my thesis, I assume that the UK system is a market-based system while Germany, France and Italy operate under a bank-based system. This is partly due to lower ownership concentration in the UK as compared to the other three countries,²⁰ which would be expected to result in higher information asymmetry in the UK. Gadhoun (2000) argue that ownership concentration creates a stronger link between managers and shareholders, decreases the information asymmetry and the need to signal the firm's prospects through frequent changes in dividends. He notes that the theories of dividend policy assume the widely dispersion of equity ownership and he investigates whether the traditional theoretical approaches (both signaling theory and agency theory) towards understanding dividend policy remain valid if one takes into account the ownership structure. Essentially, Gadhoun's objective was to find out if the integration of concentration as an independent variable in the dividend model can improve the explanatory power and the signification parameters of the model. He studies the Canadian market and concludes that ownership concentration plays an important role in dividend decisions.

Despite of the relative paucity of data on shareholding structure, some striking features emerge from a simple cross-country comparison. For example, Table 1.1 Panel D²¹ highlights the major differences in ownership concentration between the UK, Germany, France and Italy based on 1998 figures. The table presents the total ownership concentration of the total shareholding and of the largest shareholder. Ownership data captures both direct and indirect (ultimate) shareholdings: all voting rights controlled directly and indirectly possibly via a cascade of intermediate holdings are added (alliances based on share stakes are taken into account). The companies in these studies are listed and exclude financial institutions. In Germany, France and Italy all large (disclosing) shareholders combined own more than 60 percent (France 52 percent) of the equity capital, in contrast with the UK where they control only about 40 percent of the voting rights. The differences in voting rights held by the largest shareholder are even more remarkable: the largest owners in the median UK listed company holds a stake of 10.9 percent in contrast with the largest shareholder in Germany (52.1 percent), France (20 percent) and Italy (54.5 percent). About 85 percent of the listed non-financial

¹⁹ Indeed, Dewenter and Warther (1999) found that Japanese keiretsu firms change their dividend policy more and have less market reaction to the change than non-keiretsu firms. Dividends of keiretsu firms are probably less informative; there is less of a need to signal as these firms are not dependent on the capital markets.

²⁰ See Crama, Leruth, Lenneboog and Urbain (1998), Barca and Becht (2000).

companies in Germany, France and Italy have a large shareholder who holds at least a blocking minority (25 percent) and in about half the companies one shareholder owns an absolute majority.²² Additionally, Franks and Mayer (1997) find that almost 80 percent of the 155 French companies studied have at least one shareholder with more than 25 percent ownership. Moreover, LaPorta, Silanes and Shleifer (1999) examine the ownership structure of the 20 largest firms in 27 countries around the world and reported that all 20 firms in the UK fit the widely held definition²³ (90 percent) while Germany, France and Italy are closely held (scored 35, 30 and 15 percent respectively). Therefore, in Germany, France and Italy ownership tends to be more concentrated than in the UK and this is expected to mitigate the information asymmetry problem. This would lower the importance of dividends as a signaling mechanism and consequently share price response to dividend announcements would be expected to be lower in countries where ownership is more concentrated.

Another classification of the corporate governance in the four countries under consideration is based on the extent to which the market and legal system protect minority shareholders. LaPorta, Silanes and Sheifer (1998) examine legal rules covering protection of corporate shareholders and creditors, the origin of these rules, and the quality of their enforcement in 49 countries. They classify the UK as a Common Law country with high legal protection and the other European countries as Civil Law systems with low protection. The classification is based on an index of antidirector's rights,²⁴ and stresses the importance of the shareholders' voting system and their right to call an Extraordinary General Meeting (EGM). Results showed that Common Law Countries (UK) have the highest average antidirector rights score (4.00) of all legal families. French Civil-Law countries (France and Italy) as well as the German Civil-Law countries (Germany) afford the worst legal protections to shareholders (average score 2.33). Moreover, LaPorta, Silanes and Sheifer (1998) argue that companies in countries with poor investor protection have more concentrated ownership of their shares than countries with high investor protection. They analyse the 10 largest (by market capitalisation), non-financial, domestic, totally private (i.e. no government ownership), public traded companies in 49 different countries. They find that in the UK the mean ownership by the three largest shareholders is equal to 0.19, in Germany 0.48, in France 0.34 and in Italy 0.58. LaPorta, Silanes and

²¹ See Chapter 1: Introduction

²² See Crama, Leruth, Renneboog and Urbain (1998) for discussion.

²³ A firm in the sample is widely held if there is no controlling shareholder. To measure control they combined the shareholder's direct and indirect voting rights in the firm. The shareholder has control if the sum of his/her direct and indirect voting rights exceeds an arbitrary cut off value (20 or 10 percent).

²⁴ Antidirector rights depend on six criteria: the possibility of shareholders to mail their proxy votes, shareholders are not required to deposit their shares prior to the annual general meeting, the cumulative voting or proportional representation of minorities on the board of directors is allowed, an oppressed minorities mechanism is in place, the minimum percentage of

Sheifer (1998) conclude that ownership concentration becomes a substitute for legal protection, because only large shareholders can cope to receive a return on their investment. Furthermore, good accounting standards and shareholder protection measures are associated with a lower concentration of ownership indicating that concentration is indeed a response to poor investor protection. Ang and Ciccone (2001) compare the determinants of information asymmetry in different countries and find that the legal environment appears to have little effect on information availability; but when used the ownership dispersion as a measure of information asymmetry they concluded that information asymmetry is higher in countries with good legal environments than in countries with poor investment protection. Therefore, evidence indicates that in Germany, France and Italy the poor legal protection results in higher ownership concentration and consequently information asymmetry is expected to be lower than in the UK.

Leland and Pyle (1977) develop a signaling model that emphasises asymmetric information as a primary reason to explain the existence of financial intermediaries. They argue that financial intermediaries can signal the proprietary information of many borrowers at a cost that is lower than that of each individual borrower attempting to signal one. Information based theories of financial intermediation suggest that banks provide a unique information production and monitoring service in an information-asymmetric capital market.²⁵ A number of studies²⁶ provide evidence that the presence of bank lending relationship disseminates information about the firm that influences the market's assessment of major corporate decisions. More precisely, the theoretical basis and empirical evidence provided in the literature suggests that bank debt serves as an important signal of firm quality and contributes to reducing information asymmetries. Research also suggests that the benefits of banks as information specialists and monitors of corporate activity may have the greatest effect on small firms (Fama, 1985; Slovin, Johnson and Glascock, 1992). Whereas much information may be available about large firms, providing them easier access to capital markets, small firms are less well known. Hence their ability to obtain credit from banks may serve as a signal of value. It is in this context that I assume that bank involvement mitigates the information asymmetry in firms and consequently, lessens the signaling power of dividends. Powerful banks can more effectively induce firms to reveal information and pay debts than markets, which rely on accounting and legal systems.²⁷ Baums (1998) details the sources of private information that banks have on firms and their use to ameliorate agency costs and information asymmetry. Bank influenced firms should enjoy increase access to capital

share capital that entitles a shareholder to call for an EGM is less than or equal to 10 percent, and finally when shareholders have pre-emptive rights that can only be waived by shareholders meeting.

²⁵ See Diamond (1984), Boyd and Prescott (1986)

²⁶ See Hirschey, Slovin, Zaima (1990); James (1987); James and Wier (1990); Slovin, Sushka and Hudson (1998, 1990)

through easier access to bank debt or preferential terms on loans. In addition, bank involvement with a firm serves as a signal to outside investors and causes a certification effect, which makes it easier for firms to attract additional equity.²⁸

Banks debt is an important source of funds in Germany, Italy and to a lesser extent in France. UK companies are even less dependent on banks for external funding, and consequently banks have less monitoring activity and less access to information in the UK than in the other three countries. Particularly in the UK, banks limit their involvement in the companies to which they provide finance and typically they neither subscribe for shares in the customers nor seek to exercise a control function via board representation.²⁹ In contrast, in Germany, for example; banks play a prominent role in financing and controlling of the companies, as banks have traditionally viewed their relationship with clients as a long-term one and they are often willing to step in to help a company to avoid bankruptcy. This has been reinforced by the ownership of shares by banks and by representation on company's supervisory boards. The control of equity voting rights in large companies by German banks, and the bank's associated representation on the supervisory boards of such companies, has been argued to permit them to constrain the managements of large German companies, to act more closely in accordance with shareholders' wishes and hence reduce the agency costs involved in the owner-manager relationship for large firms. However, the major source of bank's voting power at shareholders' meetings comes not from their own holdings of equity, but from the proxy votes they exercise on behalf of shareholders who place their shares with a bank for custody and administration. Because German shares are unregistered bearer ones, the bank's securities deposit service is widely used for shares. Banks, which hold shares for depositors can exercise the voting rights, attached to these shares under the direction of depositors.³⁰ Based on the role of German banks in the firms' corporate governance both as managerial monitors and information providers the information asymmetry problem is expected to be lower in Germany than in the UK. LaPorta, Silanes and Shleifer (1999) characterise France as a "strong bank" country where banks are allowed to both own majority stakes in industrial firms and invest more than 60 percent of their capital in such firms.³¹ The rivalling financial holdings, bank participations ("Banques D'affaires") and state ownership have been predominant form of finance³² in French companies. Moreover, companies have tended to be family-

²⁷ See Levine (2000)

²⁸ See Agarwal and Elston (2000)

²⁹ See Edwards and Fischer (1994), Charkham (1994)

³⁰ Edwards and Fischer (1994) provide a detailed description of the role of banks in Germany as controlling agents and providers of information to outsiders. Also see Wenger and Kaserer (1997), Government Commission: German Corporate Governance Code: www.ecgi.org

³¹ The results are based on data obtained from the Institute of International Bankers (1997)

³² See also Government Commission: French Corporate Governance Code

oriented, growing through debt financing than risking loss of control by opting for equity finance³³. In family-oriented markets information asymmetry problem is assumed to be less severe as members of the family often hold high positions in the management of the company³⁴. In Italy, since 1936 and until 1993 the possibility for banks with demand or short-term deposits of acquiring significant shareholdings in non-financial companies was precluded by the policy of the Bank of Italy, which was in favour of separating banks from manufacturing firms. Such policy did not cover banks with no-short-term liabilities such as the Mediobanca,³⁵ which was the only one having a central role in Italian corporate governance. In Italy the company ownership structure can basically be characterised by family control, financial holding companies, cross-share holdings and state ownership. Particularly powerful families (such as the Agnelli's) and multinational industrial groups have control over nearly all listed companies.³⁶ The Italian government has traditionally maintained a dominant role in the economy and financial markets, however, the state's control participation in the economy is not always direct, and control is often exercised through a series of industrial holding companies.³⁷ In Italy (as well as in Germany³⁸) a large number of companies are organised as pyramidal groups.³⁹ Pyramidal groups are organisations, where a number of companies are controlled by the same entrepreneur (a parent company, a controlling shareholder or coalition) through a chain of ownership relations. Public held companies are very few⁴⁰ and the stock exchanges are comparatively underdeveloped, ownership and control structures are rather closed which is expected to result in lower information asymmetry compared to market-oriented countries.

The discussion above indicates that in the UK investors are better protected by the legal system, however, the German, French and Italian weakness in legal investor protection and less developed financial markets may be compensated by reduced informational asymmetry due to large shareholdings (i.e. concentrated shareholding structure⁴¹) and the role of banks, pyramidal groups and family holdings. However, it is difficult to generalise on the information asymmetry in different countries as it depends both on the country's corporate governance system and the firm's institutional

³³ International Corporate Governance: Who Holds the Reins (1995)

³⁴ See LaPorta, Silanes and Shleifer (1999)

³⁵ See Bianchi, Bianco and Enriques (1997)

³⁶ See Volpin (2002)

³⁷ See Bianchi, Bianco and Enriques (1997)

³⁸ See Koke (1999)

³⁹ See Bianco, Casavola and Ferrando (1997) for a full discussion of the role of pyramidal groups in Italy

⁴⁰ According to the Borsa Italiana Statistics only 223 companies were listed in 1998, 247 companies in 1999, 242 companies in 2000 and 237 companies in 2001

⁴¹ Berglof (1990), Franks and Mayer (1994) found that a major institutional difference across G-7 countries is the level of ownership concentration and the working of the market for corporate control. Several studies reveal significant concentration of ownership in Germany (Edwards and Fisher, 1994; Franks and Mayer, 1994; Gordon and Schmid, 1996), in France (Bloch, Kremp, 1998) and in Italy (Barca, 1995; Bianchi, Bianco, Enriques, 1998).

characteristics. Several studies⁴² have used different approaches to measure information asymmetries. Due to time constraints I have not provided a measure of information asymmetry in my thesis; however, this constitutes an interesting future and further development of the study.

To summarise, the motivation for conducting this study arises from: firstly, from the importance of dividend policy theory in the area of finance; secondly, the contradictory results found in the literature as to the share price reaction around the dividend announcement days and the non-controversially accepted evidence on dividend changes or when considering the relation between announced dividend changes and earnings found in the literature; thirdly, the lack of international studies, in particular European countries comparative studies in the area and the development of international data; fourthly, the differences in the level of information asymmetry between market-based (UK) and bank-based (Germany, France and Italy) arising from institutional, financial and corporate governance characteristics. In the light of these, I therefore form the hypothesis to be tested next.

As I have already mentioned, the purpose is to investigate the share price reaction around dividend announcements in European countries, and then to provide an analysis in relation to the dividend and earnings changes in Europe in order to conclude on the information content of dividends hypothesis. I assume that differences between the countries under consideration (for example, corporate governance, financial and institutional characteristics detailed above) result to different levels of information asymmetry. Therefore, I would expect that:

HYPOTHESIS: The Market Reaction to Dividend Changes in Bank-Based Countries (Germany, France and Italy) is Expected to be Lower than in Market-Based Countries (UK) if Dividends Mitigate the Information Asymmetries Between Managers (Insiders) and Shareholders (Outsiders).

⁴² Dierkens (1991) use the volatility in abnormal returns around earnings announcements as a measure of information asymmetry about each firm; Mitra and Owers (1995) use the number of institutions holding the firm's equity, the percentage

4.4 DATA AND METHODOLOGY

Data for the purpose of testing my hypotheses is collected from online databases, DataStream and Hydra, to cover all listed companies on the London Stock Exchange (FTSE), the Frankfurt Stock Exchange (DAX), the Paris Stock Exchange (CAC) and the Milan Stock Exchange (MIBTEL), for the period from August 1987 to August 2002. Daily Share Prices and Market Indices and Earnings Per Share (EPS) for the four countries under consideration, are extracted from DataStream. However, Dividend announcement days were constructed from Hydra, as DataStream only provides the "Load Day".⁴³ Moreover, Dividend Per Share (DPS) was also obtained from Hydra as DataStream only provides the total yearly DPS; therefore a problem arises where companies (especially in the UK) pay dividends more than once per year.

The data included in the sample had to meet three requirements. Firstly, events for which one or more prices were missing were excluded. Secondly, in order to avoid the problem of confounding effects of various announcements⁴⁴ firms that had any other specific earnings, stock splits, right issues announcements or other than cash dividend announcements within a period of twenty days either before or after the announcement day were also excluded. Finally, in an attempt to avoid non-linearity with the country Share Index, only companies registered as opposed to traded in those countries are included that is, foreign companies trading in my sample countries are excluded. The final sample consists of a total 10,717 dividend announcement events in the UK, 1,019 both in Germany, 982 in France and 633 in Italy, resulting in 13,351 pooled total number of observations.

I employ the event study methodology (Brown and Warner, 1985) for the purpose of analysing the share price reaction to dividend announcements in the four countries under consideration; country comparisons are also conducted for testing my hypothesis. The abnormal returns occurring in an interval before the event can show whether the market has anticipated the information (or implied inside information) contained in the event, while the abnormal returns in an interval after the event would be informative as to whether the market over-or-under reacts to the announcement of the event. The announcement effect exists only if abnormal returns are significant. Results reported are derived using the market model over the event window [-40, +40] days relative to the announcement day. To obtain the market coefficients, security returns are regressed against the corresponding market index

of institutional equity holding, and the number of analysts following.

⁴³ Romon (2000) checks a random sample of 40 French companies and notes that the "Load Day" provided by DataStream is a day after the announcement day. However, this does not seem to be the case, as in a number of occasions the "Load Day" is the exactly the same for a number of years; while in some other cases, the year "Load Day" provided is after the pay-day corresponding to the particular dividend payment.

⁴⁴ See Miller and Scholes (1982)

in each country over the period [-290, -41] trading days relative to the announcement day. Further, I test the robustness of my results using various alternative event study specifications: the Dimson (1979) model, the Scholes and Williams (1977) specifications to account for non-synchronous trading, the Adjusted Market Model (beta=1 and alpha=0), the Mean Adjusted Returns to overcome any potential problems arising from the market model, and the raw returns.

In the light of the information-content hypothesis prophecy I further analyse the announcement day share price reaction according to dividends and earnings changes. Theory predicts that the shares of those companies which, announce dividend increases (decreases) should on average earn positive (negative) abnormal returns (ARs), while the shares of the remaining companies, which do not alter their dividend, should, on average earn only normal returns. Usually, studies consider dividend increases and/or decreases, or dividend initiations and/or omissions but not both. I firstly categorise the sample announcements into five mutually exclusive classes on the basis of the dividend change. Following Benartzi, Michaely and Thaler (1997), I define a dividend change as the difference between period t dividend ($D_{i,t}$) and $t-1$ dividend ($D_{i,t-1}$).⁴⁵ The dividend change is given by equation:

$$\Delta Div_{i,t} = \frac{DPS_{i,t} - DPS_{i,t-1}}{DPS_{i,t-1}} \quad (1)$$

Where, $\Delta Div_{i,t}$ is the dividend change of firm i in period t ; while $DPS_{i,t}$ and $DPS_{i,t-1}$ is the firm amount of dividend per share in the in periods t and $t-1$ respectively. The categories considered are: dividend increase, dividend decrease, dividend initiation, dividend omission and no-dividend change. Dividend initiation category is to be constructed by identifying those firms whose annual dividends moved from zero to a positive number and dividend omission category are those companies which moved from a positive to zero dividend.⁴⁶ The purpose of this classification is twofold: firstly, I observe the share price variation around dividend announcements in relation to the type of the dividend change announcement in each country and secondly, that enables me to observe the group differences between the countries under consideration.

⁴⁵ Data on expected dividends and/or earnings would have been ideal but such data is scarce, particularly for continental countries.

⁴⁶ I do not require that dividend change occur after a set number of years of stable dividend policy (for example, Healy and Palepu (1988) required that a firm paid dividends for ten years to be included in their omission sample).

In order to distinguish the separate effect of a dividend announcement on a security performance it is necessary to hold constant other types of information that may be related to dividend changes.⁴⁷ Lintner (1956) has shown that the variable that contributes the most in explaining dividend changes was current earnings. In a cross-country comparative study, it is important to isolate the impact of dividend announcements because of different timing in dividend and earnings announcements in each country. For example, in the UK and France dividends and earnings are generally announced at the same time, while German and Italian companies usually do not announce their earnings and dividends at the same time (earnings announcements precede dividend announcements).⁴⁸ This means that in Germany and Italy, investors are better informed about the performance of the company when dividends are announced therefore abnormal returns on the dividend announcement day should be lower. Kane, Lee and Marcus (1984) argue that dividends could corroborate the information in earnings. However, earnings can be “manipulated” by clever accounting practices, and so may be interpreted with scepticism by investors.⁴⁹ Also, it might be the case that investors perceive dividends as realised income in contrast with earnings, which is only an accounting figure in the hands of the managers. Aharony and Swary (1980) provide evidence that the significant abnormal returns realised at the time of the announcements of dividend changes do not reflect diffusion or leakage of the information conveyed by earnings, but rather, additional information generated by the dividend announcements. Moreover, Eddy and Sheifer (1992) provide evidence to support that earnings and dividend announcements are not perfect substitutes and that dividends provide information beyond of what is provided by earnings.

I estimate the share price reaction to dividend changes and to earnings changes in each country by dividing the total sample into groups according to both earnings and dividend changes. The earnings change ($\Delta EPS_{i,t}$) is to be calculated as the difference between the firm current year earnings per share ($EPS_{i,t}$) and previous year ($EPS_{i,t-1}$) divided by $EPS_{i,t-1}$:

$$\Delta EPS_{i,t} = \frac{EPS_{i,t} - EPS_{i,t-1}}{EPS_{i,t-1}} \quad (2)$$

The groups considered are presented in **Table 4.1**:

⁴⁷ Pettit (1972), Lonie, Abeyratna, Sinclair (1996), Marsh (1993), Kane, Lee and Marcus (1984)

⁴⁸ See Amihud and Murgia (1997) for Germany and Doing Business in Italy (2000)

⁴⁹ See Kaplan and Roll (1972)

TABLE 4.1: SHARE PRICE REACTION TO DIVIDEND AND EARNINGS ANNOUNCEMENTS

Table shows the sample groups considered according to dividend change announcements in relation to earnings announcements. Notation: INC=Increase, NC=No-change, DEC=Decrease, INI=Initiation, OMI=Omission, DPS=Dividend Per Share, EPS=Earnings Per Share. According to Aharony and Swary (1980), Eddy and Sheifer (1992) dividend announcements should provide information beyond of what is provided by earnings announcements. Cases where DPS and EPS changes contradict (e.g., INC.DPS-DEC.EPS, DEC.DPS-INC.EPS etc) should be of special interest.

<u>ANNOUNCEMENT</u>		DIVIDENDS PER SHARE		
		INCREASE/ INITIATION	NO-CHANGE	DECREASE/ OMISSION
EARNINGS PER SHARE	INCREASE	INC.EPS-INC.DPS	INC.EPS - NC.DPS	INC.EPS - DEC.DPS
	NO-CHANGE	NC.EPS -INC.DPS	NC.EPS - NC.DPS	NC.EPS - DEC.DPS
	DECREASE	DEC.EPS - INC.DPS	DEC.EPS - NC.DPS	DEC.EPS - DEC.DPS

The rationale of separating the firms according to the earnings change and dividend change is to isolate the impact of dividend change announcements on the share price behaviour and investigate whether dividends provide information beyond of that provided by earnings announcements. In this case when considering the explanatory variables of the abnormal returns on the event day, the dividend change coefficient should be significantly higher than the earnings change coefficient. Therefore, abnormal returns on the dividend announcement day should be attributed to the information content of dividends. It should be noted that the situation in which earnings news and dividend news appear to conflict (for example, INC.DPS-DEC.EPS, DEC.DPS-INC.EPS etc) should be of special interest. For example, Woolridge and Ghosh (1985) noted that a dividend cut, if combined with an earnings increase, may signal good news to the market, in contrast with the prediction of the information content hypothesis. Therefore, in the case when dividend and earnings changes are of opposite sign, the stock market reaction should enable us to determine which of the two news items appears to exert the stronger influence on share prices.

In the next section I present the empirical results of this part of my thesis. Firstly, I present the share price reaction on the dividend announcement days and secondly, the share price reaction to dividend and earnings changes before the chapter concludes.

4.5 RESULTS

In this section I provide the results on the share price reaction on the dividend announcement day firstly according to dividend changes (Δ DPS) and secondly according to earnings changes (Δ EPS).

The purpose is threefold: firstly, I observe whether share prices on the dividend announcement day react according to the signalling hypothesis,⁵⁰ i.e. whether firms that increase or initiate (decrease or omit) dividends earn positive (negative) abnormal returns on the announcement day; secondly, I distinguish between the dividend and earnings announcement effects on share prices, and; thirdly, I provide comparisons between the Δ DPS and Δ EPS groups identified in each country as well as comparisons between the countries under consideration.

Table 4.2 shows the frequency of dividend changes. Panel A reports the percentage of events in each of the five dividend change groups. In the UK managers are more likely to increase dividends (dividend increases equal to 47 percent) and more reluctant to dividend decreases (6.1 percent). No-changes is the second biggest dividend change group and constitute 43 percent of the sample, while dividend omissions and initiations are less popular, only 1.8 percent of the sample. However, in bank-based countries managers do not change dividends frequently: in Germany and Italy 53.9 percent of the announcements contain no-change in dividends while in France no-changes amount to 47.6 percent of the sample. Similarly, the remaining dividend change groups in the bank-based countries follow a likewise trend. In Germany (increases equal to 30 percent, decreases equal to 7 percent), France (increases equal to 32 percent, decreases equal to 13 percent) and Italy (increases equal to 23 percent, decreases equal to 12 percent). In all three bank-based countries dividend omissions constitute around 4 percent of the data, while dividend initiations are equal to 5 percent, 3 percent and 7 percent in Germany, France and Italy respectively.

Table 4.2, Panel B shows the t-statistics of the differences in means in the frequency of dividend change. I test the hypothesis that in the UK managers increase (decrease) their dividends more (less) frequently than in the other three countries because in the UK dividends are more important in their role to mitigate information asymmetries. The t-statistics of the differences in the frequency of dividend changes in the market-based countries (UK) compared bank-based countries (Germany, France and Italy) are all significant, indicating that in the UK managers announce dividend increases more frequently than in any other country while no-changes, decreases, initiations and omissions are less frequent. This could be interpreted as an indication that in the UK where there is higher level of information asymmetry than in any other country, managers use dividends to signal the prospects of the company to the outsiders. On the other hand, in bank-based countries where outsiders are better informed about the prospects of the company, the managers are less "concerned" when announcing

⁵⁰ See Charest (1978), Aharony and Swary (1980), Brickley (1983), Asquith and Mullins (1983), Healy and Palepu (1988), Bajaj and Vijh (1990).

dividend changes. The rest of the table provides comparisons between the bank-based countries. The frequency differences between Germany and France are not generally statistically significant except that in Germany managers announce no dividend changes or initiations more frequently than in France. Comparisons between Germany and Italy show that the dividend increase group in Germany is statistically larger than in Italy in contrast with the dividend decreases group. The t-statistics of the differences between France and Italy show that in France managers increase dividends more frequently, however no-changes and initiation groups are statistically lower than in Italy.

TABLE 4.2 FREQUENCY OF DIVIDEND CHANGES IN THE UK, GERMANY, FRANCE AND ITALY

Table shows the number of companies in my sample that announce dividend changes during the period August 1987 to August 2002. The sample is divided in companies that announce dividend Increases (INC), Decreases (DEC), No-changes (NC), Initiations (INI), and Omissions (OMI). The percentage of events in each dividend-change-group is shown in Panel A. Panel B shows the T-Statistics of the differences in means of proportions of companies in dividend change groups between the four countries under consideration. T-Statistics ***Significant at 0.01 level, **Significant at 0.05 level and *Significant at 0.10 level

PANEL A: THE PROPORTION OF COMPANIES IN EACH DIVIDEND CHANGE GROUP						
	N	INCREASES %	DECREASES %	NO CHANGE %	INITIATIONS %	OMISSIONS %
UNITED KINGDOM	10717	47.3	6.1	43.1	1.8	1.8
GERMANY	1019	30.1	7.5	53.9	4.8	3.7
FRANCE	982	31.9	13.4	47.6	3.4	3.8
ITALY	633	23.1	11.7	53.9	7.4	3.9

PANEL B: THE T-STATISTICS OF THE DIFFERENCES IN MEANS OF PROPORTIONS OF COMPANIES IN THE DIVIDEND CHANGE GROUPS					
	INCREASE	DECREASE	NO CHANGE	INITIATION	OMISSION
T UK-GERMANY	14.0 ^{***}	-1.74 [*]	-3.08 ^{***}	-4.04 ^{***}	-2.83 ^{***}
T UK-FRANCE	13.98 ^{***}	-5.49 ^{***}	-1.66 [*]	-2.06 ^{**}	-2.66 ^{**}
T UK-ITALY	16.56 ^{***}	-3.63 ^{***}	-2.26 ^{**}	-5.06 ^{***}	-2.45 ^{**}
T GERMANY-FRANCE	-0.11	-0.97	3.47 ^{***}	1.85 [*]	0.17
T GERMANY-ITALY	3.18 ^{***}	-2.69 ^{**}	0.18	-2.05 ^{**}	-0.19
T FRANCE-ITALY	3.28 ^{***}	0.73	-2.85 ^{***}	-3.52 ^{***}	-0.33

4.5.1 THE SHARE PRICE REACTION TO DIVIDEND ANNOUNCEMENTS AROUND THE DIVIDEND ANNOUNCEMENT DAY IN THE UK, GERMANY, FRANCE AND ITALY

Table 4.3 shows the daily share price behaviour for 10 days before and after the dividend announcement day in the UK, Germany, France and Italy. The results are shown according to the dividend change announced. Panel A shows the results in the UK. Surprisingly, for dividend increases and decreases only day 0 results are statistically significant; however, when the dividend announcement contains an initiation or omission results are significant on the announcement day as well as in the pre- and post-announcement period. However, in the pre- and post- event periods abnormal returns are not all significant and with correct sign to conclude that the announcements are expected and that the market is over- or under- reacting to such events. Results appear to be consistent with the information content of dividends explanation, that is, managers use dividend increases (decreases) announcements in order to signal the good (bad) prospects of the company. The results show that shareholders earn a positive return of 0.57 percent ($t = 4.39$) when dividend increases are announced, but returns are negative, -1.33 percent ($t = -10.24$) when dividends are decreased. The empirical support to the information content hypothesis is further reinforced by my results, as the share price reaction to dividend no-change announcements does not appear to be statistically different from zero (returns are equal to 0.16, $t = 1.23$). Moreover, as expected shareholders' returns on the announcement day of dividend initiations are positive, equal to 1.58 percent ($t = 12.15$); in contrast returns on the announcement of dividend omissions are negative, (-0.55 percent) and significant ($t = -4.22$). My results are consistent with previous evidence (e.g. Aharony and Swary, 1980, Lonie et al, 1996) and suggest that the information content of dividends is priced in the market.

In contrast, Panel B shows that in Germany, returns on the dividend increase announcement day are negative (-0.03 percent) and insignificant ($t = -0.20$). This is also the case when dividend initiations are announced, (abnormal returns equal to -0.03 percent, $t = -0.21$). Dividend decrease and omission announcements result to positive and significant abnormal returns of 0.44 percent ($t = 2.59$) and 1.17 percent ($t = 6.91$), respectively. These results are consistent with the importance and monitoring role of banks in Germany. As mentioned in Section 5.3 banks debt is an important source of funds in Germany. Thus, the results suggest that an increase in dividends would decrease internal available funds and that would lead to higher credit risk as well as longer repayment period. However, in Germany shareholders possess an important amount of insight information, i.e. there is limited information asymmetry (at least, lower than in the UK) due to the fact that German banks own

an important share of the market,⁵¹ play a prominent role in the control of the company through representation on the supervisory board of the company, exercise voting rights and have the right to voting rights proxy. Therefore, banks are not likely to allow companies to pay dividends at the expense of their returns. Thus, an alternative explanation of these results is that in Germany shareholders interpret a dividend increase/initiation as the company being in deficiency of any positive net present values opportunities. In contrast, shareholders reward dividend decreases/omissions because they are interpreted as the less costly source of funding profitable opportunities.

According to the results set out in Panel C, France abnormal returns on the dividend announcement dates are not significantly different from zero but in general they appear to be statistically significant in the pre- and post- announcement periods (further analysed below). Dividend-increasing announcements result in returns equal to 0.15 ($t = 0.85$) while abnormal returns earned by dividend-decreasing companies equal to -0.03 ($t = -0.17$). The results of no-change companies appear to be insignificantly positive; equal to 0.18 ($t = 1.02$). Results of the remaining two dividend change groups are similar to the results obtained in Germany and equal to -0.10 ($t = -0.58$) for dividend initiations and 0.28 ($t = 1.59$) for dividend omissions. The insignificant announcement day share price reaction may be attributed to the low level of information asymmetry in France, as companies tend to be family companies, government or bank owned. Evidence obtained in my tests is similar to Romon (2000) who also obtains statistically insignificant share price reaction around the dividend announcement dates.

Panel D illustrates the share price reaction around the dividend announcement dates in Italy. As expected, results are similar to the other two bank-based countries. Dividend-increasing firms appear to experience a negative reaction equal to -0.36 ($t = -2.79$) while the market appears to react positively but insignificantly to dividend decreases, (ARs = 0.05 percent, $t = 0.38$). As in Germany and France, returns on the dividend initiation announcements are negative but not significant (ARs = -0.02 percent, $t = -0.19$), while the abnormal returns of companies that decrease their dividends are positive and significant (ARs = 0.98 percent, $t = 7.62$). These results are not consistent with the US and UK evidence and suggest that in Italy dividends do not provide consistent information to the market.

⁵¹ According to the Capital Structure shown in Table 4.2, Chapter 4 banks own 14 percent of the market.

TABLE 4.3 THE SHARE PRICE REACTION AROUND THE DIVIDEND ANNOUNCEMENT DAY IN THE UK, GERMANY, FRANCE AND ITALY

Table shows the abnormal returns around the dividend announcement day in the UK, Germany France and Italy. Results are reported according to the five dividend change groups being the dividend Increase (INC), Decrease (DEC), No-change (NC), Initiation (INI), and Omission (OMI). Results reported are calculated using the Market Model. The robustness of the results has been checked using alternative models. T-Statistics ***Significant at 0.01 level, **Significant at 0.05 level and *Significant at 0.10 level.

PANEL A: UNITED KINGDOM										
DAY	INC	T-STAT	DEC	T-STAT	NC	T-STAT	INI	T-STAT	OMI	T-STAT
-10	-0.055	-0.42	-0.036	-0.28	-0.039	-0.30	0.106	0.81	-0.244	-1.88*
-9	-0.014	-0.11	-0.051	-0.39	0.037	0.29	-0.119	-0.92	-0.236	-1.81*
-8	-0.024	-0.18	-0.012	-0.10	0.027	0.21	-0.017	-0.13	0.123	0.95
-7	0.018	0.14	-0.051	-0.39	0.018	0.14	0.106	0.81	-0.096	-0.74
-6	0.033	0.26	-0.302	-2.32	0.048	0.37	0.144	1.11	0.103	0.80
-5	0.027	0.20	0.031	0.24	0.046	0.35	-0.258	-1.98**	-0.002	-0.01
-4	0.092	0.71	-0.022	-0.17	0.018	0.14	0.244	1.88*	-0.034	-0.26
-3	0.099	0.76	0.014	0.11	0.013	0.10	0.208	1.60	0.269	2.07**
-2	0.144	1.11	0.011	0.08	-0.007	-0.05	0.106	0.82	0.097	0.74
-1	0.133	1.02	0.000	0.00	0.008	0.06	0.302	2.32**	-0.144	-1.11
0	0.571	4.39***	-1.331	-10.24***	0.160	1.23	1.580	12.15***	-0.549	-4.22***
1	0.125	0.96	0.297	2.28**	0.081	0.62	0.415	3.20***	0.136	1.05
2	0.027	0.21	0.087	0.67	0.005	0.04	0.121	0.93	-0.446	-3.43***
3	0.026	0.20	0.072	0.56	-0.008	-0.06	-0.048	-0.37	-0.197	-1.51
4	-0.040	-0.31	0.139	1.07	-0.055	-0.43	-0.221	-1.70*	-0.109	-0.84
5	-0.064	-0.50	0.056	0.43	-0.066	-0.51	-0.366	-2.81***	0.161	1.24
6	-0.002	-0.01	0.095	0.73	-0.014	-0.11	0.102	0.79	-0.214	-1.65*
7	-0.083	-0.64	0.085	0.65	-0.063	-0.49	-0.283	-2.18**	-0.225	-1.73*
8	-0.128	-0.99	-0.069	-0.53	-0.056	-0.43	-0.102	-0.79	0.252	1.94*
9	-0.061	-0.47	0.150	1.16	-0.054	-0.41	0.089	0.69	0.257	1.98**
10	-0.105	-0.81	0.166	1.28	-0.045	-0.34	-0.023	-0.18	-0.099	-0.76

PANEL B: GERMANY										
DAY	INC	T-STAT	DEC	T-STAT	NC	T-STAT	INI	T-STAT	OMI	T-STAT
-10	0.034	0.20	0.031	0.18	-0.088	-0.52	0.525	3.09***	0.647	3.81***
-9	0.086	0.50	0.384	2.26**	0.150	0.89	0.007	0.04	0.402	2.37***
-8	-0.028	-0.16	0.111	0.65	0.059	0.35	0.326	1.92*	-0.188	-1.11
-7	0.318	1.87*	0.081	0.47	0.032	0.19	0.133	0.78	0.222	1.31
-6	-0.067	-0.39	0.276	1.62	0.085	0.50	-0.307	-1.81*	-0.316	-1.86*
-5	-0.085	-0.50	-0.133	-0.78	0.147	0.87	0.066	0.39	0.171	1.01
-4	0.066	0.39	0.476	2.80***	-1.212	-7.14***	0.153	0.90	0.204	1.20
-3	-0.055	-0.33	-0.133	-0.78	1.165	6.86***	0.658	3.87***	0.675	3.97***
-2	0.166	0.98	0.390	2.30	0.016	0.09	0.613	3.61***	-0.268	-1.57
-1	0.138	0.81	-0.022	-0.13	0.227	1.34	-0.657	-3.87***	-0.308	-1.81**
0	-0.035	-0.20	0.439	2.59***	-1.040	-6.12***	-0.035	-0.21	1.173	6.91***
1	-0.020	-0.12	0.590	3.48***	1.324	7.80***	0.292	1.72*	-0.274	-1.61
2	0.000	0.00	-0.340	-2.00**	0.018	0.10	-0.200	-1.18	1.350	7.95***
3	-0.004	-0.03	-0.170	-1.00	-0.074	-0.44	0.725	4.27***	0.471	2.78***
4	0.103	0.61	0.105	0.62	0.045	0.26	-0.242	-1.43	-0.678	-3.99***
5	0.000	0.00	0.006	0.04	-0.054	-0.32	-0.161	-0.95	0.156	0.92
6	0.153	0.90	0.265	1.56	0.066	0.39	-0.301	-1.77*	-1.189	-7.00***
7	0.110	0.65	0.007	0.04	-0.059	-0.35	-0.138	-0.81	0.248	1.46
8	0.101	0.59	-0.307	-1.81*	-0.068	-0.40	0.117	0.69	-0.671	-3.95***
9	-0.099	-0.59	-0.436	-2.57***	0.084	0.50	0.552	3.25***	-0.188	-1.11
10	-0.249	-1.47	0.071	0.42	0.030	0.18	-0.083	-0.49	0.162	0.96

Cass Learning Resource Centre

PANEL C: FRANCE										
DAY	INC	T-STAT	DEC	T-STAT	NC	T-STAT	INI	T-STAT	OMI	T-STAT
-10	-0.146	-0.82	0.063	0.35	-0.155	-0.87	-1.279	-7.15***	0.743	4.16***
-9	-0.202	-1.13	0.268	1.50	0.189	1.06	2.180	12.19***	0.207	1.16
-8	-0.023	-0.13	0.854	4.78***	0.215	1.20	-0.678	-3.79***	-0.610	-3.41***
-7	0.075	0.42	-0.113	-0.63	0.280	1.56	0.430	2.41***	1.166	6.52***
-6	-0.300	-1.68*	0.011	0.06	-0.188	-1.05	-0.310	-1.73**	-0.428	-2.39**
-5	-0.095	-0.53	0.319	1.78*	0.016	0.09	-0.467	-2.61***	-0.020	-0.11
-4	0.140	0.78	0.248	1.39	0.026	0.15	-0.173	-0.97	-1.194	-6.67***
-3	-0.211	-1.18	-0.516	-2.88***	0.126	0.70	-0.141	-0.79	0.694	3.88***
-2	0.284	1.59	0.237	1.32	0.120	0.67	-0.459	-2.57***	-0.242	-1.35
-1	0.028	0.15	-0.521	-2.91***	0.156	0.87	-0.046	-0.26	0.553	3.09***
0	0.151	0.85	-0.031	-0.17	0.183	1.02	-0.103	-0.58	0.284	1.59
1	0.213	1.19	0.458	2.56***	-0.121	-0.68	-0.397	-2.22**	0.899	5.02***
2	-0.074	-0.42	0.148	0.82	-0.208	-1.16	-0.487	-2.72***	0.388	2.17**
3	0.177	0.99	-0.486	-2.72***	0.090	0.50	-0.289	-1.62	-0.720	-4.02***
4	0.239	1.34	0.009	0.05	0.003	0.02	-0.394	-2.20**	0.943	5.27***
5	-0.218	-1.22	-0.015	-0.09	-0.161	-0.90	-0.499	-2.79**	0.262	1.47
6	-0.094	-0.52	-0.307	-1.72*	-0.011	-0.06	0.281	1.57	-1.230	-6.88***
7	0.032	0.18	-0.362	-2.03**	-0.074	-0.41	-0.130	-0.73	0.457	2.56***
8	-0.053	-0.30	0.136	0.76	-0.347	-1.94	0.451	2.52**	0.497	2.78***
9	-0.170	-0.95	-0.205	-1.15	-0.024	-0.13	-0.736	-4.12***	0.467	2.61***
10	-0.322	-1.80*	-0.028	-0.16	-0.122	-0.68	-0.237	-1.32	-0.058	-0.32

PANEL D: ITALY										
DAY	INC	T-STAT	DEC	T-STAT	NC	T-STAT	INI	T-STAT	OMI	T-STAT
-10	-0.302	-2.33**	-0.263	-2.04**	-0.050	-0.38	0.006	0.04	0.648	5.01***
-9	0.047	0.36	-0.122	-0.94	0.001	0.01	-0.113	-0.88	-0.186	-1.44
-8	-0.064	-0.49	-0.062	-0.48	0.013	0.10	-0.066	-0.51	-0.409	-3.16***
-7	0.105	0.81	0.211	1.64*	0.277	2.15**	-0.207	-1.60	-0.200	-1.55
-6	0.058	0.45	0.077	0.60	0.092	0.71	-0.174	-1.35	0.295	2.28*
-5	-0.002	-0.01	-0.042	-0.33	-0.128	-0.99	0.174	1.35	-0.676	-5.23***
-4	-0.175	-1.35	0.082	0.64	0.328	2.54***	0.143	1.10	1.062	8.22***
-3	-0.069	-0.53	-0.008	-0.06	-0.133	-1.03	0.705	5.46***	-0.141	-1.09
-2	0.183	1.42	-0.027	-0.21	0.330	2.55***	-0.102	-0.79	0.323	2.50***
-1	0.148	1.15	0.196	1.52	-0.083	-0.64	-0.353	-2.73***	-0.851	-6.59***
0	-0.360	-2.79***	0.049	0.38	-0.151	-1.17	-0.024	-0.19	0.984	7.62***
1	-0.138	-1.07	-0.219	-1.70*	-0.123	-0.95	-0.026	-0.20	0.627	4.85***
2	-0.201	-1.55	0.289	2.24**	-0.206	-1.59	-0.769	-5.95***	-0.229	-1.77**
3	-0.309	-2.39***	0.254	1.97**	-0.163	-1.26	0.361	2.80***	0.212	1.64*
4	0.010	0.08	-0.049	-0.38	-0.157	-1.21	0.645	5.00***	0.480	3.71***
5	0.164	1.27	0.069	0.54	0.047	0.36	-0.262	-2.03***	-0.119	-0.92
6	-0.046	-0.36	-0.112	-0.87	0.026	0.20	-0.232	-1.80***	0.133	1.03
7	0.226	1.75*	0.092	0.71	0.093	0.72	0.003	0.02	0.196	1.52
8	-0.049	-0.38	0.121	0.93	-0.308	-2.39***	-0.021	-0.16	-0.059	-0.46
9	0.003	0.02	-0.384	-2.97***	-0.096	-0.75	-0.511	-3.96***	0.324	2.51***
10	-0.175	-1.35	0.444	3.44***	0.089	0.69	0.476	3.69***	-0.296	-2.29***

Table 4.4 shows the cumulative abnormal returns during and in the pre- and post-event periods. UK results are shown in Part (1). Dividend-increasing firms experience positive and significant returns in the days surrounding the event [-1, +1] equal to 0.83 percent ($t = 3.68$). In the pre-event period, [-20, -2] the cumulative abnormal returns of 0.36 percent are not statistically significant. In the post-event period cumulative abnormal returns are 0.76 percent ($t = 1.33$). Dividend-decreasing firms earn significantly negative abnormal returns, -1.33 percent ($t = -10.24$) in the days surrounding the event [-1, +1]. The pre- and post-event period returns are not statistically significant (-0.20 percent, $t = -0.35$ and 0.95 percent, $t = 1.68$ respectively). The market reaction to no-change announcements equal to 0.24 percent is not statistically significant ($t = 1.10$) as no news is being signalled to the market. Dividend initiations result to a positive market reaction. Around the announcement returns equal to 0.30 percent ($t = 10.20$), and in the post-event period equal to 1.21 percent ($t = 2.13$). In the pre-event period however, returns are negative but insignificant (-0.12 percent, $t = -0.21$). On the other hand, dividend omission announcements result to negative returns equal to -0.56 ($t = -2.47$) during days [-1, +1] as well as in the post-event period [+2, +20].

Returns on the German market are shown in Part (2). The cumulative abnormal returns over the period [-1, +1] of dividend increasing firms result in positive 0.08 percent, but insignificant ($t = 0.28$). In the pre-event period, [-20, -2] returns are positive and insignificant (0.79 percent, $t = 1.07$), and in the post-event period returns are negative, (-0.36 percent) but insignificant ($t = -0.49$). The abnormal returns over [-1, +1] of dividend decrease announcements of 1 percent are significant ($t = 3.42$); but insignificant in the pre-event period (0.69 percent, $t = 0.93$) as well as in the post-event period (-0.52 percent, $t = -0.70$). Dividend no-change announcements' market reaction is again only significant during the days surrounding the event, [-1, +1]; returns are equal to 0.51 percent ($t = 1.74$) and insignificant in the post- and pre-event periods. The German market reaction to dividend initiation announcements appears to be significant only during days [-20, -2], returns equal to 1.75 percent ($t = 2.36$) but insignificant in all other periods studied. Dividend omission announcements result in a positive market reaction around the event period, days -1 to +1, returns equal to 0.59 percent ($t = 2.01$), but there is no significant reaction either in the pre- or post-event periods.

The cumulative abnormal returns on the French market are shown in Part (3). Dividend increase announcements result in positive returns of 0.39 percent but insignificant ($t = 1.27$). Returns in the pre-event period are insignificant (-0.39 percent, $t = -0.50$), but significant in the post-event

period (ARs = -1.42 percent, $t = -1.82$). On days -1 to +1 dividend decreasing firms earn insignificantly negative abnormal returns. In the pre-event period cumulative abnormal returns are insignificantly positive and in the post-event period returns equal to -1.67 percent ($t = -2.14$). Dividend no-change announcements result in significantly not different from zero returns but dividend initiations and omissions returns are significant during the event dates, [-1, +1], as well as in the pre-and post-event periods.

The market reaction to dividend announcements in Italy is shown in Part (4). In the pre-event period (days -20 to -2) dividend increasing firms earn positive and significant abnormal returns equal to 1.29 ($t = 10.00$), but in the post-event period returns are significantly negative (-0.61 percent, $t = -4.71$). During the days of dividend increase announcements returns equal to -0.35 percent ($t = -2.71$). Cumulative abnormal returns around the announcement of dividend decreases, i.e. days -1 to +1, are insignificant. In the pre-event period, days -20 to -2, cumulative abnormal returns equal to 0.54 percent ($t = 4.17$) and in the post-event period, days +2 to +20 returns equal to 1.54 percent ($t = 11.92$). Dividend no-change announcements result in a negative significant market reaction. The significant positive returns during the days -20 to -2 are reversed on days -1 to +1 (returns equal to -0.36, $t = -2.77$) and this negative reaction is continued through days +2 to +20 (returns equal to -0.76, $t = -5.86$). Dividend initiating firms experience significantly negative abnormal returns during all three announcement periods studied. However, shareholders reward dividend omitting firms which earn 0.76 percent ($t = 5.88$) but the share price behaviour is reversed on days +2 to +20 - returns equal to -2.19 ($t = -16.98$).

Table 4.4 Panel B provides intra-country comparisons of the returns on and around the dividend announcement dates. Comparisons are conducted between dividend-change groups in each country. Columns 1 and 2 show the t-statistics of the differences in means on the dividend announcement dates, i.e. on Day 0 and [-1, +1] respectively. Columns 2 and 3 show the comparisons in the pre- and post-event market reaction. Comparative results between the UK dividend change groups are shown in Part (1). The t-statistics of the differences are found to be statistically significant on days surrounding the event (Day 0 and Days -1 to +1) but not in the pre- or post-event periods. Dividend-increasing firms earn statistically higher returns than dividend-decreasing, dividend-omitting or dividend no-change firms. However, dividend initiating firms experience significantly higher share price reaction than firms announcing any other type of dividend changes. On days 0 and -1 to +1 dividend decreasing firms earn statistically lower returns than dividend no-change firms or dividend omitting firms. Moreover, shareholders reward dividend initiations but not dividend omissions.

Part (2) shows the t-statistics of the differences in Germany. On Day 0 and days -1 to +1 dividend increasing firms experience lower returns than dividend decreasing firms but the difference does not appear to be statistically significant. Statistically different abnormal returns are found between dividend-increasing and omitting firms, as well as dividend-decreasing and dividend no change firms. Announcement of dividend omissions result in higher abnormal returns than dividend no change or dividend initiation announcements, but the difference significant only on Day 0. Generally differences do not appear to be statistically significant.

Part (3) provides comparisons of the returns between the dividend change groups in France. The market reaction in France does not appear to significantly differ according to the type of the dividend change announcement. However, on Day 0 dividend increase announcements result in higher returns than dividend decrease and initiation announcements. In the pre-event period, the highest difference occurs between dividend increase and no change announcements; however the t-statistics of the difference in means is not significant. In the post-event period dividend-increasing firms earn statistically higher abnormal returns than dividend initiating firms but statistically lower returns than dividend no change firms.

Part (4) shows the t-statistics of the dividend announcement returns differences in means in Italy. Results show that on Day 0 dividend increases result in lower abnormal returns than dividend decreases, initiations, omissions, and no changes. Significant differences occur between the market reaction to dividend omissions, initiations or no changes. In Days [-1 to +1] cumulative abnormal returns differences between the dividend change groups appear to be statistically not different from zero, however dividend increases appear to be higher than dividend no changes and omissions. The significant differences between dividend omissions, no changes and initiations appear to be confounded only on day 0. As in the other two bank-based countries, neither the pre-event period nor the post-event period abnormal returns differences of the means between the dividend groups appear to be statistically significant.

TABLE 4.4: THE IMPACT OF DIVIDEND CHANGES ANNOUNCEMENTS ON DIFFERENT EVENT WINDOWS

Table shows, in Panel A, the dividend cumulative abnormal returns in the UK, Germany, France and Italy around different event windows. The event windows considered are Day 0, Days -1 to +1, the pre-event period Days -20 to -2 and the post-event period +2 to +20. Results are reported according to the dividend change announcements. Five groups are considered being Increase (INC), Decrease (DEC), No-change (NC), Initiation (INI), and Omission (OMI). Panel B shows the t-statistics of the difference in means between the dividend change groups. T-Statistics ***Significant at 0.01 level, **Significant at 0.05 level and *Significant at 0.10 level.

PANEL A: ARS AND CARS IN DIFFERENT EVENT WINDOWS								
	(1) UNITED KINGDOM				(2) GERMANY			
DPS	DAY 0	CAR _{-1,+1}	CAR _{-20,-2}	CAR _{+2,+20}	DAY 0	CAR _{-1,+1}	CAR _{-20,-2}	CAR _{+2,+20}
INC	0.571*** (4.39)	0.829*** (3.68)	0.363 (0.64)	0.756 (1.33)	-0.035 (-0.20)	0.082 (0.28)	0.790 (1.07)	-0.360 (-0.49)
DEC	-1.331*** (-10.24)	-1.034*** (-4.59)	-0.200 (-0.35)	0.950* (1.68)	0.439*** (2.59)	1.007*** (3.42)	0.691 (0.93)	-0.515 (-0.70)
NC	0.160 1.23	0.248 1.10	0.383 (0.68)	-0.325 -0.57	-1.040*** (-6.12)	0.511* (1.74)	0.697 (0.94)	0.002 (0.01)
INI	1.580*** (12.15)	2.297*** (10.20)	-0.115 (-0.20)	1.209** (2.13)	-0.035 (-0.21)	-0.400 (-1.36)	1.746** (2.36)	0.638 (0.86)
OMI	-0.549*** (-4.22)	-0.557*** (-2.47)	0.440 (0.78)	-0.392 (-0.69)	1.173*** (6.91)	0.591** (2.01)	1.207 (1.63)	-1.160 (-1.57)
	(3) FRANCE				(4) ITALY			
INC	0.151 (0.85)	0.392 (1.27)	-0.390 (-0.50)	-1.418* (-1.82)	-0.360*** (-2.79)	-0.350*** (-2.71)	1.291*** (10.00)	-0.609*** (-4.71)
DEC	-0.031 (-0.17)	-0.093 (-0.30)	1.026 (1.32)	-1.667** (-2.14)	0.049 (0.38)	0.026 (0.20)	0.539*** (4.17)	1.540** (11.92)
NC	0.183 (1.02)	0.218 (0.70)	0.469 (0.60)	-1.088 (-1.40)	-0.151 (-1.17)	-0.358*** (-2.77)	0.991*** (7.67)	-0.758*** (-5.86)
INI	-0.103 (-0.58)	-0.547* (-1.76)	1.534** (1.97)	-5.391*** (-6.91)	-0.024 (-0.19)	-0.403*** (-3.12)	-1.230*** (-9.52)	-0.983*** (-7.61)
OMI	0.284 (1.59)	1.735*** (5.60)	-2.434*** (-3.12)	-2.164*** (-2.78)	0.984*** (7.62)	0.760*** (5.88)	-0.846*** (-6.55)	-2.194*** (-16.98)
PANEL B: COMPARISON OF THE RETURNS BETWEEN THE GROUPS								
	(1) UNITED KINGDOM				(2) GERMANY			
	DAY 0	CAR _{-1,+1}	CAR _{-20,-2}	CAR _{+2,+20}	DAY 0	CAR _{-1,+1}	CAR _{-20,-2}	CAR _{+2,+20}
T _{INC} -T _{DEC}	5.82***	4.51***	1.41	-1.39	-0.69	-1.63	0.09	0.14
T _{INC} -T _{NC}	3.79***	4.18***	-0.11	-1.39	1.19	-1.41	0.16	-0.62
T _{INC} -T _{INI}	-1.95*	-2.42***	0.58	0.56	0.00	0.75	-0.72	-0.68*
T _{INC} -T _{OMI}	2.13**	1.95**	-0.08	-1.11	-1.74*	-0.50	-0.23	0.25
T _{DEC} -T _{NC}	-4.55***	-3.10***	-1.45	1.52	1.66*	0.88	-0.01	-0.49
T _{DEC} -T _{INI}	-4.84***	-4.63***	-0.09	1.29	0.99	1.76*	-0.65	-0.67*
T _{DEC} -T _{OMI}	-1.28	-0.59	-0.64	0.49	-0.98	0.37	-0.25	0.20
T _{NC} -T _{INI}	-2.75***	-3.38***	0.60	1.08	-1.10	1.42	-0.82	-0.44
T _{NC} -T _{OMI}	1.35	1.13	-0.06	-0.69	-2.05**	-0.08	-0.29	0.37
T _{INI} -T _{OMI}	2.92***	3.09***	-0.45	-1.22	-1.56	-0.85	0.25	0.53
	(3) FRANCE				(4) ITALY			
T _{INC} -T _{DEC}	0.57	0.73	-1.08	0.23	-1.24	-0.72	0.58	-1.70*
T _{INC} -T _{NC}	-0.15	0.51	-1.22	-0.50	-1.04	0.02	0.32	0.20
T _{INC} -T _{INI}	0.62	1.63	-0.59	1.98**	-0.85	0.08	1.68*	0.25
T _{INC} -T _{OMI}	-0.10	-1.15	0.74	0.23	-2.44***	-1.53	0.94	0.82
T _{DEC} -T _{NC}	-0.71	-0.48	0.43	-0.53	0.64	0.81	-0.41	1.97**
T _{DEC} -T _{INI}	0.16	0.57	-0.15	1.70*	0.16	0.56	1.10	1.43
T _{DEC} -T _{OMI}	-0.23	-1.41	1.17	0.15	-1.56	-0.91	0.59	1.76
T _{NC} -T _{INI}	0.73	1.35	-0.33	2.15**	-0.33	0.07	1.67*	0.16
T _{NC} -T _{OMI}	-0.07	-1.30	1.06	0.34	-2.10**	-1.61	0.84	0.77
T _{INI} -T _{OMI}	-0.28	-1.82*	-0.90	-0.87	-1.57	-1.27	-0.16	0.53

Table 4.5 provides comparisons of the share price behaviour on and around the dividend announcement dates between the market-based countries (UK) and bank-based countries (Germany, France and Italy). Results obtained are consistent with my hypothesis and provide evidence to support that dividend announcements result in higher abnormal returns in market-based countries due to higher information asymmetry. On Day 0 dividend increases (decreases) in the UK result in significantly higher (lower) abnormal returns than in any other country under consideration. Dividend no changes differences in means between the countries do not appear to be statistically significance except for the case of Italy ($t = -1.91$). Dividend initiations and omissions also cause a significantly higher reaction in the UK market than in German, French or Italian markets. The situation remains pretty much the same when examining the cumulative abnormal returns on days -1 to +1. Dividend increases and decreases cause a higher market reaction in the UK than in the other three countries. In the pre-event period there is no significant market reaction difference between the four countries while in the post-event period dividend-decreasing firms suffer greater losses in the UK than in the other three countries. Generally, the post-event market reaction to dividend announcements does not appear to differ significantly between the countries.

TABLE 4.5 COMPARISONS OF THE ABNORMAL RETURNS AROUND THE DIVIDEND ANNOUNCEMENT DATES BETWEEN THE UK, GERMANY, FRANCE AND ITALY

Table compares the dividend announcement share price behaviour in market-based countries (UK) and bank-based countries (Germany, France and Italy). Five groups are considered being Increase (INC), Decrease (DEC), No-change (NC), Initiation (INI), and Omission (OMI). T-Statistics ***Significant at 0.01 level, **Significant at 0.05 level and *Significant at 0.10 level.

	DAY 0			CAR _{-1,+1}		
UK AGAINST	GERMANY	FRANCE	ITALY	GERMANY	FRANCE	ITALY
T _{INC}	4.14 ^{***}	2.27 ^{**}	5.27 ^{***}	3.14 ^{***}	1.64 [*]	4.09 ^{***}
T _{DEC}	-3.99 ^{**}	-3.11 ^{***}	-3.22 ^{***}	-3.10 ^{***}	-3.10 ^{**}	-1.77 [*]
T _{NC}	1.43	-0.15	-1.91 [*]	-1.12	0.12	3.06 ^{***}
T _{INI}	2.57 ^{***}	2.66 ^{***}	2.56 ^{***}	3.18 ^{***}	3.60 ^{**}	3.13 ^{***}
T _{OMI}	-2.01 ^{**}	-0.57	-2.07 ^{**}	-0.94	-1.71 [*]	-1.35
	CAR _{-20,-2}			CAR _{+2,+20}		
UK AGAINST	GERMANY	FRANCE	ITALY	GERMANY	FRANCE	ITALY
T _{INC}	-0.86	1.43	-1.11	-0.82	1.30	-0.23
T _{DEC}	-0.80	-0.97	-0.69	1.32	2.37 ^{***}	-0.49
T _{NC}	1.68 [*]	-0.17	-1.27	-0.88	1.65 [*]	1.01
T _{INI}	-1.25	-0.49	-0.80	-1.15	1.98 ^{**}	-0.14
T _{OMI}	-0.39	1.01	0.55	0.47	0.77	1.24

4.5.2 THE SHARE PRICE REACTION TO DIVIDEND AND EARNINGS ANNOUNCEMENTS AROUND THE DIVIDEND ANNOUNCEMENT DAY IN THE UK, GERMANY, FRANCE AND ITALY

Following Benartzi, Michaely and Thaler (1997) I continue my analysis to consider the share price reaction to dividend announcements according to the earnings and dividend changes. I group dividend increases and initiations together in one group because not enough dividend initiations were observed to allow me to group them separately. Similarly, I group dividend decreases and omissions in one group. Table 4.6 shows the results. In Panel A I show the number of events in each of the nine earnings-dividend groups identified, and in Panel B and C I show the abnormal returns of each group in different event windows. I consider 4 event windows, Day 0, Day -1 to +1, the pre-event period Days -20 to -2 and the post event period Days +2 to +20.

As shown in Panel A, in the UK, 5260 companies announced an increase in earnings during the period of my study. Out of these companies, 3484 (66 percent) announced a dividend increase or initiation, 301 (6 percent) announced a dividend decrease or omission and 1475 (28 percent) announced no dividend changes.⁵² Companies that experienced earnings decreases total to 4462; followed a more "conservative" dividend policy, as only 1721 announced dividend increases (39 percent), 526 companies announced dividend decreases (12 percent) and 2215 (50 percent) announced no change in dividends. Finally, UK companies with no changes in earnings amount to 996; with 54 dividend-increasing companies, 18 dividend-decreasing companies and 924 no dividend change companies. In Germany, 412 companies are found to announce earnings increases, out of which, 169 (41 percent) announced a dividend increase, 42 announced a dividend decrease (10 percent) and the remaining 201 (49 percent) announced no dividend changes. Out of 468 companies with earnings decreases, 177 (38 percent) increased their dividends, 67 (14 percent) decreased their dividends and the remaining 224 (48 percent) never announced any changes. Companies with no changes in their earnings (996 companies) hardly announced any dividend changes. In France, 410 companies fall into the earnings increase group, 172 of which announced dividend increases, 62 dividend decreases and 176 no dividend changes. Secondly, earnings-decrease group in France announced 169 (39 percent) dividend decreases, 102 (23 percent) dividend decreases and 165 (38 percent) dividend no changes. No earnings change companies amount to 136, which announced 5 (4 percent) dividend increases and decreases while 93 percent announced dividend no changes. In Italy earnings increase companies announced 104 dividend increases, 27 dividend decreases and 121 dividend no changes; earnings decrease companies announced 86 dividend increases, 71 dividend decreases and the remaining 145 announced dividend no changes. Dividend increases in the earnings

decrease Italian companies amount to 86, dividend decreases amount to 71 and dividend no change companies equal to 145. Finally, Italian companies that experienced no earnings changes amount to 79 out of which 3 announced dividend increases, 1 and 75 announced dividend decreases and no changes respectively.

Panel B shows the day 0 and days -1 to +1 share price reaction to earnings and dividend announcements in the four countries under consideration. During Day -1 to +1, UK companies that increased their earnings and dividends experienced a positive share price reaction equal to 1.06 percent ($t = 4.71$). Dividend decreasing companies also experience a positive, but not significant, share price reaction, returns equal to 0.13 percent ($t = 0.56$) and; dividend no change companies announcement returns equal to 0.53 percent ($t = 2.37$). In the earnings decrease UK group, dividend-increasing companies earn 0.55 percent ($t = 2.44$), dividend-decreasing companies experience a significantly negative share price reaction, equal to -1.51 percent ($t = -6.68$) while abnormal returns of the dividend no change companies do not appear to be statistically significant. Companies that announced no change in their earnings, and increased their dividends do not experience a significant share price reaction, while dividend-decreasing firms earn negative abnormal returns equal to -1.81 percent ($t = -3.19$). No dividend change companies' returns equal to 0.49 percent ($t = 2.17$). Generally, results show that dividend announcements provide information beyond of what is provided by earnings announcements. For example, on the announcement of dividend increases, companies that also increase their earnings experience higher abnormal returns than companies with earnings decreases. Another indication that dividend announcements dominate earnings announcements is that companies that increase their earnings earn significantly negative abnormal returns on the announcement of dividend decreases.

In Germany, companies with earnings increases, experience a positive share price reaction to dividend changes. On the announcement of dividend increases abnormal returns are positive but insignificant. Significant abnormal returns are obtained on the announcement of dividend decreases (0.91 percent, $t = 5.37$) and on the announcement of no changes (0.73 percent, $t = 2.49$). Earnings-decreasing companies only experience positive abnormal returns when they announce dividend decreases while companies that have no changes in earnings earn negative abnormal returns on dividend announcements. Significantly negative share price behaviour is obtained around dividend announcements (regardless of the direction of the dividend change) when companies announce no changes in their earnings.

⁵² Hereafter, I use dividend increase (decrease) to also mean dividend initiations (omissions).

In France, earnings increasing companies earn significantly positive abnormal returns, equal to 0.76 percent ($t = 2.59$) when they increase their dividends, as well as when they decrease their dividends, returns equal to 0.66 ($t = 2.23$). Positive abnormal returns of the dividend no change group in this category equal to 0.73 ($t = 1.71$) but are confined solely on Day 0. Secondly, earnings decreasing companies earn statistically insignificant abnormal returns when announcing dividends. Dividend-decreasing companies experience a significantly negative market reaction, returns equal to -0.29 ($t = -1.73$) but this is confined solely on day 0. The market response to dividend decreases and dividend no changes announced by earnings decreasing companies does not appear to be statistically significant. Thirdly, the market rewards earnings no change news accompanied by dividend increases as investors earn 1.28 percent ($t = 4.33$) in the period $[-1, +1]$. The negative market reaction to dividend-decreasing firms, equal to -0.22 percent ($t = -1.32$) is reversed when examining days -1 to $+1$ as returns equal to 1.11 percent ($t = 3.77$). Positive share price reaction equal to 0.57 percent ($t = 1.94$) is also obtained when considering the earnings and dividend-no change companies.

In Italy, earnings- and dividend-increasing companies recorded negative abnormal returns on day 0 equal to -0.37 percent ($t = -2.17$) as well as in period $[-1, +1]$; in contrast, dividend-decreasing companies earn positive abnormal returns on day 0 equal to 0.68 percent ($t = 3.97$) but returns are not statistically significant on days -1 to $+1$. News of increase in earnings accompanied by dividend no changes are followed by significantly negative share price behaviour on day -1 to $+1$ equal to -0.48 percent ($t = -1.64$). Secondly, the market reaction on the dividend announcement days by earnings-decreasing companies does not appear to be significantly different from zero regardless of the direction of dividend change announced. Companies that announce earnings and dividend changes of opposite directions however appear to earn negative abnormal returns, but earnings decreases accompanied by dividend decrease seem to be rewarded by 0.31 percent ($t = 1.07$) on days -1 to $+1$. Finally, highly negative share price reaction to dividend change announcements by companies that experience no change in their earnings is obtained. Dividend increase announcement returns on days $[-1, +1]$ equal to -1.62 ($t = -5.51$). Even more negative market reaction to dividend decrease announcements was obtained, abnormal returns equal to -8.59 percent ($t = -29.19$). However, this behaviour might not be representative, because of the limited number of events found in these groups. Dividend no changes announced by earnings-no change companies result to returns equal to -0.43 percent but the behaviour has not been obtained to be statistically significant ($t = -1.45$).

Panel C shows the share price reaction to the announcements of earnings and dividend changes in the four countries under consideration around the pre-event period, [-20, -2], and the post-event period, [+2, +20]. In the UK, the market reaction to dividend announcements does not seem to be statistically significant neither in the post- nor in the pre-event periods. Earnings-increasing companies experience a positive reaction to dividend-increase announcements both in the pre- and post- event periods. The market reacts negatively to dividend decrease announcements in the pre-event period, returns equal to -0.42 percent ($t = -0.74$) and in the post-event period, returns equal to -0.62 percent ($t = -1.09$). In contrast, dividend no changing companies experience positive returns equal to 0.11 percent ($t = 0.19$) in the pre-event period and negative in the post-event period equal to -0.47 percent ($t = 0.83$). Earnings decreases followed by dividend increase announcements result in positive but insignificant abnormal returns equal to 0.24 percent ($t = 0.41$) in days -20 to -2, while in days +2 to +20 cumulative abnormal returns equal to -0.45 percent ($t = -0.78$). Dividend decrease announcements by earning-decreasing companies result in positive returns both in the pre-event period (returns equal to 0.30 percent, $t = 0.52$) and in the post-event period (returns equal to 1.04 percent ($t = 1.84$)). No statistically significant cumulative abnormal returns preceded or proceeded dividend no change announcements accompanied by earnings decreases. Finally, when UK companies announced no changes in their earnings, dividend-increasing announcements were followed by negative cumulative abnormal returns equal to -1.57 percent ($t = -2.77$) while in the period before the announcements investors had no information as to the content of the announcement (i.e. no significant abnormal behaviour was obtained in the pre-event period). However, investors seem to be better informed when companies with no changes in their earnings announce dividend decreases. Cumulative abnormal returns in the pre- and post-event periods appear to be significant, equal to -0.57 percent ($t = -4.38$) and -1.40 percent ($t = -6.22$) respectively. No change earnings and dividends announce, however, have not been obtained to cause a significant market reaction.

In Germany, cumulative abnormal returns in days -20 to -2 are not statistically significant, partly due to the fact that investors are informed about the companies' activities (through banks, board representations etc) and secondly, because dividends and earnings announcements are not contemporaneous (earnings are announced a few days before dividends therefore by the time dividends are announced investors are already inform of the results of the company for the particular year). Dividend-increases following earnings increases cause an insignificant abnormal market reaction equal to 1.04 percent ($t = 1.40$) in the pre-event period and 0.16 percent ($t = 0.22$) in the post event period. Earnings increases followed by dividend decreases result in negative abnormal returns

in the pre-event period equal to -0.43 percent ($t = -0.58$) while in the post-event period returns equal to 0.58 percent ($t = 0.79$). In the post-event period dividend no changes result in cumulative abnormal returns equal to -0.58 percent ($t = -0.78$). Earnings decreases followed by dividend increases result in statistically positive abnormal behaviour in days -20 to -2 , which is reversed in the post-event period. Earnings and dividend decreases cause the market to react negatively as in the pre-event period returns equal to -1.22 percent ($t = -1.64$) and in the post-event period equal to -1.28 percent ($t = -1.73$). No significant share price reaction was obtained before or after dividend no changes that followed earnings decreases. Finally, in the last group of earnings no change companies, dividend-increasing companies appear to earn positive abnormal returns both in the pre-and post-event periods while the market reacts negatively after dividend decrease announcements. Finally, when the announcements of earnings and dividend include no changes, investors earn a positive return in the pre-event period equal to 1.42 percent ($t = 1.92$) but the positive return of 0.18 percent in the post-event period is not significantly different from zero ($t = 0.25$).

In France, earnings increases followed by announcement of dividend changes in the same direction, result in a positive market reaction equal to 0.17 percent ($t = 0.22$) in the pre-event period and equal to 0.21 percent ($t = 2.79$) in the post-event periods. Cumulative abnormal returns following dividend-decrease announcements equal to 0.58 percent ($t = 0.78$) in days -20 to -2 , while results are reversed to equal -2.07 percent ($t = -2.80$) in days $+2$ to $+20$. The reaction to dividend no-change is similar to dividend-decrease announcements, i.e. 0.57 percent ($t = 0.77$) in the pre-event period and -1.56 percent ($t = -2.10$) in the post-event period. Earning decreases result in negative cumulative abnormal behaviour both before and after the dividend change announcements regardless of the direction of the dividend change. I should note that the results of NC.EPS-INC.DPS and NC.EPS-DEC.DPS groups are based only on a limited number of events. Finally, earnings no-change announcements accompanied by dividend increases result abnormal returns equal to 4.14 percent ($t = 5.59$) in the pre-event period and equal to -0.35 percent ($t = -0.48$) in the post-event period. Dividend decreases result in significantly negative abnormal behaviour both before and after the announcement, while the reaction to dividend no change announcements is not found to be statistically significant.

In Italy, earnings increases accompanied by dividend increasing and no changing announcements result in insignificantly negative abnormal returns around the event. Dividend decreases cause a negative market reaction in the pre-event period when returns equal to -2.24 percent ($t = -3.02$)

but this behaviour is reversed in the post-event period when returns equal to 2.49 percent ($t = 3.36$). Secondly, companies that announce earnings decreases, experience a positive market reaction in the period preceding the announcement but cumulative returns are found to be negative after the announcement regardless of the direction of dividend change. Finally, Italian companies that announce no changes in their earnings accompanied by dividend increases or decreases earn significantly positive returns both in the pre- and post-event periods. However, earnings no-changes accompanied by dividend changes of the same direction do not cause a significant market reaction neither in the pre- or post-event periods.

TABLE 4.6 THE IMPACT OF DIVIDEND AND EARNINGS CHANGES ON OF THE DIVIDEND ANNOUNCEMENT DAY ARS AND CARs IN THE UK, GERMANY, FRANCE AND ITALY

Table considers the share price behaviour on the dividend announcement day according to earnings (EPS) and dividend (DPS) change announcements in the UK, Germany, France and Italy. Sample is grouped into three subsamples according to the earnings changes (EPS: INC=Increase, DEC=Decrease and NC=No-change) and then into further three subsamples being dividend INC=Increase/Initiation, NC=No-change, DEC=Decrease/Omission. Panel A shows the number of observations (N) in each group. Panel B shows the dividend announcement day 0 abnormal returns (ARs) and the cumulative abnormal returns for the period [-1, +1] for each dividend and earnings change group. Panel C shows CARs in the pre-event period, [-20, -2], and the post-event period, [+2, +20], for all the groups under consideration. T-statistics are reported in the parenthesis; *Significant at 0.01 level, **Significant at 0.05 level and ***Significant at 0.10 level

PANEL A: NUMBER OF DIVIDEND ANNOUNCEMENT EVENTS IN DIVIDEND CHANGE GROUPS									
		UK		GERMANY		FRANCE		ITALY	
Δ EPS	Δ DPS	N	%	N	%	N	%	N	%
INC	INC/INI	3484	66.2	169	41.0	172	42.0	104	41.3
	DEC/OMI	301	5.7	42	10.2	62	15.1	27	10.7
	NC	1475	28.0	201	48.8	176	42.9	121	48.0
	TOTAL	5260	100	412	100	410	100	252	100.0
DEC	INC/INI	1721	38.6	177	37.8	169	38.8	86	28.5
	DEC/OMI	526	11.8	67	14.3	102	23.4	71	23.5
	NC	2215	49.6	224	47.9	165	37.8	145	48.0
	TOTAL	4462	100	468	100	436	100	302	100.0
NC	INC/INI	54	5.4	10	7.2	5	3.7	3	3.8
	DEC/OMI	18	1.8	5	3.6	5	3.7	1	1.3
	NC	924	92.8	124	89.2	126	92.6	75	94.9
	TOTAL	996	100	139	100	136	100	79	100

PANEL B: ABNORMAL RETURNS ON THE DIVIDEND ANNOUNCEMENT DAY (DAY 0) AND DAY -1 TO +1 ACCORDING TO DIVIDEND AND EARNINGS CHANGES									
		UK		GERMANY		FRANCE		ITALY	
Δ EPS	Δ DPS	DAY 0 (T-STAT)	CAR _{1,+1} (T-STAT)	DAY 0 (T-STAT)	CAR _{1,+1} (T-STAT)	DAY 0 (T-STAT)	CAR _{1,+1} (T-STAT)	DAY 0 (T-STAT)	CAR _{1,+1} (T-STAT)
INC	INC/INI	0.734 ^{***} (5.64)	1.061 ^{***} (4.71)	0.042 (0.25)	0.038 (0.13)	0.530 ^{***} (3.12)	0.763 ^{***} (2.59)	-0.369 ^{***} (-2.17)	-0.288 (-0.98)
	DEC/OMI	-0.251 ^{**} (-1.93)	-0.126 (-0.56)	0.913 ^{***} (5.37)	0.608 ^{***} (2.07)	0.370 ^{**} (2.18)	0.658 ^{**} (2.23)	0.675 ^{***} (3.97)	0.267 (0.91)
	NC	0.522 ^{***} (4.02)	0.533 ^{***} (2.37)	0.052 (0.31)	0.732 ^{***} (2.49)	0.291 [*] (1.71)	-0.100 (-0.34)	-0.233 (-1.37)	-0.482 [*] (-1.64)
DEC	INC/INI	0.371 ^{***} (2.85)	0.550 ^{***} (2.44)	-0.058 (-0.34)	0.080 (0.27)	-0.294 [*] (-1.73)	-0.194 (-0.66)	-0.149 (-0.87)	-0.410 (-1.39)
	DEC/OMI	-1.686 ^{***} (-12.97)	-1.505 ^{***} (-6.68)	0.608 ^{***} (3.58)	1.274 ^{***} (4.33)	-0.151 (-0.89)	0.055 (0.19)	0.188 (1.11)	0.314 (1.07)
	NC	-0.182 (-1.40)	-0.041 (-0.18)	0.241 (1.42)	0.209 (0.71)	0.010 (0.06)	0.286 (0.97)	-0.036 (-0.21)	-0.218 (-0.74)
NC	INC/INI	0.125 (0.96)	0.080 (0.35)	-0.575 ^{***} (-3.39)	-0.982 ^{***} (-3.34)	N/A	N/A	N/A	N/A
	DEC/OMI	-4.305 ^{***} (-7.60)	-1.811 ^{***} (-3.19)	N/A	N/A	N/A	N/A	N/A	N/A
	NC	0.401 ^{***} (3.09)	0.488 ^{**} (2.17)	0.086 (0.51)	0.699 ^{***} (2.38)	0.258 (1.52)	0.571 [*] (1.94)	-0.243 (-1.43)	-0.427 (-1.45)

PANEL C: CUMULATIVE ABNORMAL RETURNS IN THE PRE- AND POST- EVENT PERIODS ACCORDING TO EARNINGS AND DIVIDEND CHANGES									
		UK		GERMANY		FRANCE		ITALY	
EPS	DPS	CAR _{20,-2} (T-STAT)	CAR _{+2,+20} (T-STAT)	CAR _{20,-2} (T-STAT)	CAR _{+2,+20} (T-STAT)	CAR _{20,-2} (T-STAT)	CAR _{+2,+20} (T-STAT)	CAR _{20,-2} (T-STAT)	CAR _{+2,+20} (T-STAT)
INC	INC/INI	0.401 (0.71)	0.923 (1.63)	1.039 (1.40)	0.163 (0.22)	0.166 (0.22)	2.063 ^{***} (2.79)	-0.212 (-0.29)	-0.211 (-0.28)
	DEC/OMI	-0.417 (-0.74)	0.618 (1.09)	-0.433 (-0.58)	0.583 (0.79)	0.575 (0.78)	-2.072 ^{***} (-2.80)	-2.236 ^{***} (-3.02)	2.489 ^{***} (3.36)
	NC	0.109 (0.19)	-0.472 (-0.83)	1.026 (1.39)	-0.581 (-0.78)	0.573 (0.77)	-1.558 ^{**} (-2.10)	0.781 (1.05)	-1.065 (-1.44)
DEC	INC/INI	0.235 (0.41)	-0.445 (-0.78)	0.493 (0.67)	-0.527 (-0.71)	-0.714 (-0.96)	-1.568 ^{**} (-2.12)	1.468 ^{**} (1.98)	-1.461 ^{***} (-1.97)
	DEC/OMI	0.297 (0.52)	1.042 [*] (1.84)	-1.217 [*] (-1.64)	-1.279 [*] (-1.73)	0.158 (0.21)	-1.580 ^{**} (-2.13)	1.038 (1.40)	-0.206 (-0.28)
	NC	0.426 (0.75)	-0.170 (-0.30)	0.001 (0.01)	0.425 (0.57)	-0.117 (-0.16)	-0.851 (-1.15)	1.440 [*] (1.94)	-0.862 (-1.16)
NC	INC/INI	0.290 (0.51)	-1.569 ^{***} (-2.77)	5.782 ^{***} (7.81)	3.574 ^{***} (4.83)	N/A	N/A	N/A	N/A
	DEC/OMI	-0.570 ^{***} (-4.38)	-1.402 ^{***} (-6.22)	N/A	N/A	N/A	N/A	N/A	N/A
	NC	0.719 (1.27)	-0.463 (-0.82)	1.424 [*] (1.92)	0.183 (0.25)	1.091 (1.47)	-0.743 (-1.00)	0.463 (0.62)	-0.058 (-0.08)

4.6 CONCLUSION AND FURTHER DEVELOPMENTS OF THE CHAPTER

In this part of my thesis I test the information content of dividend announcements in the UK, Germany, France and Italy. Miller and Modigliani (1961) hint that information content of dividends can explain the observed share price reaction to dividend changes. Theoretical models have been developed, for example Bhattacharya (1979), Miller and Rock (1985), John and Williams (1985), supporting that there exist an information asymmetry between the company insiders (managers) and outsiders (shareholders); therefore managers use dividends as a signalling mechanism to communicate to the market their assessment of the firm's current performance and future prospects. Three implications of the information-signalling hypothesis have been empirically tested: firstly, if dividend changes are positively associated with subsequent earnings changes, then dividends do not have the potential to transmit information (for example, Watts, 1973, Gonedes, 1978, Benartzi, Michaely and Thaler, 1997, Healy and Palepu, 1988); secondly, studies (for example, Pettit, 1972, Asquith and Mullins (1983), Aharony and Swary, 1980) empirically test the share price reaction to dividend change announcements and document that there should be a positive association between dividend changes and excess returns on the announcement day; thirdly, studies (for example, Ofer and Siegel, 1987) note that unexpected changes in dividends should be followed by market revisions of future earnings changes in the same direction as the dividend. However, evidence found in the literature is contradictory and mixed.

The purpose of this part of my thesis is to distinguish between the contradictory results in the dividend information signalling literature by testing, analysing and comparing the share price reaction to dividend announcements in European countries. Following, Franks and Mayer (1994), LaPorta, Silanes and Shleifer (1999) amongst others, I consider the countries in my sample as market-based countries (UK) and bank-based countries (Germany, France and Italy). Institutional, financial and corporate finance differences have been identified between market- and bank- based countries, which are expected to result in different information asymmetry levels in each country. For example, in bank-based countries investors should be better informed of the current performance and future prospects of their companies than in market-based countries due to more concentrated shareholding structure, the existence of more family or government held companies, the more powerful role of banks in Germany, France and Italy as compared to the UK. Considering the differences between the four countries under consideration I test the hypothesis whether the market reaction to dividend changes in bank-based countries is lower than in market-based countries because of lower information asymmetry in bank-based countries.

Data was obtained from DataStream and Hydra to cover the period 1987 to 2002. My final sample includes a total of 12, 577 dividend announcements in the UK, 1412 both in Germany and France and 873 in Italy. I employ the Brown and Warner (1985) event study methodology for the purpose of testing my hypothesis. Results reported are based on the market model over the event window [-40, +40] days relative to the announcement day. The robustness of my results has been checked using alternative models, for example the Dimson (1979) model and the Scholes and Williams (1977) model. Following Benartzi, Michaely and Thaller (1997) I separate abnormal returns around the dividend announcement dates according to the direction of dividend change. I identify five separate dividend change groups in each country being dividend increases, dividend decreases, dividend no changes, dividend initiations and dividend omissions. The purpose is to observe whether investors interpret dividend increases (decreases) as good (bad) signals about the company send by management. I analyse my results by providing both inter- and intra-country comparisons. Thereafter, I analyse the market behaviour around the dividend announcement dates in my sample countries according to both earnings and dividend change announcements. The purpose is firstly to test whether dividend change announcements contain information beyond of what is contained in earnings announcements, secondly to distinguish between the dividend announcement and the earnings announcement impacts on share prices especially in countries where dividends and earnings are announced contemporaneously.

Results provide evidence to support my hypothesis, as statistically higher abnormal returns have been obtained in the UK as compared to any of the other countries under consideration. The t-statistics of the differences in means reported on Table 4.4 show that on the event windows studied (day 0, [-1, +1], [-20, -2], [+20, +2]) the market reaction to dividend change announcements is higher in the UK than in Germany, France or Italy reflecting the higher level of information asymmetry in market-based countries as opposed to bank-based countries. Generally, results lead to the conclusions that in the UK where information asymmetry is high managers use dividends as a mechanism to mitigate information asymmetries. Therefore, positive (negative) abnormal return behaviour following dividend increases/initiations (decreases/omissions) indicates that investors perceive dividend increases (decreases) as good (bad) signals for the prospects of the company. However, the analysis of the results in bank-based countries leads to the conclusion that in these countries where shareholders are better informed about the current performance and future prospects of the companies, an increase in dividends is perceived as lack of investing opportunities while a decrease in dividends is thought to be a way to raise costless sufficient funding for investing in positive net present value opportunities. This can be derived from the fact that dividend cuts/omissions are

rewarded in bank-based markets. The information content of dividend hypothesis is further reinforced by the analysis and comparisons of the abnormal returns around the announcement dates according to the direction of dividend and earnings changes. It is shown that dividends provide information beyond of what is provided by earnings announcements. For example, in the UK companies earn higher abnormal returns when dividends and earnings are of the same sign.

These conclusions lead to the need of further research in the area in order to test, for example, whether companies that announce earnings increases accompanied with dividend decreases do so in order to finance new investment opportunities with internal funding which is the less costly source of funds. In this case the capital expenditure should increase in the following years. Moreover, the significant positive abnormal returns following dividend decreases/omissions stimulate the need for further research in order to test whether other announcements near the time of dividend announcements drive the positive reaction to the announcement of dividend decreases/omissions.

The results could also be checked for sample firm consistencies across countries. It could be that firms in the UK are not directly comparable to those in Continental Europe because of their level of information asymmetries as reflected, for example, by their size. Therefore, the control firm procedure will overcome this potential bias. It could also be of interest to see whether the results for Continental European companies that trade in the UK/US stock exchanges or those owned by foreign investors behave in the same way as their UK/US counterparts. Unfortunately, the full data necessary to explore these issues is not available and the extent to which those factors will alter the conclusions is a subject of further research.

**CHAPTER 5: THE AGENCY CONFLICT AND DIVIDEND BEHAVIOR IN THE UNITED KINGDOM,
GERMANY, FRANCE AND ITALY: A TEST OF THE FREE CASH FLOW HYPOTHESIS**

5.1 INTRODUCTION

Miller and Modigliani (1961), explicitly or implicitly assume an ideal economy characterised by symmetric information, perfect complete markets (with no taxes) and rational behavior, and argued that given the firm's investment policy is constant, dividend payout policy is irrelevant to the value of the firm and consequently has no effect on shareholders' return. In this chapter I will focus on the violation of the rational behavior assumption as an added component to the information asymmetries analysed in the previous chapter. The purpose is to investigate the link between dividend policy and agency conflicts.

Miller and Modigliani (1961) hint at agency considerations when they argue that differential valuation of distinct payout stocks could occur if there is a systematic tendency for external funds to be used more productively than internal funds (page 432). They rule out this behavior, which is consistent with the existence of conflicts of interest between managers and the providers of financing, because of the assumption of complete contracting possibilities and full information rules. When relaxing the assumption of complete (and fully enforceable) contracts, a firm is more than just a black box.¹ More recently, and especially after the Jensen and Meckling (1976) seminal paper on conflicts of interest between managers and shareholders, dividend policy has also been analysed in the framework of the agency theory (e.g. Easterbrook, 1984, Jensen, 1986, Fluck, 1998, 1999, Mayers, 1998, Gomes, 2000). The agency perspective of dividend policy questions two particular assumptions of Miller and Modigliani (1961); firstly the assumption of independence between dividend policy and the investment decisions of the firm and secondly, the assumption that managers' interests are aligned with those of shareholders so that any profits are distributed pro-rata to all shareholders. Based on the first assumption, the agency conflict addresses the possibility that the payment of dividends may have a positive impact on the efficiency of marginal investments; while on the second aspect, it considers that managerial interests may clash with those of shareholders so that a diversion of assets may occur to the benefit of insiders (managers) and at the expense of outsiders (shareholders).

With the separation of ownership and control, a principal (shareholder)-agent (management) problem occurs. According to Jensen and Meckling (1976) an agency relationship exists whenever there is an employment relationship in which one person's welfare depends on the actions of another. This reflects the possibility that managers pursue their own goals at the

¹ See Black (1976), for a detailed discussion see Allen and Michaely (1995, 2001)

expense of shareholders' interests. Consequently, agency costs are incurred by shareholders to insure that the managers act in the best interests of shareholders who are not actively involved in the management of the firm. There are many ways of reducing agency costs². Dividends have been proposed as a mechanism to mitigate agency problems between the company's management and shareholders and to serve as one means of monitoring or bonding management performance. The agency perspective of dividend policy asserts that cash payments to shareholders may reduce agency problems by increasing the frequency of external capital raising,³ and associated monitoring by investment bankers and investors. For example, banks will require a careful analysis of the creditworthiness of the firm, and market will require prospectus filings for the new equity issues. Thus outside suppliers of capital help to monitor the owner-manager on behalf of outside equity owners.

According to Jensen (1986), dividends reduce agency conflicts by eliminating free cash flow in the possession of the management. The starting point of the problem refers to the managers investing free cash flow in negative net present value⁴ projects instead of paying it out to the shareholders in order for the former to pursue their own personal benefits at the expense of the latter. Jensen argues that managers have incentives to expand their firm beyond the optimal size because of several reasons. Firstly, cash retentions give managers autonomy that they would lose if they had to go frequently to the market to raise new capital. Secondly, increased firms size enhances corporate prestige and managers' salaries, and finally, the tendency of companies to reward middle managers through promotions rather than bonuses creates a bias towards growth. The agency costs that result from this overinvestment decrease the value of the firm. Like the signaling hypothesis, the free cash flow argument suggests there should be a positive relationship between the direction of dividend policy change and the share price reaction.

However, the free cash flow argument differentiates itself from the signaling hypothesis, with respect to the level of growth opportunities faced by the firm. Lang and Litzenberger (1989) investigate the informational content of dividends in the framework of the principal-agent conflict. If managers are overinvesting, an increase in dividends will reduce the overinvestment and increase the market value of the firm. Similarly, a dividend decrease signals that more negative net present value projects will be undertaken. They distinguish between overinvesting and value maximising firms on the basis of Tobin's Q and find that the announcements of sizable dividend changes have a significant impact on the stock price of the firm with average Tobin's Q

² For example, Agrawal and Knoeber (1996) examines five mechanisms to control agency conflicts being the shareholdings of insiders, institutional and large blockholders, outside directors, debt policy, managerial labour market and market for corporate control.

³ Rozzoff (1982), Easterbrook (1984)

less than one (overinvesting firms), but no impact for firms with average Q's greater than unity (value maximising firms). This evidence is consistent with both the overinvestment and cash flow signaling hypothesis.⁵ Further tests of returns according to the direction of dividend change provide evidence to support the free cash flow hypothesis over the signaling hypothesis.

The importance of dividends as a monitoring mechanism varies as a function of the level of agency conflicts, which in turn vary as a function of the corporate governance system. Corporate governance has been defined⁶ as the system in which business corporations are directed and controlled by shareholders and other stakeholders. Monitoring of managers and the monitoring entities vary as a function of the ownership structure, the structure of corporations, the role of the banking system in the economy, business circumstances, the efficient functioning of capital markets, the level of product and capital market competition both domestically and internationally and legal system.⁷ All these institutional, financial and corporate governance characteristics differ between various countries.⁸ Differences between countries have also been observed in respect to the level of growth opportunities.⁹ Therefore, a country comparative study would prove an ideal environment to analyse the role of dividends as a management control device.

In this part of my study I argue that in countries where the corporate governance system provides better management control mechanisms as well as in countries where the interests of the management and the shareholders are more compatible, the monitoring role of dividends is less important. The disparity of growth opportunities in various countries would also result in agency conflict differences. This would affect the dividend policy of the firm as in countries where there exist better growth opportunities, all else equal, managers are less likely to invest in negative net present value projects and vice versa. According to the agency conflict explanation of dividends agency conflicts are reflected in the share price behavior around dividend change announcements. Therefore, in countries with lower agency conflicts and/or higher growth opportunities, abnormal

⁴ More precisely, Free Cash Flow is defined as the cash remaining after all positive net present value projects have been undertaken

⁵ If managers have information about future and/or current cash flows that investors do not have, investors interpret a dividend increase (decrease) as a signal that management anticipates higher (lower) cash flows. See (Lintner (1958), Fama and Babiak (1968), Bhattacharya (1979), John and Williams (1985), Miller and Rock (1985), Ambarish, John and Williams (1987).

⁶OECD (1999), also consistent with the Cadbury Committee (1992) definition.

⁷ La Porta, Silanes, Shleifer and Vishny (2000) discuss differences in the legal systems around the world. Halpern (1999) provides a comparative discussion on agency conflicts in market- and bank- oriented corporate governance systems. Jovanovic (2001) summarises findings of a number of empirical studies and gives a view of current thinking on association between legal rules and financial systems characterised by ownership patterns, nature of equity, governance structure, finance behavior and capital structure.

⁸ See Franks and Mayer (1997), Berglof (1990), Rajan and Zingales (1990), Zysman (1983), Dosi (1990), Shleifer and Vishny (1997), Halpern (1999) amongst others.

⁹ La Porta and Silanes (1998), report the average annual percent growth per capita gross domestic product (GDP) for the period 1970-1993 in different countries around the world. See Chapter 1, Table 1.1.

returns around the dividend announcement day are expected to be lower as compared to countries with higher agency conflicts and/or lower growth opportunities.

The motivation for this part of my study is threefold. First, linkages between the level of free cash flow, dividend policy and country specific factors such as market size and capital structure could enable shareholders, financial analysts and others, to better assess financial performance, and thus make more informed investment decisions. Second, the level of free cash flow could affect prices, corporate investment, as well as prospects for future growth, so my results could be of interest to policymakers, managers and shareholders. For example, insights into the cash management activities of companies in different countries could assist government policymakers in determining whether regulations governing the use of free cash flows should be introduced to protect consumers, shareholders and others. Third, despite the importance of cash management and dividend policies, I believe that this comparative study is the first of its kind to be conducted in Europe and especially in the UK, Germany, France and Italy. Therefore, the results may not only provide a comparative basis against which prior empirical studies carried out in the US can be evaluated, but also help simulate further tests of the dividend policy in European markets.

To the best of my knowledge no European cross-country study has been previously conducted in order to test the free cash flow hypothesis. For the purpose of testing my hypothesis I use the abnormal returns around the dividend announcement dates as calculated in Chapter 4.¹⁰ I use the market-to-book ratio, as a proxy for growth opportunities in order to distinguish between value maximising (high market-to-book) and overinvesting (low market-to-book) companies. According to the cash flow overinvesting hypothesis, low market-to-book companies should earn higher abnormal returns on the announcement of dividend changes. In order to distinguish between the predictions of the cash flow overinvestment and signalling hypotheses, I follow Lang and Litzenberger (1989) and I analyse the abnormal returns according to the direction of the announced dividend change. My study differs from their work not only in the sense that it is a European comparative study, but also in the sense that I use a larger sample and a longer study period. Moreover, I extend Lang and Litzenberger (1989) in order to include not just the announcement of dividend increases and decreases but also dividend initiations, omissions and the cases where companies announce no dividend payout change.

In all the countries under consideration results are generally in line with the agency conflict and the signalling hypotheses. Cross country comparisons show that the share price response to dividend announcements in the UK is significantly higher than in any other country under

consideration. This is might be attributed the higher level of agency conflicts and/or information asymmetries in the UK. Further support for the hypothesis is provided by the fact that the announcement day abnormal returns for bank-based countries do not differ significantly. I attribute this to the existence of equal levels of agency conflicts and/or information asymmetries in bank-based countries.

The rest of my study is organised as follows. In Section 5.2, I provide the literature review around the monitoring role of dividends and the cash flow hypothesis. In Section 5.3, I describe the corporate governance characteristics in each country that are expected to affect the level of agency conflicts and I form my hypothesis. In Section 5.4, I describe the data and methodology used to test my hypothesis. In Section 5.5, I discuss the empirical results. Finally, in Section 5.6, I set the conclusions of the study and I make recommendations for further developments.

5.2 A REVIEW OF THE LITERATURE: THE MONITORING ROLE OF DIVIDENDS AND THE FREE CASHFLOW HYPOTHESIS

Literature on the agency perspective of dividend policy can essentially be categorised into five types. Firstly, studies concerned with dividend policy in the context of conflicts of interest between shareholders and managers and shareholders and debtholders;¹¹ secondly, those which have attempted to measure the relationship between dividends and the overinvestment hypothesis of Jensen (1986); thirdly, tests of the agency-transaction costs trade-off model of dividend policy firstly proposed by Rozeff (1982); fourthly, tests of Easterbrook's (1984) capital market monitoring hypothesis; and finally, studies analysing interactions between dividend policy and other monitoring mechanisms.

5.2.1 THEORETICAL RELATIONSHIP BETWEEN DIVIDENDS AND AGENCY CONFLICTS

Jensen and Meckling (1976) detail two types of agency conflict namely the agency conflicts of equity and debt. When the management and ownership of the firm are not separated, the manager-owner will make operating decisions that maximise his/her profits. The agency costs arise when owner-managers sell portions of their shareholding to the so-called outside equity owners. In the case where management and ownership of the firm are separated, agency issues are created because managerial and shareholder interests differ. The owner-manager will only incur a portion of the costs of various (managerial) perquisites that he/she obtains. Utility is derived from pecuniary returns and also comes from consumption of various perquisites. Therefore, the

¹⁰ Dividend announcement day returns in Chapter 4 are calculated using the event study methodology (Brown and Warner, 1995) for the period 1987-2002.

¹¹ Studies investigating the dividend policy in the context of bondholders and shareholders conflict include Kalay (1982), John and Kalay (1982). Also see Lease, John, Kalay, Loewenstein and Sarig (1999) for a discussion.

shareholders must incur costs to monitor the manager. These monitoring costs will be negatively reflected in the share price. This is known as the agency cost of equity.

Jensen and Meckling (1976) also argue that creditors would not let the debt level of a firm reach or approach a level of 100 percent; despite the fact that according to the capital structure theory, Miller and Modigliani (1958, 1963), high debt levels are optimal in perfect capital markets with tax shields. At such a high level of debt, the manager might have strong incentive to invest in projects with the promise of extremely high payoffs if successful, even if such projects have a very low chance of success. If such investments are successful, the manager and shareholders receive the gains. On the other hand, if the investments fail, the creditors bear the costs. Bondholders can include various covenants in the bond agreement to limit the behavior of managers. The costs associated with covenants are known as monitoring costs. Because the monitoring costs are imposed on the managers through the bond covenants it is the managers' interest to see that the monitoring is made in the least costly way.¹² Therefore, the monitoring cost is part of the agency cost of debt.

Managers simultaneously select three financial policy variables, the capital budgeting projects, the firm's external debt (and consequently the capital structure), and the dividend payout. These decisions are taken in such a way so as to reduce the sum of the agency costs, minimise cost of capital and maximise the firm value. For example, the agency cost of equity is lowered when a manager owns a higher proportion of common shares, thus aligning his/her interests with those of the common shareholders. This is known as the *convergence-of-interest hypothesis* according to which the firm market value increases with management ownership. In other words, the hypothesis suggests a uniformly positive relationship. Debt issuances can also reduce the agency cost of equity, assuming that the managers hold a sizable proportion of shares in the firm. The issuance of debt lessens the need for outside equity, which thus increases the manager's proportion of firm ownership. This lowers the cost of equity, although it increases the agency cost of debt, as debt issuances require monitoring. Consequently, according to Jensen and Meckling (1976), this involves a trade-off.

In a theoretical study Easterbrook (1984) criticises the bird-in-the-hand fallacy, the signalling hypothesis and the clientele hypothesis. He particularly argue that the signalling hypothesis is ambiguous as to what dividends signal, how they do so and why dividends are better than other

¹² For example, it may be cheaper for the managers to provide various reports than to have an independent auditor come in. In addition, eliminating the need for an independent auditor lowers the monitoring cost of bondholders. However, in the publicly traded firm this is not an option.

cheaper methods;¹³ while the clientele hypothesis was criticised because of its failure to explain why the current dividend structure exists. Easterbrook builds on the dividend puzzle theme and offers an agency cost explanation of dividends. He rephrases the dividend puzzle question and instead of asking what is the effect of a change in cash dividends paid, given the firm's capital budgeting and borrowing decision, he considers the effect of a consistent policy of paying dividends. He identifies two major sources of agency costs namely the cost of monitoring managers and the cost of risk aversion on the part of managers;¹⁴ and attempts to answer whether dividends are a method of aligning managers' interests with those of investors.¹⁵ Easterbrook argues that the less discretionary cash the management has, the harder it is for them to invest in Negative Net Present Value projects. One method of accomplishing this is to increase the level of dividend payments. He concludes that dividends may keep firms in the capital market, where monitoring of managers is available at lower cost and may be useful in adjusting the level of risk taken by managers and the different classes of investors.

The desirability of dividends in the principal-agent framework is also examined by Jensen (1986). His starting point¹⁶ is that managers cannot be perfectly monitored, which means that managers can choose actions that best serve their interests rather than those of the shareholders. Jensen argues that cash is the asset that managers can misuse more easily and develops the *Free Cash Flow Theory*, which describes the agency problem of managers and shareholders over the distribution of free cash flows generated by the firm. He notes that managers have incentives to cause their firms to grow beyond the optimal size because firstly, growth increases managers' power by increasing the resources under their control and secondly, large firms generate more pecuniary and non-pecuniary benefits for managers than smaller firms. He argues that activities generating substantial economic rents (returns in excess of the opportunity cost of the resources to the activity) or quasi rents (returns in excess of the short-run opportunity cost of the resources to the activity) generate substantial amounts of free cash flow. Free cash flow is cash flow in excess of that required to fund all projects that have positive net present value when discounted at the relevant cost of capital. Conflicts of interest between shareholders and managers over payout policies are especially severe when the organisation generates substantial free cash flow and the problem is how to motivate managers to disgorge cash rather than investing at below the cost of capital or wasting it on organisational inefficiencies. Managers maximising shareholder wealth

¹³ He particularly argued that unless the cost of issuing dividends is uniformly lower for prosperous firms, no signal is possible.

¹⁴ Managers tend to be risk averse as they try to minimise the firm's risk in order to minimise their personal risk exposure. However, shareholders benefit from increasing the risk of existing debt securities and one way of achieving this is to increase the firm's leverage. For full discussion see Lease, John, Kalay, Lowenstein and Sarig (1999)

¹⁵ Easterbrook (1984) recognised that Rozeff (1982) found a "meeting place" of the managers' and shareholders' interests, however, Rozeff failed to provide any mechanism by which dividends and the consequent raising of capital control agency costs.

¹⁶ Similar to Easterbrook (1984)

pay out free cash flow. Shareholders ideally want to leave little discretionary cash in management's hands and would prefer managers to turn to capital markets to fund investments. According to Jensen, debt counters this by taking away free cash flow. He also contends that takeovers and mergers take place when either the acquirer has large quantum of free cash flow or when the acquired has large free cash flow, which has not been paid out to stakeholders. Although Jensen has not dealt with the issue of dividends directly, empirical researchers have often used Jensen's free cash flow theory for motivating tests of the free cash flow hypothesis of dividend policy.

5.2.2 EMPIRICAL EVIDENCE

The above theoretical predictions are tested from different perspectives. In this section I summarise the main results based on different methodologies.

DIVIDEND PAYOUTS AND FREE CASH FLOW

One of the best-known attempts to find an empirical relationship between agency costs and dividend policy is made by Rozeff (1982). He rationalises an optimal dividend payout by appealing two market imperfections, the agency costs of external financing and the transaction costs associated with issuing external finance. Rozeff argues that increased dividends relative to earnings lower agency costs but raise the transaction costs of external financing. The sum of these two opposing costs determines an optimal dividend payout. He uses a sample of 1000 non-financial and unregulated firms from 64 different industries for the period 1974-1980; and develops a model, that regresses the average payout ratio against the percentage of stock owned by insiders, the average growth of revenues, the value line's forecast of growth rate of revenues, the beta coefficient estimated by value line and the natural logarithm of the number of common shareholders. The model is able to explain 48 percent of the cross-sectional variability in dividend payouts across individual firms and its estimated coefficients are all statistically significant. Particularly, he finds that if a firm has a high percentage of insider stock ownership, it will pay a small dividend (a lower optimal dividend payout ratio) to reduce agency costs. He observes a relation between firm's transaction and agency costs. If the firm pays higher amount of dividends, the firm's agency cost is reduced as well as firm's needs to raise external funds for investment, which raises firm's transaction costs. The hypothesis is that as outside equity holders own a larger share of the equity, they will demand a higher dividend as part of the optimum monitoring package. Rozeff (1982) incorporates one variable as the percentage of stock held by insiders. The prediction is that the dividend payout is negatively related to the percentage of stock held by insiders. The fraction of stock held by outsiders may not be the only determinant of dividend demand. If fewer shareholders held this fraction, their ownership will be more concentrated and may more easily influence insider behavior, thereby reducing agency costs and leading to lower

optimal dividend payout. Hence, dispersion of ownership among outsider shareholders may influence the dividend decision, with more dispersion leading to higher dividends. He uses the number of common shareholders to measure ownership dispersion. The prediction is that the dividend payout is positively related to the number of common shareholders in the firm. To correct for scale effects, the variable taken by Rozeff as the natural log of the number of common shareholders. He finds a significant positive function of the firm's number of common shareholders and concludes that higher dividend payments reduce agency conflicts between managers and shareholders.

Rozeff's original findings were later supported by a number of studies. Jahera, Lloyd, Modani (1986), re-estimate Rozeff's model with the addition of size as an explanatory variable, and by substituting insider ownership with ownership control dummies; however this model has lower explanatory power. Dempsey and Laber (1992) estimate Rozeff's model in a different time period when market conditions are different (i.e. lower inflation, stronger economic growth and lower taxes); and find that Rozeff's model is structurally stable over time. Moh'd , Perry, Rimbey (1995), apply a time-series cross-sectional analysis to estimate Rozeff's model and conclude that the model holds not just across firms but also through time as firms adjust their payouts in response to dynamic shifts in the agency and transaction cost structure. Other studies that test Rozeff's model include Hasen, Kumar, Shome (1994) and Rao and White (1994). Holder, Langrehr, Hexter (1998) investigate the relationship between dividend policy decisions and investment decisions of 477 NYSE listed companies and find a strong influence of agency costs on dividend decision of the firm. Saxena (1999) investigates the determinants of dividend policy of 235 unregulated and 98 regulated NYSE firms and find a strong support of Rozeff's (1982) results. Megginson, Nash and Van Randenborgh (1994) employ an international study to investigate the dividend payouts of newly privatised firms and found that companies tend to double the mean dividend payouts after privatisation; this result is consistent with Rozeff (1982) supporting that the creation of agency costs by means of a dispersion of ownership requires the initialisation of, or increase in dividend payout policy.

Collins, Saxena and Wansley (1996) explicitly recognise the potential differences in dividend policy between regulated and unregulated firms and focused on agency-cost and monitoring explanations for the relevance of dividends. Their purpose is to examine the role of insiders in determining dividend policy for unregulated firms, utilities and financial-service firms. Since utilities, and to some extent, financial-service firms, have regulators who serve as low cost informants to market participants, insiders play a reduced role in determining dividend policy compared to unregulated firms. They develop a regression model to address whether the role of regulators and insiders are substitutes or complements for utilities and financial-services. Results

show that fundamental differences exist in the relationship between insider holdings and dividend policy for unregulated firms and utilities. However, results suggest that the regulatory environment enhanced, rather than mitigated, the importance of the insiders' role for utilities. For financial service firms, the results do not support the hypothesis that increased equity risk through fixed rate deposit insurance enhances the role of insiders when determining dividend policy.

Alli, Khan and Ramirez (1993) explain that as the number of shareholders increases, the agency problem becomes more severe and the need of monitoring managerial actions also increases. If dividend can alleviate this problem, a positive relation is expected between the number of common shareholders and dividend payout ratio. However, they also explain that higher insider ownership leads to lower agency problem and lower dividend payout, so a negative relationship is expected between stock held by insiders and dividend payout ratio. They find a significant positive relationship between the number of common shareholders and dividend payout ratio and a significant negative relationship between insider ownership and dividend payout ratio. Jensen, Solberg and Zorn (1992) investigate the simultaneous determination of dividend policy, participation in the firm's capital of internal shareholders and the level of financial leverage and found ways to control agency relations within a corporation. They employ a three stage least squares technique¹⁷ and use data from 1982 to 1987. They obtain empirical evidence that the dividends paid by the company are negatively related to its financial leverage and to the participation of internal shareholders in its capital. In other words, firms with high insider ownership prefer low levels of debt and dividends. Their results are consistent with the explanation of the dividend policy of companies proposed in the hypothesis Jensen's (1986) free cash flow hypothesis. Bathala, Bowlin and Rao (1995) proposed a substitutability hypothesis, which states that debt structure, insider ownership, and dividend policy serve as substitutes in reducing the total agency cost of a firm (however, they do not measure these agency costs). Sorlberg and Zorn (1992) employ a three-stage least square technique, in a study with a sample of 182 firms for the period 1984 to 1986. Differing from Jensen et al (1992) they find that debt ratio, insider ownership and dividend payout are all negatively related to each other which provides support for their substitutability hypothesis.

Christie and Nanda (1994) take a different approach and consider the effects of 1936 Tax Reform, which unexpectedly imposed taxes on undistributed corporate profits, and consequently there was an unexpected decrease in free cash flow available to corporate managers. They attempt to both identify the investors' reaction to the free cash flow decrease and to evaluate the relative importance of agency costs as a partial determinant of dividend policy. Results indicate that

¹⁷ See Zellner and Theil (1992) for a discussion

despite the direct costs of the tax, its announcement produced a positive revaluation of corporate equities and particularly among lower-payout firms. This is interpreted as evidence of a divergence between managerial and shareholder preferences regarding dividend payout policies, consistent with the presence of agency costs. They also observe that despite the incentives created by the tax, the actual growth in dividends after the reform was lower amongst firms judged more likely to be subject to higher agency costs after controlling for liquidity, debt and the growth in earnings. Consequently, results provided strong support for Jensen's (1986) free cash flow hypothesis.

GROWTH OPPORTUNITIES, CHANGES IN DIVIDENDS AND MARKET REACTION TO DIVIDEND ANNOUNCEMENTS

Unfortunately, neither Easterbrook (1984) nor Jensen (1986) model their theoretical conclusions or put forward a plausible, qualitative argument. Lang and Litzenberger (1989) follows Jensen (1986) and argues that the management of firms with substantial free cash flows will have a tendency to overinvest in negative net present value projects and if they are overinvesting then dividend increases would, *ceteris paribus*, reduce the extent of such overinvestment and thus increase the value of the firm. In contrast, a dividend decrease would produce the opposite result. Lang and Litzenberger (1989) prove the appropriateness of the Tobin's Q ratio to separate overinvesting firms from other companies and show that value maximising firms have a Tobin's Q ratio greater than unity¹⁸ while a Tobin's Q ratio of less than unity indicates overinvestment. They examine 429 dividend change announcements from 1979 to 1984. Results show that average returns around sizable dividend change announcements for firms with average Q's <1 is equal to 0.011 which are more than three times as large as that for firms with average Q's >1 (0.003) with the difference (0.008) being statistically significant at the 1 percent level. This evidence is consistent both with the free cash flow/overinvestment hypothesis and the cash flow signaling hypothesis.¹⁹ Secondly, Lang and Litzenberger argue that daily returns are influenced by information other than dividend announcement, and in order to reduce this impact, they examine intra day returns of 76 dividend change announcements (according to data availability). Results show that the average return for firms with average Q<1 is equal to 0.0178 and significantly higher than for firms with average Q>1 (-0.0001). Therefore, they conclude that sizable dividend changes have a significant impact on the share price of the firm with average Q<1 but no impact for firms with average Q>1.

¹⁸ Because the market value reflects the investment (the book value) plus the net present value of the investment

¹⁹ Note that the difference between the cash flow signaling hypothesis and the FCF hypothesis is based on the fact that the former predicts that dividend change provides information about current and/or future cash flows while under the FCF hypothesis, the dividend change provides information about changes in the managers' misuse of cash flows.

Thirdly, Lang and Litzenberger (1989) identify the need to distinguish between dividend increase and decrease announcements of both $Q < 1$ and $Q > 1$ firms in order to distinguish between the free cash flow and cash flow signaling hypothesis. They note that under the cash flow signaling hypothesis, for firms with average $Q > 1$ the predicted impacts on returns of announcements of dividend changes is larger in absolute value for dividend decreases than for dividend increases. On the other hand the free cash flow hypothesis predicts a symmetrical impact. For firms with average $Q < 1$, both hypotheses predict a significant impact on return in both dividend increase and decrease cases. Results for $Q > 1$ firms indicate significant returns for dividend increases (0.003 and p-value 0.016) and insignificant for dividend decreases (-0.003 and p-value 0.371). However, the absolute value of the average returns associated with dividend increase and decrease announcements are similar in magnitude and not significantly different from each other, which provides evidence to reject the cash flow signaling hypothesis. Further support for the free cash flow hypothesis over the cash flow signaling hypothesis is provided by the fact that the average returns for firms with $Q < 1$ are significant for both dividend increases (0.008 and p-value 0.00) and decreases (-0.027 and p-value 0.00) but in either dividend increase or decrease the absolute value of the average return is significantly larger for $Q < 1$ firms than for $Q > 1$ firms. Finally, tests based on revisions in analysts earnings forecasts fail to reject the free cash flow/overinvestment hypothesis in favour of the conditional cash flow signaling hypothesis.

Yoon and Starks (1995) consider 3748 dividend increase and 431 dividend decrease announcements of all NYSE stocks for the period 1969 to 1988; and test whether the information revealed by dividend change announcements is more consistent with the cash flow signaling hypothesis or the Lang and Litzenberger (1986) free cash flow hypothesis. They find that the stock price reaction to large (at least 10 percent) dividend change announcements is generally consistent with the predictions of the cash flow signaling hypothesis. Although they find that for dividend increases, the abnormal return for low Q firms is significantly larger than that of high Q firms this differential reaction does not persist after controlling for dividend change, dividend yield and firm size. Due to the relationship between the three control variables and the investment opportunity set, they take an alternative approach to discriminate between the cash flow signaling and the free cash flow hypothesis as explanations of the wealth effects surrounding the dividend change announcements. They find that dividend increase (decrease) firms experience significant increases (decreases) in capital expenditures over the three years following the dividend change, and also provide significant evidence that announcements of dividend increases and decreases cause analysts to revise their current earnings forecasts in a manner generally consistent with the cash flow signaling hypothesis. In addition they find that analysts tend to lower their long-term earnings growth forecasts following dividend decrease announcements, but not following dividend increase announcements which explains why dividend decreases cause a larger stock

price reaction than do dividend increases. Yoon and Starks conclude that although results indicate that the free cash flow hypothesis does not explain the information effects of dividend change announcements, the hypothesis cannot be completely ruled out as it explains the observed cross-sectional differences in dividend policy. The fact that low Q firms have higher dividend yield and larger dividend change than high Q firms is consistent with the implications of the free cash flow hypothesis.

Denis, Denis and Sarin (1994) integrate the cash flow signaling, overinvestment and clientele hypotheses, which are not mutually exclusive, into a single testing framework in order to address the conflicting evidence regarding the relative importance of each explanation. They use a sample of 6,777 large dividend changes for the period 1962 to 1988 and they simultaneously control for the standardised dividend change, dividend yield and Tobin's Q. Results indicate that announcement period excess returns are positively related to the magnitude of the standardised dividend change and to dividend yield but unrelated to Tobin's Q. This provides support for the cash flow signaling and dividend clientele hypotheses but failed to provide support for the overinvestment hypothesis.²⁰ Denis et al also provide evidence on the cash flow signaling hypothesis by examining revisions in analysts' earnings forecasts and changes in capital expenditures following dividend change announcements and find that analysts significantly revise their earnings forecasts following dividend changes. Consistently with the cash flow signaling hypothesis they observe a negative relation between the magnitude of the dividend change and Tobin's Q with the earnings revisions being larger for $Q < 1$ firms than for $Q > 1$ firms. They also find a positive relation between dividend yield and announcement period excess returns, consistent with the clientele hypothesis advanced by Bajaj and Vijh (1990). Finally, they observe evidence contrary to the predictions of the overinvestment hypothesis; that is $Q < 1$ firms increase (decrease) their capital expenditures following dividend increases (decreases). The results however, cannot completely rule out the overinvestment hypothesis.

Howe, He and Kao (1992) attempt to provide an extension of Lang and Litzenberger (1989) dividend results to a broader set of cash transactions in which the cash distribution is not expected to be repeated. The transactions chosen are tender offer share repurchases and specially designed dividends. They analyse the effect of infrequent or one-time cash distributions to determine whether Jensen's free cash flow hypothesis explains the market's reaction to an expanded set of transactions. Their results indicate that there is no statistically significant difference in two-day abnormal returns between high Q and low Q firms announcing tender offer repurchases or specially designed dividends. Their interest in these results stems from its contrast with the

findings of Lang and Litzenberger (1989), which generally support Jensen's free cash flow theory. Howe et al reject the free cash flow hypothesis in favour of the information-signaling hypothesis and interpret their results as an empirical puzzle. However, Perfect, Peterson and Peterson (1995) criticise Howe et al (1992) on the notion that long-run measures of Tobin's Q provide support for the Lang and Litzenberger (1989) original findings and find no evidence to reject the free cash flow hypothesis.

FURTHER EMPIRICAL EVIDENCE

Akhigbe and Madura (1996) measure the long-term valuation effects following dividend initiations and omissions and find that firms initiating dividends experience favourable long-term share price performance. Conversely, firms omitting dividends experience unfavourable long-term share price performance. The long-term valuation effects resulting from dividend initiations are more favourable for firms that are smaller, that overinvest, and that had relatively poor performance prior to the initiations. The long-term effects resulting from dividend omissions are more unfavourable for large firms and for firms experiencing relatively large dividend omissions. Moreover, dividend initiations can reduce agency costs because they reduce free cash flow available to managers. The potential for reduced agency costs should be greater for those firms that tend to use funds inefficiently. Given that previous performance serves as a proxy for efficiency in allocating funds, the relatively poor performance have more potential to reduce agency costs because they enlarge the free cash flow available to managers. However, the financial condition of firms at the time of a dividend omission may limit the degree to which agency costs can rise. Since many firms only omit dividends after experiencing financial problems, the funds retained rather than distributed as dividends should be closely monitored. Agency costs are more likely to increase following a dividend omission if the firm's previous performance has not triggered closer monitoring of managers. That is, relatively poor performance prior to the dividend omission should automatically enhance monitoring of the firm's managers, while relatively strong performance prior to the dividend omission enlarges free cash flow without necessary triggering closer monitoring of the firm's managers.

Kallapur (1994) test Jensen's free cash flow theory that managers overinvest related earnings by undertaking negative net present value projects. Particularly, he examines whether the earnings response coefficients depend positively on dividend payout ratios and developed this assertion from the Fama and Miller (1972) model, which expresses stock price as a function of accounting earnings, the payout ratio and the expected rate of return. The model is based on the free cash flow theory prediction that managers may overinvest retained earnings by undertaking negative

²⁰ Furthermore, the results of a more refined test of the overinvestment hypothesis using the interaction of Tobin's Q

net present value projects, therefore the rate of return on reinvested earnings (R_{re}) would be lower than the market's required rate of return (R_{rm}). Kallapur provides evidence to support that the capitalisation rate of a pound of earnings, which is equivalent to the earnings response coefficient, is independent of the payout ratio if $R_{rm}=R_{re}$ and depends positively on the payout ratio if $R_{rm}<R_{re}$, which thing is consistent with the free cash flow hypothesis.

Grullon, Michaely and Swaminathan (2002) also find evidence to support the free cash flow hypothesis as they observe a declining return on assets, cash levels and capital expenditures in the years after large dividend increases, and suggested that firms that anticipate a declining investment opportunity set are the ones that are likely to increase dividends. Moreover, Lie (2000) investigates the relationship between excess funds and firms' payout policies and finds that dividend increasing or (repurchase) firms have cash in excess of peer firms in their industry. He also documents that the market reaction to the announcement of special dividends is positively related to the firm's investment opportunity set, measured by Tobin's Q.

Lasfer (1997) investigates the factors behind the decision to offer scrip dividends in the UK. Scrip dividends are an option offered to shareholders allowing them to choose between cash dividends or the equivalent amount in the form of shares in the company and this scrip option in the UK is tax advantaged over cash dividends. Lasfer finds however, that there is no different tax exposure between scrip and non-scrip offering companies. He also tests the agency cost hypothesis that the scrip option can worsen the free cash flow problem because it enables companies to retain cash and by-pass primary capital market monitoring, overcoming the inflexibility in dividend policy. Results found to be consistent with this hypothesis as he documents that larger firms with low growth opportunities are more likely to issue scrip dividends.

On the other hand, Douglas (1990) contributes to the free cash flow theory and dividend controversy by providing a new explanation for the dividend puzzle arguing that neither debt nor retained earnings can substitute for dividends. He considers two types of asymmetric information problems inherent in the relationship between shareholders (as principles) and managers (as shareholders' agents), and therefore the payment scheme between them would be designed to mitigate these problems. The board of directors would design managerial compensation schedules, which would be dependent upon a committed payment out of the firm. He argues that greater flexibility allowed by a compensation scheme based on dividends instead of debts would lead to a preference for dividends in alleviating agency problems. Douglas concludes that

with a measure of undistributed cash flow also failed to support the overinvestment hypothesis.

dividends have an advantage over debt in alleviating the free cash flow type problems and that the legal force associated with debt may not be required.

Smith and Watts (1992) investigate the reasons behind the cross-sectional variations of corporate financing, dividend and compensation policy choices at the industry level and find that the contracting theories are more important than other theories in explaining the observed cross-sectional variation. They use the availability of growth options and firm size as proxies for the firm's investment opportunities and observe that they are related to the firm's financing, dividend and executive compensation policies. A negative relationship is observed both between dividend yield and the use of bonus and stock option plans; and between growth options and dividend yields. Their results provide support for the substitute hypothesis, that is dividend policy as well as other monitoring or agency costs can be used equivalently as mechanisms for reducing agency costs. Similar results are observed by Gaver and Gaver (1993) who conduct the analysis at the firm rather than the industry level, using alternative proxies for investment opportunities.

Agrawal and Jayarman (1994) take a different approach to examine the hypothesis that dividends reduce the opportunity for managers to use free cash flow in a self-serving manner. Since both interest payments and dividends reduce the pool of excess cash that managers can misuse, they examine the free cash flow motive for dividend payments. They compare, on the one hand the dividend policy of companies in debt and of companies not in debt and; on the other hand, the dividend policy of companies with high degree of participation of shareholders in their capital (where presumably the interests of shareholders and of managers are more in line) and of companies with low participation. They report that the dividend payout ratios of all-equity firms are significantly higher than the dividend payout ratios of leveraged firms. They also report that firms with high managerial share holdings have lower payouts than firms with low share holdings. Overall, results suggest that dividends do serve as a means to reduce the conflict of interest between managers and shareholders regarding the use of free cash flows.

Noronha, Shome and Morgan (1996) argue that if dividend payments play a monitoring role, then dividend and financing decisions should be interrelated in such a way as to cause dividend and capital structure decisions to be made simultaneously. Moreover, they argue that the validity of the monitoring rationale for dividends is contingent on the non-existence of other mechanisms for controlling agency costs and the growth opportunities of the firm. Eckbo and Verma (1994) find evidence consistent with the dividend monitoring rationale and the existence of an interrelationship between dividend policy and other monitoring mechanisms. Results show that cash dividends tend to decrease when the voting power-managers increase while when owner-managers have absolute control of the firm, cash dividends tend to disappear.

Born and Rimbey (1993) offer some empirical evidence on Easterbrook's (1984) hypothesis. They examine the relationship between the size of the capital market's response to an unanticipated dividend increase and the volume of prior financing announcements by the same firm. Their evidence is somewhat mixed. They find a smaller price reaction, on average, to dividend announcements by firms who have engaged in prior financings than for firms who have not borrowed in the public market or from bank lenders. This result is inconsistent with Easterbrook (1984) hypothesis that the fundamental role of dividends is to stimulate monitoring by requiring more trips to the debt market. Born and Rimbey (1993) do find however, that financing firms enjoy higher return per unit of dividend yield than non-financing firms and that the amount of financing preceding the dividend announcement is positively related to the abnormal return; which provides evidence in support for Easterbrook's (1984) hypothesis.

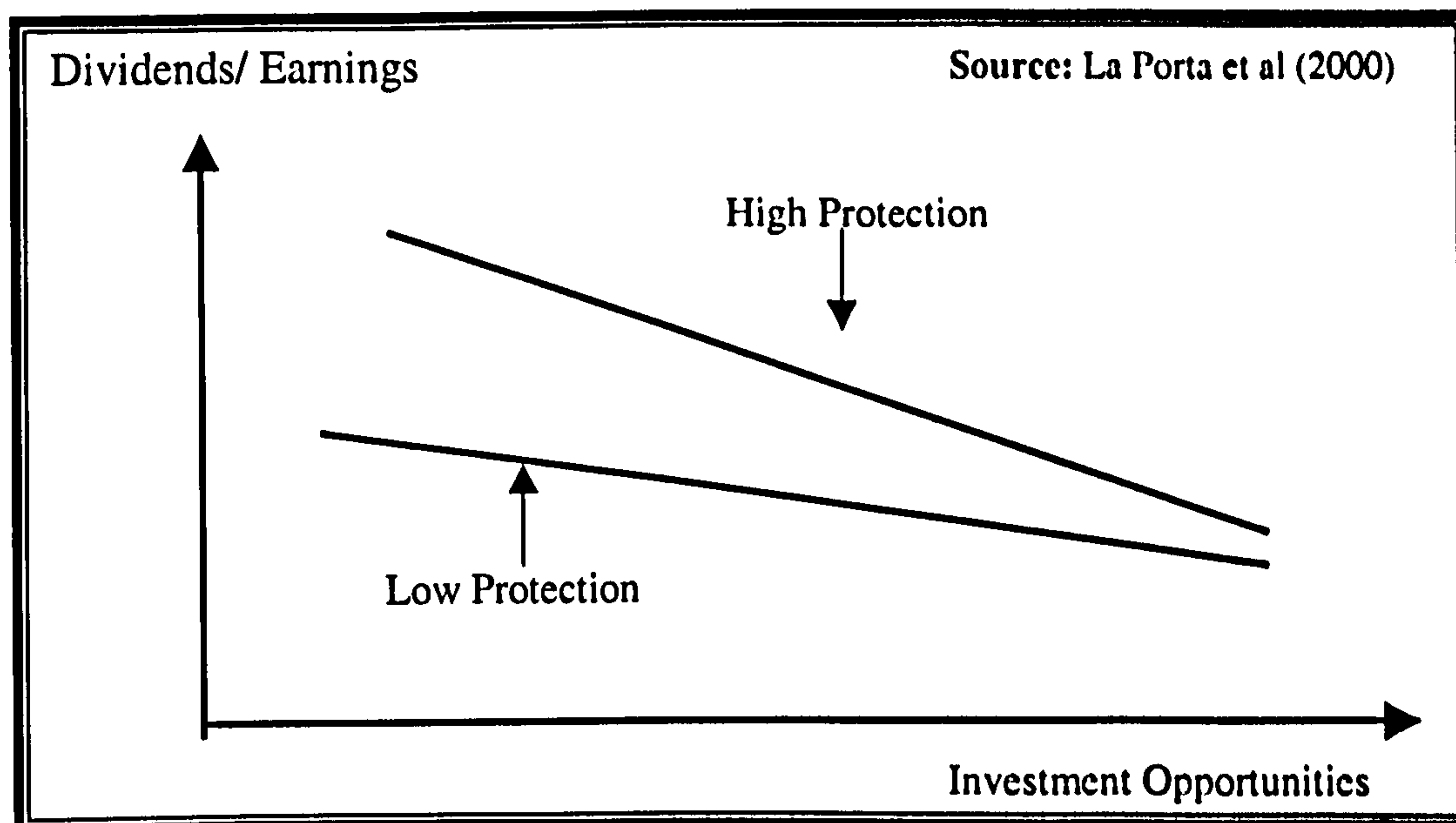
Filbeck and Mullineaux (1999) follow Born and Rimbey (1993) and examine the hypothesis that agency costs are a primary factor motivating dividend payments. They hypothesise that the presence of bank regulators as monitors may reduce agency costs to sufficiently small levels, that third party monitoring by capital market institutions yields minimal benefits. They argue that when some other mechanisms have, by assumption, largely attenuated agency costs, then the capital market mechanism has less of a role to play, and in the extreme, no role at all. In particular they examine the Easterbrook (1984) hypothesis related to dividend payments and agency costs in a sample of bank holding companies. In contrast to Born and Rimbey (1993) they argue that the abnormal returns associated with dividend announcements by bank holding companies will not be related to external financing activity because the monitoring efforts of capital market institutions are largely redundant in the presence of bank regulators.

PAYOUT POLICY AND INVESTOR PROTECTION

Recently, La Porta, Silanes, Shleifer and Vishny (2000) attempt to identify some of the basic elements of the agency approach to dividends and examine the relationship between investors' protection and dividend policy across 33 countries based on the notion that the ability to monitor and the rights of outside shareholders differ across countries; therefore the potential severity of conflicts of interests would differ too. They test two alternative agency models of dividends: Firstly, the "*outcome model*" according to which dividends are paid because minority shareholders pressure corporate insiders to disgorge cash, therefore stronger minority shareholder rights would be associated with higher dividend payouts. Shareholders who feel protected would accept low dividend payouts, and high reinvestment rates, from a company with good opportunities because they know that when this company's investments pay off, they could extract dividends. In contrast, a mature company with poor investment opportunities would not be

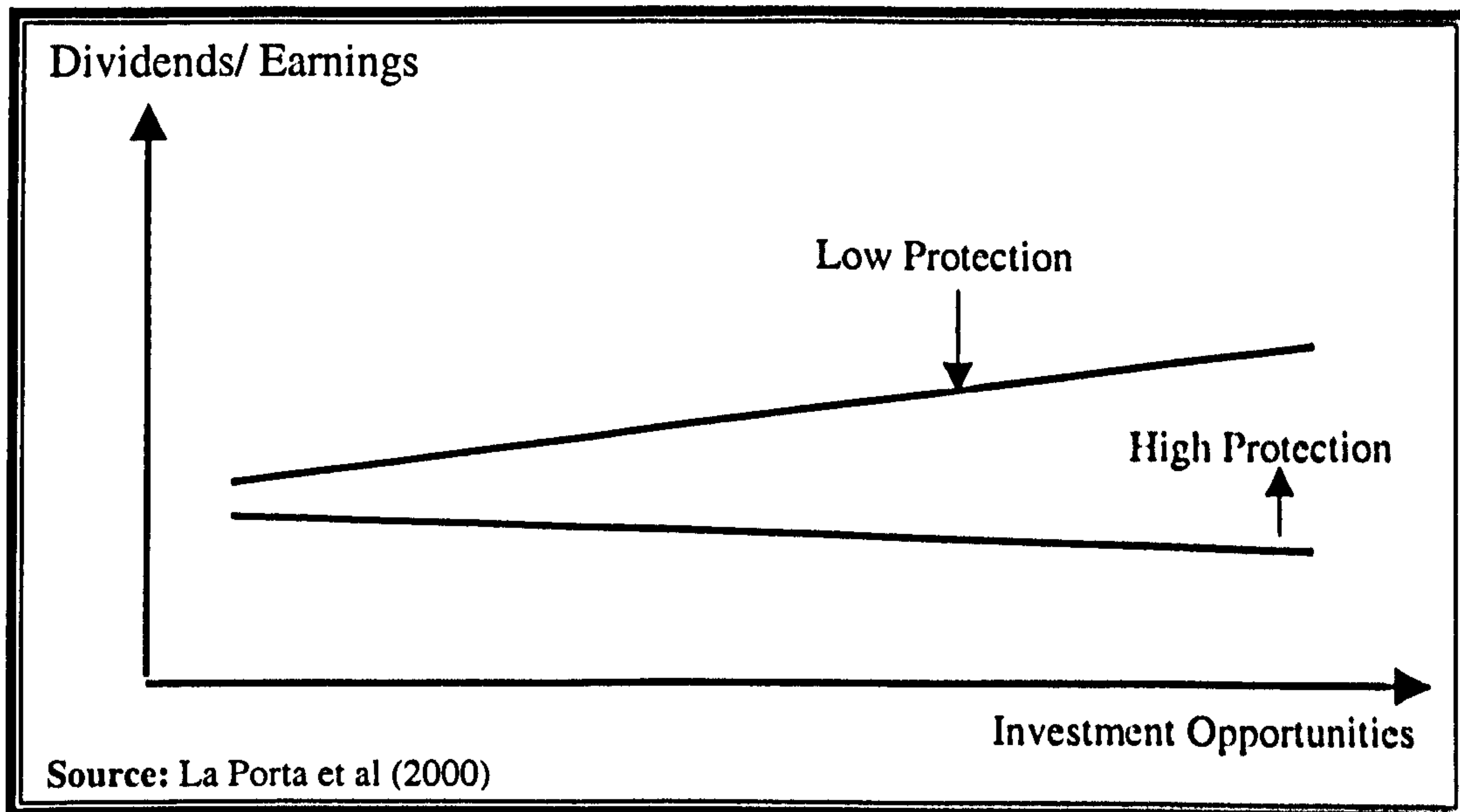
allowed to invest unprofitably. As a consequence, according to La Porta, Silanes, Shleifer and Vishny (2000), in countries where shareholders are highly protected, high growth companies should have significantly lower dividend payouts than low growth companies; in contrast, in countries where shareholder protection is poor shareholders would demand higher dividend payouts. This relationship is illustrated in the Figure 5.1.

FIGURE 5.1: THE OUTCOME MODEL OF DIVIDENDS



Secondly, an opposite model was tested, the “*substitute model*” where insiders interested in issuing equity in the future pay dividends to establish a reputation for decent treatment of minority shareholders. La Porta, Silanes, Shleifer and Vishny argue that a reputation for good treatment of shareholders is worth more in countries with weak legal protection of minority shareholders, who have little else to rely on; therefore, all else equal, in these countries dividend payouts should be higher than in countries with good legal protection. Moreover, the need for establishing good reputation is greater in firms with better growth prospects because of the necessity of external funding; however the relationship between growth prospects and dividend policy could be ambiguous as high growth prospect firms also have a better current uses of funds. La Porta et al illustrate the implications of the substitute model as shown in Figure 5.2.

FIGURE 5.2: THE SUBSTITUTE MODEL OF DIVIDENDS



Their data consists of 1,135 firms from civil law countries and 2,968 firms from common law countries where according to La Porta, Silanes, Shleifer and Vishny (1997) investors are better protected.²¹ La Porta et al (2000) report that for all measures (dividend to earnings, dividend to cash flow and dividend to sales) common law countries have higher dividend payouts than civil law countries, while firms in civil law countries have been perceived to grow one percent faster than firms in common law countries. Particularly, evidence supports the outcome model of dividends. Moreover, in common law countries, fast growth firms pay lower dividends than slow growth firms, consistent with the idea that legally protected shareholders are willing to wait for their dividends when investment opportunities are good. On the other hand, in civil law countries, poorly protected shareholders seem to take whatever dividends they can get, regardless of investment opportunities. This apparent misallocation of investment was interpreted as part of the agency cost of poor legal protection. La Porta et al (2000) find no conclusive evidence on the effect of taxes on dividend policies and limited relevance of dividend signaling. Nevertheless, La Porta et al (2000) conclude that firms appear to pay out cash to investors because the opportunities to steal or misinvest it are in part limited by law, and because minority shareholders have enough power to extract it. In this respect, the quality of legal protection of investors is found to be important for dividend policies as it is for other key corporate decisions.

La Porta et al (2000) results provide support for the agency model of dividends, according to which better shareholder protection leads to higher dividend payouts. Firms are observed to pay out cash to investors because the opportunities to steal or invest in negative net present value

²¹ The z-statistic on the difference in the median civil law and common law shareholder protection is 3.97

projects are in part limited by law, and because minority shareholders have enough power to extract it. However, La Porta et al have not considered the impact of dividend change announcements on share prices under different legal protection systems or under different corporate governance systems. Therefore, I further examine the agency conflict explanation of dividends in the UK, Germany, France and Italy to particularly examine whether differences in corporate governance systems result in higher/lower abnormal returns around the dividend change announcements as well as to test in whether the share price reaction is consistent with the predictions of the free cash flow hypothesis of Lang and Litzenberger (1989) or the free cash flow signaling hypothesis.

5.3 CORPORATE GOVERNANCE SYSTEM CHARACTERISTICS IN EUROPEAN COUNTRIES EXPECTED TO AFFECT THE LEVEL OF AGENCY CONFLICT AND HYPOTHESES TO BE TESTED

The review of the literature indicates that there is support for the existence of links between variables related to corporate governance structures and dividend policy, which are able to explain variations in dividend policies across countries and across firms. These include the level of legal protection of shareholders, the ownership concentration, insider ownership and the amount of leverage. All these appear to affect the level of conflicts between managers and shareholders. The existence of wide cross-sectional variations in dividend payouts across firms, industries and countries is in accordance with optimal dividend policies derived by Rozeff (1982) trade-off model, and with varying degrees of agency problems across countries due to both different governance and legal structures.

Corporate governance is the system by which business corporations are directed and controlled; and provides the structure through which the company objectives are set, and the means of attaining those objectives and monitoring performance. Pulling together various dimensions of financial markets and corporate governance, some researchers²² attempt to develop broad classifications of systems. Generally studies have identified two major corporate governance systems- market-oriented and bank-oriented countries. The UK is classified as a market-oriented country while Germany, France and Italy have been more or less classified as bank-based systems.²³

Franks and Mayer (1994) distinguished between outsider and insider systems.²⁴ The distinguishing features of the UK outsider model are dispersed equity ownership with large institutional holdings, the recognised primacy of shareholder interests in the company law, a

²² Mayers (1994, 1997), Zysman (1983) and Dosi (1990), Berglof (1990, Berglof and Sjogren (1995), Rajan and Zingales (1990).

²³ See Demirguc-Kunt and Levine (1999), Halpern (1999)

strong emphasis on the protection of minority investors in securities law and regulation, relatively strong requirements for disclosure. The outsider system can be also characterised as a market-based system, inasmuch as it relies heavily on the capital market as a means of influencing behavior. The system is also characterised by a legal and regulatory approach that favours use of the capital markets and is designed to build confidence among non-controlling investors. In countries with outsider systems, the legal framework supports clearly the right of shareholders to control the company and makes the board and management explicitly accountable to the shareholders.²⁵

By contrast, the German, French and Italian corporate governance systems tend to be characterised as bank-based systems. As compared to the UK ownership is less dispersed,²⁶ with extensive individual or family, bank and inter-corporate holdings²⁷. In such a case, there is a less active equities market and less of a market in corporate control. Governance and monitoring of the firm's performance take on more of an insider form, with representatives of families and/or banks and/or other firms sitting on the company's board. Ownership and control are relatively held by identifiable and cohesive groups of "insiders" who have longer-term stable relationships with the company. Insider groups usually are relatively small, their members are known to each other and they have some connection to the company other than their financial investment, such as banks or suppliers. Groups of insiders typically include some combination of family interests, allied industrial concerns, banks and holding companies. Frequently, the insiders can communicate among themselves with relative ease to act in concert to monitor corporate management, which acts under close control. Furthermore, the legal and regulatory system is more tolerant of groups of insiders who act together to control management while excluding minority investors. Hence, the agency problem, which characterises the outsider system, is of much less importance.²⁸ An important ingredient in all corporate governance system is monitoring of managerial activity by various elements of the system. Monitoring can be undertaken by the Board of Directors, individual shareholders, concentrated holdings of shares such as mutual funds and pension funds, bondholders, banks or workers.

Alli, Khan and Ramirez (1993) explain that as the number of shareholders increases, the agency problem becomes more severe. Differences in ownership concentration are shown in **Table 1.2 Panel D**. Lower ownership concentration in the UK than in Germany, France and Italy is

²⁴ Also see OECD (1996), Nestor and Thompson (1999)

²⁵ See La Porta et al (1997)

²⁶ See Chapter 1, Table 1.2 Panel D, LaPorta, Silanes and Shleifer (1999), Franks and Mayer (1994), Dherment-Ferere, Köke and Renneboog (2001)

²⁷ Clarke and Bostock (1997) report that equity ownership by non-financial firms is much lower in the UK (3.1 percent) as compared with Germany (39 percent), France (55 percent) and Italy (23 percent).

²⁸ See Neston and Thompson (1999), Halpern (1999)

expected to result in higher agency conflicts as according to Rozeff (1982) higher ownership dispersion leads might lead to higher dividends, which reduce agency conflicts. The UK system is characterised by high dispersion of voting and cash flow rights²⁹ and called the “Weak owners-Strong Managers.”³⁰ A single small shareholder only benefits from performance improvements in direct proportion to the cash flow rights, he or she may not find it profitable to monitor management while a large shareholder will necessarily feel differently and will have greater incentives to monitor management.

Moreover, it has been suggested that banks have a role as producers of information (Ramakrishna and Thakor, 1982 and Allen, 1990) or as delegated monitors (Diamond, 1994). Banks are supposed to perform an important function in screening and monitoring firms. Low, Gorfeld, Hearth and Rimbeay (2001) established a link between bank monitoring and corporate dividend policy, that is, they concluded that investors interpret the dividend decision as a function of bank monitoring³¹ and the dividend signals taken together. Studies of various managerial actions have concluded that the existence and level of bank debt influences market perceptions; and generally, it has been shown that the market uses the banking relationship as a mechanism to certify the firm’s actions.³² In effect, market participants may be reassured by the bank’s presence as a third-party monitor. The role of banks as management monitors differs across Europe as lower levels of debt have been observed in the UK (21.85 percent) than in Germany (52.24 percent), France (31.15 percent) and Italy (71.18 percent).³³ Moreover, the limited monitoring role of banks in the UK is reinforced by low bank equity holdings³⁴ (1.7 percent) and by the fact that banks limit their involvement in the companies to which they provide finance.³⁵ In contrast, in Germany banks hold a significant share (13.6 percent) of the equity market. This has been argued to permit banks to constrain the managements of large German companies to act more closely in accordance with shareholders’ wishes and hence reduce the agency costs involved in the owner-management relationship.³⁶ This has been reinforced by the ownership of shares by banks and by representation on companies’ supervisory boards.³⁷ Moreover, banks often act as proxies for shareholders (votes by mail is prohibited by law) and indeed are required by statute to provide

²⁹ See La Porta, Silanes, Shleifer, and Vishny (2001); Crama, Leruth, Renneboog and Urbain (1998) find striking differences in ownership concentration between insider and outsider systems.

³⁰ See Roe (1994)

³¹ Also see Filbeck and Mullineaux (1993, 1999)

³² For example, Hirschey, Slovin and Zaima (1990) find significant positive returns around corporate selloff announcements by companies with high bank debt and little market reaction to announcements by companies with little or no bank debt.

³³ Sources of Funds, EVCA Yearbook (2000). See Table 1.2 Panel B.

³⁴ See Carlin and Mayer (1998) for Bank Equity Holdings Data

³⁵ International Capital Markets Group (1995)

³⁶ See Edwards and Fischer (1994), Baums (2002),

³⁷ While individual banks often have one member on a board, a board may have representatives from several banks. See International Capital Markets Group (1995)

such a service.³⁸ In France and Italy, companies have tended to be family oriented, growing through bank debt rather than equity finance.³⁹ Especially in Italy since 1936 until 1993, the possibility for banks with demand or short-term deposits of acquiring significant shareholdings in non-financial companies was precluded by the Bank of Italy's policy in favour of separating banks from manufacturing firms.⁴⁰ Such policy did not cover banks with no short term liabilities such as the Mediobanca which according to Bianchi et al (1998) had a central role in the Italian Corporate Governance both by providing debt financing and monitoring the performance of companies. After 1993, banks in Italy are allowed to invest up to 50 percent of their capital in non-financial firms.

The agency theory's focus on board structure is on the extent to which top management's (the agents) versus shareholders' (the legitimate owners) interests are represented in corporate decision making. The key mechanism through which this is mediated is the degree of board independence from management's interests and, hence, the impartiality of the board in monitoring and controlling management.⁴¹ The monitoring board of a public company serves as a disciplinary mechanism by advising and monitoring the top management team and by replacing it when necessary. According to Fama and Jensen (1983) such boards have the power to hire, fire and compensate the top-level decision managers and to ratify and monitor important decisions. Companies of which non-executive directors dominate the board should spend, on average, more dividends than companies with insider-dominated boards. The more insiders have a board seat, the more they can put pressure on the other board members to keep cash dividends low. Dehaene and Ooghe (1998) examined cross-sectional differences in the composition of the board of directors and the impact of this composition on the corporate performance and dividend policy. They found no evidence to support that both the board size and relative importance of outside directors affects corporate performance; however, the way the board of directors is composed was found to affect dividend policy. The position and composition of the board differs considerably, however, from country to country.

The board of directors in the UK comprises two distinct types of directors, inside executive managers and outside experts. Outside board members often are respected leaders from other corporations or institutions and have an incentive to build up reputation as experts in decision control. The UK type of board is of the so-called one-tier type, since managing executives are also

³⁸ Shareholders usually grant banks a proxy voting authority for 15 months (but it can be revoked at any time by the shareholder). The bank must inform its customer of the meeting, give written explanations of the proposed resolutions, and make written voting proposals explaining how the bank would exercise its vote. If the shareholder gives no direction on which way to vote, the bank must vote as already intimidated to the shareholder.

³⁹ See International Markets Group (1995); Corporate Governance Market Principles: France, Corporate Library

⁴⁰ See Bianchi, Bianco and Enriques (1997)

⁴¹ See Cook and Deakin (1999)

represented on the board. All directors, executives as well as non-executives, are appointed by the controlling shareholders and must answer to the annual meeting. The rights and obligations of the board are indivisible and unalienable. The Companies Act does not require directors to be managers, but directors are required to see that the business is properly managed. The Cadbury Commission (1992) recommended that company boards of directors needed to include more external members, who would act as monitors rather than management advocates. The effect of the Cadbury Code is to make non-executive directors mandatory, which supports the line taken by the Institutional Shareholders' Committee in 1991, in the Responsibilities of Institutional Shareholders in the UK. In contrast to the UK system where the board *should* operate effectively as an entity,⁴² the legal requirement in Germany to a two-tier board system,⁴³ comprising a supervisory board (Aufsichtsrat) and a management board (Vorstand), provides a complete separation between management and the supervision of management. The management board, which is usually smaller than the supervisory board is responsible for the management of the company and its operations and is not bound to accept instructions from the supervisory board or the general meeting. It develops the company's strategy and must report at least quarterly to the supervisory board on planned activities and on the profitability and progress of the company. The strategy presented by the management board may be subject to challenge by the supervisory board, but the latter does not generally have the power to change the strategy. The supervisory board has a legal duty to appoint, to remunerate and to monitor the competence of the management board, to approve the annual accounts and to propose to the shareholders' meeting the amount of the dividend and the appointment of the auditors. In the traditional French System for Sociétés Anonymes (SA - the equivalent of public companies in the UK) the board consists of two main components. The Président Directeur Général (PDG) is elected by the board, which in turn is appointed by the shareholders. The reality may be the reverse of this; that is the PDG picks the board. His authority is wider and greater than that of the CEO in the UK. He may if he chooses create a management board as a type of executive committee. The second component, which may be well elected by a PDG, is the Conseil d'Administration (the Board) but usually is elected by the shareholders in the annual general meeting. How loud the shareholders' voice is depends on their relative strength. If they are powerful, their support will be essential so they will be consulted beforehand. A second system was introduced in 1966, which provided the French companies with an alternative structure of the board. That is a supervisory system, where management is in the hands of a directorate which has two to five members supervised by the supervisory board. One member of the directorate is designed as Président de directoire and is appointed by other members but the approval of the shareholders at the general meeting is required. In Italy a S.p.A. (public company) is managed by a board of directors (the size specified

⁴² Cadbury Report (1995), International Capital Markets Group (1995)

by the shareholders) or by a sole director, and the powers of both are determined by the company's articles. The management of the company may be delegated by the board or by the sole director to general managers, managers, and other executives. In Italy the board of directors play a key determinant role in the internal mechanisms of corporate governance of the company, as the external mechanisms are weak. A number of factors however, indicate that the independence of the board of directors in Italy is limited. First although the board directors have fiduciary duties with respect to all shareholders, they mainly represent the interests of the controlling shareholders, minority shareholders being typically not well represented. A survey conducted in 1994 (Crisci and Tarizzo, 1995)⁴⁴ on the Boards of Directors of 500 Italian companies provides a clear picture. To the question "Who do you represent, in the board?" 83 percent of the directors answered "the controlling shareholders" and only 12 percent "the minority shareholders". Moreover, in 1995, in all the top twenty Italian firms by stock market capitalisation a member of the controlling family is on the board as Chairman, CEO of the firm controlled by that family (La Porta et al, 1999).

In the presence, or absence, of growth opportunities, the ownership and control structure play an important role in reducing agency problems within firms. Although the mechanisms of corporate governance can reduce the interest conflict in both situations, its role could be more important when there are no growth opportunities since undertaking unprofitable projects or perquisite consumption might exacerbate agency problems. Firm value, financial structure, corporate governance, growth opportunities and dividend policy then become more closely related.

Differences in the European corporate governance systems are expected to affect the level of conflicts between shareholders and management of the companies. Moreover, agency conflicts are expected to be more severe in countries where there are lower growth opportunities because low growth opportunities would result to higher free cash flow in the hands of the management and would increase the possibility of investing in negative net present value projects. The purpose is to provide both intra and inter European country comparisons in order to test the free cash flow hypothesis as described by Jensen (1986) in countries outside the US where levels of agency conflicts are assumed to differ. Firstly, at a country level I test:

HYPOTHESIS: Abnormal returns on the dividend announcement day in market-based countries such as the UK are expected to be higher than in bank-based countries.

In the literature, it has been argued that low levels of growth opportunities result in higher agency conflicts as the probability of investing in negative net present value projects is increasing. I use

⁴³ See Charkham (1994); Kaplan (1994)

the market to book ratio as a proxy for growth opportunities in order to test the free cash flow hypothesis in the UK, Germany, France and Italy.⁴⁵ In each country I will distinguish between overinvesting firms (Low Market-to-Book) and value maximising firms (High Market-to-Book) and test whether:

HYPOTHESIS: The market reaction to dividend changes of overinvestment firms (low MTB) in market-based countries, such as the UK, will be higher than that in bank-based countries.

HYPOTHESIS: The market reaction to dividend changes of value maximizing firms (high MTB) in market-based countries, such as the UK, will be higher than in bank-based countries.

According to the predictions of the free cash flow hypothesis, in the first case, where managers are overinvesting, dividend increases will, all else being equal, reduce overinvestment, and increase the market value of the firm. A decrease in the dividend will, however, have the opposite result, as more cash would be available in the discretion of the management. Therefore, on the dividend announcement day the share price reaction is expected to be positively related to dividend changes (i.e. dividend increases would result in positive abnormal returns while dividend decreases would result in negative abnormal returns). This share price behavior is however consistent with both the free cash flow hypothesis and the signaling hypothesis. The signaling hypothesis would be rejected over the free cash flow hypothesis if both of the following hypotheses hold:

HYPOTHESIS: In market-based countries the market reaction to dividend increases of overinvesting firms (high MTB), is higher than to dividend decreases.

HYPOTHESIS: In market-based and bank-based countries the market reaction to dividend cuts/omissions of value maximising firms (high MTB) is not significant.

⁴⁴ Discussed in Brunello, Graziano, Parigi (1999)

⁴⁵ Perfect and Wiles (1994) show that Tobin's Q and the market-to-book ratio are highly correlated (the correlation coefficient is about 0.96).

5.4 DATA AND METHODOLOGY

For the purpose of testing my hypothesis in this part of my thesis I use the abnormal returns on the dividend announcement dates in the UK, Germany, France and Italy as calculated in Chapter 4. Abnormal returns are calculated using the event study methodology (Brown and Warner, 1985) for the period 1987 to 2002. A full description of the data and methodology is provided in Chapter 4 Section 4.4. Further, data for the purpose of calculating the market-to-book values was obtained from DataStream. Data includes the year-end market value of equity and the book value of assets.

In this chapter I follow Lang and Litzenberger (1989), who use estimates of Tobin's Q ratio to distinguish between overinvesting and value maximising firms, in an attempt to distinguish between the predictions of the information signalling and the free cash flow hypothesis. Lang and Litzenberger (1989) follow Miller and Modigliani (1966) limited growth model, to describe the overinvestment hypothesis and the rationale for using Tobin's Q ratio as an indicator of the expected profitability of future investments. They prove that an average Q ratio greater than unity ($Q > 1$) is a necessary condition for a firm to be at the value-maximising level of investment while an average Q ratio less than unity ($Q < 1$) is the sufficient condition for a firm to be overinvesting. However, average Q estimates are subject to criticism as they might cause potential problems.⁴⁶ Because of this reason and because of data unavailability to calculate the Tobin's Q ratio, I use the market-to-book ratio as a proxy for the company investment opportunities. Perfect and Wiles (1994) show that Tobin's Q and the market-to-book ratio are highly correlated (the correlation coefficient is about 0.96). Adam and Goyal (2003) evaluate the performance of a number of proxy variables for a firm's investment opportunity set and they do not distinguish between the Tobin's Q and the market-to-book ratio. Also Beiner (2001) and Barclay, Smith and Watts (1995) use the market-to-book ratio as a proxy for investment opportunities.

The market-to-book ratio is defined as the firm's year-end market value divided by the book value of the firm. The year-end market value is equal to the share price multiplied by the year-end number of shares. In order to distinguish between value maximising firms and overinvesting firms I calculate the market-to-book median in each country. Companies with market-to-book value greater than the median are classified as value maximising firms and companies with market-to-book value less than the median are classified as overinvesting firms. Marginal value maximising companies (i.e. companies with the market-to-book ratio equal to the median) are included into the value maximising group.

⁴⁶ See Lang and Litzenberger (1989), page 185

To test the hypothesised difference in abnormal returns around the dividend announcement changes in each of the four countries, companies are firstly grouped in two categories according to the market-to-book ratio. The agency costs hypothesis predicts that the abnormal returns of companies with market-to-book less than the median should be statistically higher than for companies with market-to-book greater than the median. Comparisons between the groups are conducted using the *t-test statistics*.

Further, I analyse the share price behaviour around the dividend announcement days according to the direction of the dividend change announced. I look at dividend increases and decreases which are defined as positive or negative changes in the annual dividends. According to Dewenter and Warther (1998), the strongest, most consistent evidence that dividends contain information comes from event studies of dividend initiation and omission announcements. Michaely, Thaler and Womack (1995) describe dividend initiations and omissions as extremely visible, qualitative changes in corporate policy. Therefore, I extend Lang and Litzenberger's (1989) study by further analysing the share price behaviour of value maximising and overinvesting firms on the announcement of dividend omissions and initiations. These subsamples are constructed by identifying those firms whose annual dividends move from a positive number to zero (omissions) and from zero to a positive number (initiations). Due to the restricted time frame of the data, as well as to the limited number of dividend omitting and initiating events, I follow Dewenter and Warther (1998) who do not require that a dividend change occur after a set of years of stable dividend policy.⁴⁷ The fifth, subsample includes companies that announce no dividend changes.

Therefore, in each country under consideration firms are grouped into two categories according to their market-to-book ratios, and then I further distinguish firms according to the type of dividend announcement change. Table 5.1 presents the groups of my sample.

⁴⁷ For example, Healy and Palepu (1988) require that a firm pay dividends for ten years to be included in their omission sample.

TABLE 5.1 DIVIDEND CHANGE ANNOUNCEMENTS AS COMPARED TO THE GROWTH OPPORTUNITIES

Table shows the company groups considered in the study. The sample is firstly divided according to the firms' growth opportunities. Value maximising firms' market-to-book ratio is higher than the median value, while for overinvesting firms the market-to-book ratio is lower than the median value. Secondly, firms in each market-to-book group are grouped according to the direction of the dividend change announced. Notation: INC =Increase, NC =No Change, DEC=Decrease, INI =Initiation, OMI =Omission, Div. =Dividend, MTB_H =High market-to-book and MTB_L = Low market-to-book.

		INCREASE	DECREASE	NO CHANGE	INITIATIONS	OMISSIONS
GROWTH OPPORTUNITIES	VALUE MAXIMISING FIRMS-MTB _H	MTB _H -INC.DIV.	MTB _H -DEC.DIV	MTB _H -NC.DIV.	MTB _H -INI.DIV.	MTB _H -OMI.DIV.
	OVERINVESTING FIRMS- MTB _L	MTB _L -INC.DIV.	MTB _L -DEC.DIV.	MTB _L -NC.DIV.	MTB _L -INI.DIV.	MTB _L -OMI.DIV.

Generally, the announcement of dividend increases/initiations should be met with positive abnormal returns, and negative abnormal returns should follow announcement of dividend decreases/omissions. However, this prediction is consistent with both the signalling and the overinvesting hypothesis. Lang and Litzenberger (1989) suggest that dividend change announcements by overinvesting firms convey information regarding the firm's level of investment. A dividend increase suggests to the market that the firm will invest less in the future than what it was expected to do. For overinvesting firms, this is good news because the firm was expected to invest wastefully, i.e. in negative net present value projects. Similarly, a dividend decrease by an overinvesting firm increases the market's assessment of the amount that will be wastefully invested, leading to a decrease in firm value. Under the overinvestment hypothesis, only overinvesting firms are expected to experience abnormal share price changes following dividend change announcements. Denis, Denis and Sarin (1994) note that due to Tobin's Q measures a firm's marginal Q with error, may still observe abnormal share price changes for value maximising firms. Nevertheless, if measures of Tobin's Q are directly related to the true marginal Q, the overinvestment hypothesis predicts that the absolute abnormal share price changes associated with dividend change announcements will be greater, on average, for overinvesting firms than for value maximising firms. In the next section I present the results.

5.5 RESULTS:

5.5.1 THE IMPACT OF DIVIDEND CHANGES ANNOUNCED ON THE SHARE PRICE REACTION

Table 5.2 presents the results. In Panel A, I show the number of dividend increases, decreases, no changes, initiations and omissions announced by value maximising and overinvesting firms. In all the countries under consideration both value maximising and overinvesting firms announce more increases than decreases. In the bank-based countries (Germany, France and Italy) the majority of the announcements contain no dividend changes, while in market-based countries (UK) the majority of the announcements contain dividend increases.

In Panel B, I present the day 0 abnormal returns in the UK (1), Germany (2), France (3), and Italy (4) on the dividend announcement day; while in Panel C I show the results for a three day window (Day -1 to +1) around the announcement day. For each country the first two rows show the abnormal returns according to the direction of dividend change announced, for value maximising (MTB-HIGH) and overinvestment (MTB-LOW) firms respectively. In the third row I show returns differences between value maximising and overinvesting firms. In the final two rows I provide comparisons for value maximising and overinvesting firms, between the abnormal returns according to the dividend changes (for example, I consider whether dividend increases result in significantly higher returns than dividend decreases, etc).

Panel B shows the results on the dividend announcement day. In the UK both value maximising and overinvesting firms earn significantly positive (negative) abnormal returns on the announcement of dividend increases/initiations (decreases/omissions). On the announcement of dividend no changes high market-to-book companies earn insignificant returns equal to 0.05 percent ($t = 0.37$) while low market-to-book companies earn positive abnormal returns of 0.24 percent, significant at the 10% level ($t = 1.82$). The comparison of the abnormal returns between value maximising and overinvesting firms is shown in the third row. Results show that there is no significant difference between the returns for low-and high-market-to book firms. However, on the announcement of dividend initiations low market-to-book firms appear to earn 1.95 percent ($t = 2.70$) higher returns than high market-to-book firms. Finally I show t-statistics of the differences in absolute values for the dividend change groups. Value maximising firms appear to earn statistically higher returns on the announcement of dividend increases than on the announcement of any other dividend changes. Similarly, overinvesting firms, earn higher returns ($t = 3.66$) on the announcement of dividend increases than decreases. This evidence contradicts the predictions of the free cash flow overinvestment hypothesis. Therefore, in the UK the market does not appear to distinguish between companies that pay dividends, to mitigate the free cash flow problems and growth companies that need cash for reinvestment.

In Germany, value maximising firms do not experience any significant abnormal returns on the announcement day of dividend increases or dividend decreases. Negative abnormal returns equal to -2.33 percent ($t = -13.69$) are also obtained on the announcement of dividend no changes. On the announcement of dividend increases overinvesting firms earn significantly positive abnormal returns equal to 0.68 percent ($t = 4.02$) while on the announcement of dividend decreases the returns are not significant (-0.07 percent, $t = -0.42$). Moreover, negative abnormal returns equal to -0.32 percent ($t = -1.97$) are experienced by overinvesting firms when they announce dividend initiations, while the announcement of dividend omissions result in abnormal returns of 1.89 percent ($t = 11.15$). These results reinforce the conclusion in Chapter 4 that investors in bank-based countries perceive a dividend increase as lack of investment opportunities and a dividend decrease as good news probably to avoid the issue costs of external financing, to finance new investment opportunities.

In Germany, differences in abnormal returns between value maximising and overinvesting firms prove to be insignificant irrespective of the direction of the dividend change. This provides evidence in support of the signalling hypothesis. Moreover, under the cash flow signalling hypothesis, for value maximising firms the predicted impacts of announcement of dividend changes is larger in absolute value for dividend decreases than for dividend increases. Indeed, the t -statistics of the difference in abnormal returns between dividend increases and dividend decreases by value maximising firms equals to -1.75. All other tests of the differences in abnormal returns between the dividend change groups do not provide strong evidence to reject the signalling hypothesis over the overinvestment hypothesis.

In France with the exception of dividend omissions, none of the abnormal returns of high and low market-to-book groups are significant. Dividend omissions result in negative abnormal returns of -1.79 percent (t -stat = -10.01) for high market-to-book firms and 1.86 percent ($t = 10.42$) for low market-to-book firms. However, none of the differences between the abnormal returns of high and low market-to-book groups across all the dividend change groups is significant. These results do not provide support for the overinvestment hypothesis.

Similarly, in Italy, results do not provide evidence to support the overinvestment hypothesis. Value maximising firms experience significantly negative abnormal returns on the announcement of dividend increases equal to -0.26 percent ($t = -2.01$) while on the announcement of dividend decreases returns equal to 0.25 percent ($t = 1.94$). Similar behaviour is obtained when companies announce dividend initiations and omissions. Overinvesting companies experience negative abnormal returns on the announcement of dividend increases and decreases equal to -0.44 percent ($t = -3.44$) and -0.18 percent ($t = -1.66$) respectively. Announcement of no

changes in dividends do not cause any significant share price reaction, in contrast to the share price reaction on the announcement of dividend initiations and omissions. The results of the comparisons between value maximising and overinvesting firms are also presented. On the announcement of dividend increases and decreases value maximising firms earn higher abnormal returns than overinvestment firms, but the differences do not prove to be statistically different from zero. However, on the announcement of dividend no changes by overinvesting firms, returns are 0.41 percent ($t = 1.64$) higher than the returns for value maximising firms. On the announcement of dividend initiations overinvesting firms earn statistically higher abnormal returns than value maximising firms; the difference is equal to 1.15 percent ($t = 1.73$). The differences in absolute values according to the direction of dividend change are also examined for value maximising and overinvesting firms. The results do not provide any clear evidence in support of the hypothesis.

In Panel C I examine the share price behavior to the announcement of dividend changes by value maximising and overinvesting firms in a three-day event window (Day -1 to $+1$). In the UK there is a positive relation between the share price reaction and the direction of dividend changes. More precisely, on the announcement of dividend increases value maximising firms earn significant abnormal returns equal to 0.89 percent ($t = 3.94$) while the share price reaction around the announcement of dividend decreases equals to -1.24 percent ($t = -5.52$). Announcement of no changes in dividends do not cause any significant share price reaction. Around the announcement of dividend initiations abnormal returns equal to 3.66 percent ($t = 16.25$); while dividend decreases cause a negative share price reaction equal to -0.78 percent ($t = -3.48$). Similar behavior is obtained when examining the abnormal returns around the announcement of dividend changes by overinvesting firms. Dividend increases/ initiations (decreases/omissions) result in positive (negative) abnormal returns on days -1 to $+1$, while the share price reaction to the announcement of no changes in dividends does not prove to be statistically significant ($t = 1.35$). Comparisons of the abnormal returns between value maximising and overinvesting firms around the dividend announcement changes do not reveal any significant differences. Furthermore, the difference in absolute values for dividend increases and dividend decreases appear to be significant both in the case of overinvesting and value maximising firms. This is in contrast with the results of Lang and Litzenberger (1989) who find that the difference in absolute values of increases and decreases is significant for overinvesting firms but insignificant for value maximising firms. Therefore, results fail to reject the signalling hypothesis in favour of the overinvesting hypothesis.

In Germany, value maximising firms earn positive but insignificant abnormal returns around the announcement of dividend increases, decreases and no changes. Announcements of a 100 percent

change in either direction result in a negative share price behavior. Overinvesting firms earn positive but insignificant abnormal returns around the announcement of dividend increases; while, around the announcement of dividend decrease abnormal returns equal to 1.50 percent ($t = 5.10$). Dividend no changes by overinvesting firms result in significantly positive abnormal returns equal to 0.92 percent ($t = 3.14$). Negative abnormal returns equal to 0.54 percent ($t = -1.85$) is observed around the announcement of dividend initiations. In contrast, abnormal returns around the announcement of dividend omissions equal to 1.82 percent ($t = 6.19$). T-statistics of the abnormal returns differences between value maximising and overinvesting firms are statistically insignificant irrespective of the dividend change direction.

Similarly, in France a positive but insignificant share price behavior is obtained around the announcement of dividend increases, decreases and no changes. Dividend initiations result in negative abnormal returns equal to -0.54 percent ($t = -1.76$) and dividend omissions result in positive abnormal returns equal to 1.66 percent ($t = 5.37$). Around the dividend change announcements by overinvesting firms, dividend increases result in positive abnormal returns equal to 0.59 percent ($t = 1.90$) and dividend decreases result in negative abnormal returns equal to -0.56 percent ($t = -1.81$). Dividend no changes and initiating firms experience positive abnormal returns equal to 0.73 percent ($t = 2.35$) and 1.79 percent ($t = 5.78$) respectively. These results are consistent with both the signalling and the overinvesting hypotheses; however the tests of the differences in abnormal returns between value maximising and overinvesting firms do not provide evidence to reject the signalling hypothesis over the overinvesting hypothesis.

As in the other countries in Italy, the results do not provide support in favour of the overinvestment hypothesis. Value maximising firms earn negative abnormal returns around the announcement of dividend increases and decreases, equal to -0.58 percent ($t = -2.60$) and -0.22 percent ($t = -1.00$). Around the announcement of no changes in dividends and initiations value maximising firms experience significantly negative abnormal returns. In contrast, around the announcement of dividend omissions results appear to be positive and significant. Moreover, no significance is obtained from the comparisons between the value maximising and overinvesting firms.

TABLE 5.2 THE SHARE PRICE BEHAVIOR OF VALUE MAXIMISING AND OVERINVESTING FIRMS ACCORDING TO THE DIRECTION OF DIVIDEND CHANGE ANNOUNCEMENT

Table shows the share price reaction to dividend change announcements over the period 1987 to 2002. Companies are firstly divided into two groups: value maximising firms (high market-to-book value, i.e. higher than the median) and overinvesting firms (low market-to-book value, i.e. lower than the median). Secondly, companies in each group are further categorised into five groups according to the direction of dividend change: INC=Increase, NC=No Change, DEC=Decrease, INI=Initiation, OMI=Omission. Panel A shows the number of companies in each of the 10 groups. Panel B shows the abnormal returns on the day of the announcement (Day 0) and Panel C shows the abnormal returns on days -1 to +1. T-Statistics reported in the parenthesis: ***Significant at 0.01 level, **Significant at 0.05 level and *Significant at 0.10 level

PANEL A: PERCENTAGE OF FIRMS IN EACH GROUP										
		TOTAL NUMBER OF FIRMS	INCREASES	DECREASES	NO CHANGES	INITIATIONS	OMISSIONS			
			%	%	%	%				
UK	MTB-HIGH	4569	47	6	42	2	2			
	MTB-LOW	4543	46	6	44	1	2			
GERMANY	MTB-HIGH	511	32	9	52	4	3			
	MTB-LOW	508	28	6	56	5	4			
FRANCE	MTB-HIGH	491	32	14	47	3	3			
	MTB-LOW	492	31	13	48	4	4			
ITALY	MTB-HIGH	315	21	12	53	9	4			
	MTB-LOW	318	25	11	54	6	4			
PANEL B: ABNORMAL RETURNS ON DAY 0										
		INCREASES	DECREASES	NO CHANGES	INITIATIONS	OMISSIONS				
UK (1)	MTB-HIGH	0.543 ^{***} (4.18)	-1.618 ^{***} (-12.44)	0.048 (0.37)	0.458 ^{***} (3.52)	-0.742 ^{***} (-5.71)				
	MTB-LOW	0.608 ^{***} (4.67)	-0.984 ^{***} (-7.57)	0.237 [*] (1.82)	2.409 ^{***} (18.52)	-0.543 ^{***} (-4.18)				
	(MTB-LOW) - (MTB-HIGH)	0.065 (0.38)	0.634 (0.98)	0.189 [*] (1.08)	1.951 [*] (1.70)	0.199 (0.17)				
	T INCDEC	T INC-NC	T INC-INI	T INCOMI	T DEC-NC	T DEC-INI	T DECOMI	T NC-INI	T NCOMI	T INI-OMI
MTB-HIGH	4.29 ^{***}	2.80 ^{***}	2.97 ^{***}	1.62	3.30 ^{***}	5.13 ^{***}	0.90	0.22	0.93	3.03
MTB-LOW	3.66 ^{***}	2.25 ^{**}	0.15	1.67 [*]	2.80 ^{***}	1.37	0.47	3.76 ^{***}	0.93	0.79
GERMANY (2)	MTB-HIGH	-0.129 [*] (-1.76)	0.086 [*] (1.64)	-2.326 ^{***} (-13.69)	0.283 ^{***} (2.67)	0.185 ^{**} (2.09)				
	MTB-LOW	0.683 (1.02)	-0.072 (-0.42)	0.151 (0.89)	-0.317 [*] (-1.87)	1.893 ^{***} (11.15)				
	(MTB-LOW) - (MTB-HIGH)	0.812 (0.98)	-0.158 (0.43)	2.477 (1.42)	-0.6 (-0.98)	1.708 (1.24)				
	T INCDEC	T INC-NC	T INC-INI	T INCOMI	T DEC-NC	T DEC-INI	T DECOMI	T NC-INI	T NCOMI	T INI-OMI
MTB-HIGH	1.75 [*]	1.26	0.67	0.29	1.68 [*]	0.55	0.44	1.42	1.24	0.081
MTB-LOW	0.03	0.35	0.80	2.01 ^{**}	0.14	0.64	1.83 [*]	0.98	1.94 [*]	2.22 ^{**}
FRANCE (3)	MTB-HIGH	0.118 (0.66)	0.062 (0.35)	0.211 (1.18)	-0.165 (-0.92)	-1.791 ^{***} (-10.01)				
	MTB-LOW	0.185 (1.04)	-0.136 (-0.76)	0.162 (0.91)	-0.020 (-0.11)	1.865 ^{***} (10.42)				
	(MTB-LOW) - (MTB-HIGH)	0.067 (-0.19)	-0.198 (-0.36)	-0.049 (0.19)	0.145 (-0.545)	3.656 (1.40)				
	T INCDEC	T INC-NC	T INC-INI	T INCOMI	T DEC-NC	T DEC-INI	T DECOMI	T NC-INI	T NCOMI	T INI-OMI
MTB-HIGH	0.14	0.34	0.21	1.0902	0.39	0.12	1.05	0.37	1.15	0.96
MTB-LOW	0.63	0.08	0.63	0.85	0.63	0.44	1.03	0.63	0.87	1.01

		INCREASES		DECREASES		NO CHANGES		INITIATIONS		OMISSIONS
ITALY (4)	MTB-HIGH	-0.260** (-2.01)		0.251* (1.94)		-0.361*** (-2.79)		-0.463*** (-3.59)		0.749*** (5.79)
	MTB-LOW	-0.444*** (-3.44)		-0.176* (-1.66)		0.052 (0.404)		0.684*** (5.29)		1.201*** (9.30)
	(MTB-LOW) - (MTB-HIGH)	-0.184 (-0.56)		-0.427 (-0.74)		0.413 (1.64)		1.147* (1.73)		0.452 (0.42)
	T INCDEC	T INC-NC	T INC-INI	T INCOMI	T DEC-NC	T DEC-INI	T DECOMI	T NC-INI	T NCOMI	T INI-OMI
MTB-HIGH	1.02	0.31	1.92*	2.03**	1.34	0.74	1.20	2.34***	2.26**	0.66
MTB-LOW	0.62	1.97*	0.034	1.36	0.54	0.45	0.99	0.95	0.80	1.21

PANEL C: ABNORMAL RETURNS FOR THE PERIOD -1 TO +1										
		INCREASES		DECREASES		NO CHANGES		INITIATIONS		OMISSIONS
UK (1)	MTB-HIGH	0.887*** (3.94)		-1.243*** (-5.52)		0.226 (1.00)		3.661*** (16.25)		-0.783*** (-3.48)
	MTB-LOW	0.880*** (3.90)		-0.637*** (-2.83)		0.303 (1.35)		0.423* (1.88)		-0.395* (-1.75)
	(MTB-LOW) - (MTB-HIGH)	-0.007 (-0.03)		0.606 (0.70)		0.077 (0.35)		-3.238 (-1.39)		0.388 (1.25)
	T INCDEC	T INC-NC	T INC-INI	T INCOMI	T DEC-NC	T DEC-INI	T DECOMI	T NC-INI	T NCOMI	T INI-OMI
MTB-HIGH	3.50***	2.93***	3.76***	1.28	2.42***	5.29***	0.33	4.67***	0.81	3.13***
MTB-LOW	2.36***	2.74***	0.40	1.27	1.46	0.81	0.21	0.10	0.70	0.54
GERMANY (2)	MTB-HIGH	0.014 (0.05)		0.291 (0.99)		0.065 (0.22)		-0.238 (-0.81)		-1.100*** (-3.74)
	MTB-LOW	0.160 (0.54)		1.501*** (5.10)		0.924*** (3.14)		-0.544* (-1.85)		1.820*** (6.19)
	(MTB-LOW) - (MTB-HIGH)	0.174 (0.33)		1.210 (-1.20)		0.859** (2.04)		-0.306 (-0.25)		2.290 (1.59)
	T INCDEC	T INC-NC	T INC-INI	T INCOMI	T DEC-NC	T DEC-INI	T DECOMI	T NC-INI	T NCOMI	T INI-OMI
MTB-HIGH	1.85	0.13	0.24	1.01	1.81	1.38	2.01	0.29	1.07	0.59
MTB-LOW	0.18	1.64	0.89	1.08	0.84	0.85	0.93	1.86	0.58	1.42
FRANCE (3)	MTB-HIGH	0.201 (0.65)		0.322 (1.04)		0.284 (0.92)		-0.545* (-1.76)		1.664*** (5.37)
	MTB-LOW	0.587* (1.90)		-0.561* (-1.81)		0.729*** (2.35)		-0.548* (-1.77)		1.790*** (5.78)
	(MTB-LOW) - (MTB-HIGH)	0.386 (-0.75)		-0.883 (0.70)		0.445** (-2.22)		-0.003 (0.50)		0.126 (-0.05)
	T INCDEC	T INC-NC	T INC-INI	T INCOMI	T DEC-NC	T DEC-INI	T DECOMI	T NC-INI	T NCOMI	T INI-OMI
MTB-HIGH	1.01	0.27	1.32	0.78	1.13	0.01	1.28	1.48	0.69	1.38
MTB-LOW	0.16	1.08	1.01	0.79	0.86	0.94	0.69	0.37	1.06	1.14
ITALY (4)	MTB-HIGH	-0.580*** (-2.60)		-0.223 (-1.00)		-0.637*** (-2.84)		-0.934*** (-4.17)		1.746*** (7.80)
	MTB-LOW	-0.153 (-0.68)		0.302* (1.65)		-0.087 (-0.39)		0.452** (2.02)		-0.150 (-0.67)
	(MTB-LOW) - (MTB-HIGH)	0.427 (0.78)		0.525 (0.59)		0.550* (1.66)		1.386 (1.02)		-1.896 (-1.45)
	T INCDEC	T INC-NC	T INC-INI	T INCOMI	T DEC-NC	T DEC-INI	T DECOMI	T NC-INI	T NCOMI	T INI-OMI
MTB-HIGH	0.47	0.11	0.83	0.38	0.61	0.51	0.06	0.91	0.46	0.39
MTB-LOW	0.63	0.16	0.50	0.02	0.58	1.31	1.41	1.15	2.19	2.51

Literature provides two explanations for the share price reaction around the announcement of dividend changes, namely the overinvestment hypothesis and the signalling hypothesis. However the majority of the studies have been unable to provide strong evidence that completely rules out the cash flow signalling hypothesis. For example, Dewenter and Warther (1998) compare the share price reactions around the announcement of dividend changes in the US (market-based country) and Japan (bank-based country). They do not find evidence to distinguish between the two hypotheses. Yoon and Starks (1995) find evidence to support the signalling hypothesis rather than the overinvestment hypothesis. Denis, Denis and Sarin (1994) find evidence to support the signalling and clientele hypotheses rather than the overinvestment hypothesis. My results provide further evidence to support the signalling hypothesis over the overinvestment hypothesis. In the next section, I provide cross-country comparisons of the share price reaction to dividend change announcements.

5.5.2 COUNTRY COMPARISONS

In this chapter, I argue that in market-based countries (UK) there exists a higher level of agency conflict (and information asymmetry) than in bank-based countries (Germany, France and Italy). This is due to lower ownership dispersion in bank-based countries, the more effective role of banks as monitors of the managers and/or as information providers (especially in Germany) and to a number of other reasons described in Section 5.3. Consequently, if dividends are used as a mechanism to alleviate agency conflicts and/or information asymmetries between managers and shareholders, abnormal returns should be higher in the UK as compared to the other countries in my sample. Similarly, in bank-based countries, where there are similar corporate governance systems abnormal returns should not be statistically significant. These predictions are consistent with the signalling and the overinvesting hypotheses. A necessary condition for the overinvestment hypothesis to hold over the signalling hypothesis is that comparisons of the abnormal returns for value maximising firms between the sample countries should not reveal any statistically significant differences. However, the abnormal returns differences for overinvesting firms between the sample countries should be substantial. The results of the comparisons are presented next.

Table 5.3 shows the t-statistics of the abnormal returns differences between the UK, Germany, France and Italy. **Panel A** shows the t-statistics of the differences in abnormal returns on day 0; and **Panel B** considers a three day window around the event (Day -1 to +1). Generally, as expected abnormal returns in the UK appear to be statistically higher as compared to any other country in my sample. Abnormal returns differences between the bank-based countries do not appear to be statistically significant. This evidence is consistent with both the signalling and overinvestment hypotheses. Further, cross-country comparisons in relation to the direction of

dividend change and to the market-to-book ratio, would enable us to distinguish between the two predictions.

Firstly, I compare the announcement day returns for the UK firms to the returns for German firms. On day 0, overinvesting and value maximising UK firms that announce dividend increases earn statistically higher abnormal returns than their German counterparts. Statistically lower abnormal returns are generated in the UK as compared to Germany on the announcement of dividend decreases. There is no significant difference between the UK and Germany abnormal returns on the announcement of dividend changes. On the announcement of dividend initiations, UK value maximising firms earn statistically higher abnormal returns than German value maximising firms; however, the difference between the returns for overinvesting firms does not appear to be statistically significant. On the announcement of dividend omissions, overinvesting German firms experience statistically higher abnormal returns than their UK counterparts. This could be attributed to lower agency conflicts in Germany; however the evidence obtained is not strong enough to reject the signalling hypothesis over the overinvesting hypothesis.

The results of the comparisons between UK-France, and UK-Italy follow a similar pattern. In France and Italy, both value maximising and overinvesting firms experience statistically lower abnormal returns on the announcement of dividend increases; however, on the announcement of dividend decreases, French and Italian companies experience lower abnormal returns. Abnormal returns on the announcements of dividend no changes do not appear to differ significantly between the compared countries. As compared to France and Italy, value maximising firms in the UK experience statistically higher share price reaction on the announcement of dividend initiations. However, comparisons of the share price reaction for overinvesting firms do not reveal any significant differences. In the last three rows of Panel A I provide the comparisons between the bank-based countries. Results do not show any statistical differences either for overinvesting or value maximising firms.

In Panel B I present the t-statistics of the differences in abnormal returns for a three-day window around the announcement of dividend changes. Results do not appear to differ substantially from the results shown in Panel A. Both value maximising and overinvesting firms in the UK earn significantly higher abnormal returns around the announcement of dividend increases as compared to their counterparts in bank-based countries. Around the announcement of dividend decreases the only significant difference obtained is between the UK and German value maximising firms. Comparisons between the countries around the announcement of dividend no changes do not allow us to draw any clear conclusions. Value maximising firms in the UK earn statistically higher abnormal returns around the announcement of dividend initiations, but the

differences between the returns for overinvesting firms do not differ significantly. As in Panel A, the country comparisons between overinvesting firms that announce dividend omissions reveal significantly lower abnormal returns in the UK than in any other country. This is in line with the overinvesting hypothesis (i.e. dividend omissions generate more free cash flow in the hands of the managers which will be invested in negative present value projects. Because of higher agency conflicts in the UK the share price reaction to such announcements is more significant than in countries with lower agency conflicts).

TABLE 5.3 COUNTRY COMPARISONS OF THE SHARE PRICE REACTION TO DIVIDEND ANNOUNCEMENTS BY HIGH-AND-LOW MARKET TO BOOK RATIOS

Table shows the t-statistics of the differences in means between countries. Panel A provides comparisons of the abnormal returns on the day of the announcement and Panel B provides comparisons of the abnormal returns for the period -1 to +1 days. Comparisons are conducted firstly, between value maximising (high market-to-book) firms and secondly, between overinvesting (low market-to-book) firms in each country. T-Statistics: ***Significant at 0.01 level, **Significant at 0.05 level and *Significant at 0.10 level

PANEL A: DAY 0 ABNORMAL RETURNS										
	INCREASE		DECREASE		NO CHANGE		INITIATION		OMISSION	
	MTB HIGH	MTB LOW	MTB HIGH	MTB LOW	MTB HIGH	MTB LOW	MTB HIGH	MTB LOW	MTB HIGH	MTB LOW
T _{UK-GERMANY}	2.93***	2.59***	-3.45***	-1.76*	1.37	0.46	2.49***	0.72	-0.69	-2.00**
T _{UK-FRANCE}	1.64*	2.02**	-2.27**	-1.93*	-0.50	0.13	3.29***	0.42	-1.23	1.64*
T _{UK-ITALY}	2.73***	4.72***	-2.90***	-1.65*	1.89*	0.91	2.33**	0.84	-1.81*	-1.68*
T _{GERMANY-FRANCE}	-0.78	-0.17	1.05	0.04	1.43	-0.27	0.59	-0.39	-0.76	0.88
T _{GERMANY-ITALY}	0.64	1.60	0.38	0.45	-1.13	0.44	-0.56	0.22	-0.82	0.92
T _{FRANCE-ITALY}	1.18	1.57	-0.64	0.46	1.10	0.68	-1.36	0.55	0.32	-1.31
PANEL A: DAY -1 TO -1 ABNORMAL RETURNS										
	INCREASE		DECREASE		NO CHANGE		INITIATION		OMISSION	
	MTB HIGH	MTB LOW	MTB HIGH	MTB LOW	MTB HIGH	MTB LOW	MTB HIGH	MTB LOW	MTB HIGH	MTB LOW
T _{UK-GERMANY}	2.62***	2.01**	-2.89***	-1.07	0.53	-1.71*	3.14***	0.71	0.19	-1.73*
T _{UK-FRANCE}	1.74*	1.76*	-0.56	-1.06	-1.25	1.90*	3.97***	0.74	-1.33	-1.99**
T _{UK-ITALY}	3.19***	2.75***	-1.18	-1.06	2.94***	1.39	2.34**	1.01	-0.40	-1.67*
T _{GERMANY-FRANCE}	-1.22	-0.09	1.58	-0.03	-1.46	2.85***	0.25	0.01	-1.57	0.07
T _{GERMANY-ITALY}	1.15	0.65	1.76*	-1.01	1.94*	2.51***	-0.45	0.39	1.70*	0.44
T _{FRANCE-ITALY}	1.07	0.71	-0.27	1.02	3.06***	-0.56	-0.71	0.41	1.06	-0.04

5.6 CONCLUSION

In the present part of my study I investigate the dividend policy in the UK, Germany, France and Italy by testing the agency conflict hypothesis. I particularly concentrate on the shareholder-management conflict and examine Jensen's (1986) free cash flow hypothesis. This hypothesis has its roots to the problem arising from the separation of management and ownership. Managers' goal is to pursue their own personal interests which conflict with the interests of the shareholders (i.e. wealth maximisation). Managers have tendency to invest in negative net present value projects instead of paying the free cash flow to the shareholders. Jensen (1986) hypothesizes that free cash flow may be used to fund negative net present value projects. Managers may use internally generated cash (free cash flow) to avoid the monitoring associated with raising capital from the markets. Lang and Litzenberger (1989) suggest that a dividend change may convey information regarding a firm's future investments. According to this overinvestment hypothesis, a dividend increase by a firm with free cash flow problems will reduce the market's estimate of the amount of cash that will be wastefully invested, thereby increasing firm value. Similarly, a dividend decrease by such a firm will signal that more negative net present value projects will be undertaken causing a decrease in firm value. These predictions however, are consistent both with the signalling hypothesis and the overinvesting hypothesis. Lang and Litzenberger (1989) propose the Tobin's Q ratio in order to distinguish between the two hypotheses. They find evidence consistent with the overinvesting hypothesis, since overinvesting firms have greater price reactions, on average to dividend changes than value maximising firms do.

This study compares the dividend policies of UK, German, French and Italian companies for the period 1987 to 2002. For the purpose of testing my hypothesis I use an event study methodology (Brown and Warner, 1985) to examine the share price reaction to the announcement of dividend changes in European countries. I calculate abnormal returns during different event windows (Day 0, -1 to +1). Lang and Litzenberger (1989) use the Tobin's Q ratio to distinguish between value maximising (Tobin's $Q > 1$) and overinvesting (Tobin's $Q < 1$) firms. Because of data unavailability to calculate the Tobin's Q ratio I use the market-to-book ratio as an alternative proxy for growth opportunities. Perfect and Wiles (1994) show that Tobin's Q and the market-to-book ratio are highly correlated (the correlation coefficient is about 0.96). For the two groups of companies, I analyse and compare the share price reaction to the announcement of dividend increases, decreases, no changes, initiations and omissions. To the best of my knowledge this is the first European study to simultaneously examine the share price reaction to dividend announcement changes of magnitude equal and less than 100 percent in either direction. Moreover, no comparative European study was found in the literature that compares the returns of overinvesting and value maximising firms.

According to Lang and Litzenberger (1989) announcements of sizable dividend changes have significant impact on the share price behavior of overinvesting firms, but no impact for value maximising firms. This prediction is consistent with both the signalling and the overinvestment hypotheses. They distinguish between the two hypotheses by analysing the behavior of share prices for overinvesting and value maximising firms, in relation to the direction of dividend changes announced. Consistent with the cash flow theory, they find that the return is significantly higher for overinvesting firms announcing dividend increases than for value maximising firms. The greater market reaction to cash distributions by overinvesting firms is evidence of the more severe agency problems facing these firms, alleviated via disgorging cash. Evidence obtained from European countries contradicts with these results. Particularly, my results do not show any significant differences in the share price reaction for value maximising and overinvesting firms.

Results show that on the announcement of dividend increases/initiations in the UK, value maximising and overinvesting firms generate highly positive abnormal returns; while on the announcement of dividend decreases/omissions firms generate negative abnormal returns. Comparisons of the returns between value maximising and overinvesting firms do not reveal significant differences. Therefore, in the UK there is no strong evidence to reject the signalling hypothesis over the cash flow/overinvesting hypothesis.

In Germany, value maximising firms earn significantly negative abnormal returns on the announcement of dividend increases and no changes; and on the announcement of dividend decreases and omissions, these firms experience positive abnormal returns. This indicates that investors perceive a dividend increase as lack of investment opportunities while a dividend decrease is perceived as a way of raising costless funding for investment. On the other hand, overinvesting firms experience positive but insignificant returns, on the announcement of dividend increases and negative (insignificant) returns on the announcement of dividend decreases. This provides support for the overinvestment hypothesis. However, the abnormal returns differences between value maximising and overinvesting firms do not appear to be statistically significant. Consequently, results do not provide strong evidence to reject the signalling hypothesis over the overinvestment hypothesis.

In France, there is no significant share price reaction to dividend change announcements. The only exception being on the announcement of dividend omissions. Value maximising firms earn significantly negative abnormal returns equal to -1.80 percent ($t = -10.01$), while overinvesting firms earn significantly positive abnormal returns equal to 1.87 percent ($t = 10.42$). The abnormal returns differences in means between value maximising firms and overinvesting firms do not prove to be statistically significant.

Similarly, in Italy both value maximising and overinvesting firms earn statistically negative abnormal returns on the announcement of dividend increases and positive abnormal returns on the announcement of dividend decreases. However, the differences between the two market-to-book value groups do not appear to be statistically significant. Moreover, no statistical differences are obtained from the comparisons of the share price reaction between the dividend change groups.

It is established that the corporate governance system in market-based countries result in higher agency conflicts and/or information asymmetries as compared to bank-based countries. If dividends are used as a mechanism to alleviate agency conflicts and/or information asymmetries, then the share price reaction to dividend change announcements should be higher in market-based countries. Indeed results show that the share price reaction to dividend changes is significantly higher in the UK than in any other country under consideration. Moreover, the differences in abnormal returns between the bank-based countries do not appear to be statistically significant. This provides evidence consistent with the overinvesting and signalling hypotheses. Further tests of the share price reaction to dividend change announcements for value maximising and overinvesting firms between the sample countries provide evidence of the signalling hypothesis.

My study contributes to the literature by using European data to test the dividend theories developed in the US. However, I believe that there is room for further research in the area. Tests of the agency conflict hypothesis as well further attempts to distinguish between the free cash flow and the cash flow signaling hypotheses, could be expanded. A first possible way is to consider the analysts' earnings forecasts. According to Lang and Litzenberger (1989) the cash flow signaling hypothesis predicts that announcements of dividend changes by firms with Tobin's $Q < 1$ will cause investors to revise their cash flow expectations in the same direction, whereas the overinvestment hypothesis predicts no impact on current cash flow expectations. For firms with Tobin's $Q > 1$, both hypotheses predict that announcements of large dividend increases will have little or no impact on investors' current cash flow expectations. For such firms announcing dividend decreases, however, the conditional cash flow signaling hypothesis predicts downward revisions in cash flow expectations whereas the free cash flow hypothesis predicts no impact. The standard change in the median of analysts' forecasts surrounding each dividend change announcements (both for $Q > 1$ and $Q < 1$ firms) could be calculated as:⁴⁸ $\{[(F_1 - F_{.1}) \times 100] / [P_0]\}$; where $F_{.1}$ is the median analysts' forecast for current annual EPS in the month prior to the dividend change announcement month, F_1 is the median analysts' forecast of current annual EPS

⁴⁸ Formula as used in Denis, Denis and Sarin (1994)

in the month following the dividend change announcement month and P_0 is the market price of the firm's equity two days prior to the dividend change announcement.

Another way to expand the current study is to investigate the firm's capital expenditure in the post-announcement period. The overinvestment hypothesis predicts that overinvesting firms would experience positive abnormal returns following dividend increase announcements because the increase reduces the market's expectations of the amount of cash that will be invested in negative net present value projects. Under this hypothesis, capital expenditures of overinvesting firms would be less than previously expected following dividend increases and greater than previously expected following dividend decreases. However, the overinvestment hypothesis makes no clear predictions regarding the future investment level of value maximising firms. For example, Denis, Denis and Sarin (1994) study the changes in capital expenditure in the post-announcement period. They focus on capital expenditures in the first full fiscal year following the year in which the dividend change announcement is made. It would also be interesting to test whether in the absence of dividend changes; year 1 capital expenditure equals year -1 capital expenditures. Data for the expanding this European study towards these two directions is available by online databases. At present, time constraints do not allow me to further examine the agency conflict hypothesis in European countries; however, this is an interesting theme for further investigation in the near future.

CHAPTER 6: THE THESIS CONCLUSION

The thesis has revisited the dividend puzzle in an attempt to fit the pieces of the puzzle together. The purpose was to investigate empirically the dividend policy of companies in Europe, focussing mainly on the UK, Germany, France and Italy for the period 1987 to 2002. The attractiveness of the issue lies in the fact that the dividend decision is controversial despite being one of the three major categories of corporate long-term financial decisions that the firm's management face.¹ The conflicting views relate to whether managers should pay at all dividends. In case they have to, how much should they distribute and how much should they retain for future investments, what form of dividend payment should they adopt, and can their dividend decision affect shareholders' wealth in the short- and long-term.

My interest in this topic arose not only from the importance of dividend policy in the area of finance managers, shareholders, policy decision-makers, but from the fact that explaining dividend policy has been one of the most difficult challenges facing financial economists. Despite decades of study, theoretical and empirical literature has yet to completely understand the factors that influence dividend policy and the manner in which these factors interact. Two decades ago Black (1976) notes that "The harder we look at the dividend picture, the more it seems like a puzzle, with pieces that just don't fit together" (page 5). In assessing the contributions provided by researchers, Felstein and Green (1983) echo Black's sentiments by stating, "The nearly universal policy of paying substantial dividends is the primary puzzle in the economics of corporate finance". Miller (1986) also recognises that the observed preference for cash dividends is one of the "soft spots in the current body of theory". The situation is pretty much the same today. In a recent survey of dividend policy, Allen and Michaely (1995) conclude, "Much more empirical and theoretical research on the subject of dividends is required before a consensus can be reached" (page 833); while Brealey, Myers (2003) list dividends as one of the ten important unsolved problems in finance.

The Finance literature offers different views as to whether dividends affect the value of the firm. Three theories have been developed. Firstly, the rightist² support that dividends have a positive effect on the value of the company, because share prices are highly volatile, thus risky, and dividends represent a more reliable form of return than capital gains.³ Secondly, the radical left⁴ believes that dividends affect the value of the firm negatively. Whenever dividends are taxed more heavily than capital gains, firms should pay low cash dividends and

¹ See Miller and Modigliani (1961), Allen and Michaely (1995, 2001), Copeland and Weston (1992), Brealey and Myers (2001), Baker, Powell and Veit (2002)

² See Graham and Dodd (1934).

³ This is also known as the Bird-in-the-hand fallacy; See Gordon (1963) and Lintner (1962).

⁴ See Miller and Scholes (1978, 1982).

retain earnings in order to provide returns to their shareholders in less costly ways (e.g. share price increases, share repurchases). Thirdly, Miller and Modigliani (1961) theoretically prove that under the assumption of perfect capital markets and when the firm's investment policy is fixed and known to investors the dividend policy is irrelevant to the firm value.⁵ Miller and Modigliani study is a starting point of one of the longest and most intractable controversies in the literature of finance. Allen and Michaely (1995) argue that the most important contribution of the Miller and Modigliani paper was the careful and detailed description of the conditions under which dividend policy is relevant.

Researchers responded to Miller and Modigliani (1961) dividend policy irrelevance conclusion by offering many competing hypotheses about why companies pay dividends and why investors pay attention to dividends. The profusion of theories led Ang (1987) to observe that literature has moved from a position of not enough good reasons to explain why dividends are paid to one of too many. Studies that relaxed the Miller and Modigliani assumptions find that the firm's dividend policy is relevant to its valuation. For example, Allen and Michaely (1995) strengthen the importance of dividends as they note that theories of asset pricing, capital structure, mergers and acquisitions and capital budgeting all rely on a view of how and why dividends are paid. The different theories developed in the literature that attempt to provide an answer to the dividend puzzle can be categorised into three major areas.⁶

Firstly, under the **Taxation Effect Hypothesis**⁷ investors receive higher before-tax risk-adjusted returns on stocks with higher anticipated yields in order to compensate for the historically higher taxation of dividend income relative to capital gains⁸. The positive relationship between monthly stock returns and dividend yield is consistent with this prediction. An alternative method of deducing the tax effect is from the analysis of the behaviour of share prices when shares are quoted ex-dividend. Elton and Gruber (1970) find that share prices drop by less than the amount of dividends on the ex-dividend day, implying that, for a marginal investor, dividends are taxed at a higher rate than capital gains. Under the UK imputation system the overall tax burden is a function of corporation tax, the dividend payout ratio and the tax differential between dividends and capital gains (Lasfer, 1995)⁹. King

⁵ See Miller and Modigliani (1961) the Residual Theory of the firm.

⁶ An additional view is the behavioural reason (Shefrin and Stateman, 1984). I do not consider this theory in my study as it is not directly testable.

⁷ Firstly proposed by Brennan (1970) using a version of the Capital Asset Pricing Model (CAPM). Also see Miler and Scholes (1978, 1982), Auerbach (1979), Bradford (1981).

⁸ For example under the US classical taxation system dividends are subject to double taxation, firstly at the company level and secondly in the hands of the shareholders. Moreover, there is timing difference as capital gains are only taxed on realisation (See Constantinides, 1983, 1984).

⁹ The imputation system (mainly adopted in European Countries) provides incentives for the payment of dividends as shareholders receive a tax credit on dividends but not on capital gains.

(1977) provides a formal definition of the extent to which the tax system discriminates against dividends in terms of the tax discrimination variable.¹⁰ According to the taxation effect hypothesis if the tax discrimination variable is high (low) then, ex-day share prices should drop by less (more) than the amount of dividends, resulting in positive (negative) ex-day abnormal returns. However, positive ex-day returns can also be consistent with the **Short-Term Effect Hypothesis**.¹¹ Kalay (1982) argues that ex-day share prices are driven by short-term traders who enter the market in response to arbitrage opportunities; and that the ex-day share price drop by less than the amount of dividends reflects the transaction costs of these traders exercising dividend capturing activity.

Secondly, the proponents of the **Information Signalling Hypothesis**¹² argue that within a framework of asymmetric information, insiders (managers) use dividends as a mechanism to reveal their incentives and private information to outsiders (shareholders). These signalling arguments consider dividends as informative because of dissipative costs either in the form of higher dividend taxation as compared to capital gains,¹³ or in the form of cost of raising external capital,¹⁴ or in the form of reduced investments.¹⁵ The information content of dividends has been empirically tested by analysing the share price behaviour around dividend announcement.¹⁶ Generally, a dividend increase (decrease) has been observed to provide “good news” (“bad news”) to the market about the future prospects of the company and this has been observed to be reflected in the share price behaviour on the announcement day (positive relationship has been obtained between excessive returns and the direction of dividend change). These beliefs are not, however, homogeneously shared amongst researchers as dividends are considered to be too small to constitute a reliable signal and it is not clear whether companies change their dividends in response to changes in their earnings or to signal future prospects.¹⁷

The third explanation relates to the free cash flow arguments. Jensen and Meckling (1976) argue that with the separation of ownership and control, the interests of the managers (agents) deviate from those of the shareholders (the principals) and as a result managers do not always act to the best interests of the shareholders, but they pursue their own personal benefits at the

¹⁰ The tax discrimination variable can be defined as the opportunity cost of retained earnings in term of net dividends forgone. If dividends and capital gains are taxed equally the tax discrimination variable is equal to unity; tax discrimination variable is lower (higher) than unity if dividends are taxed more (less) heavily than capital gains.

¹¹ See Kalay (1982), Lakonishok and Vermaelen (1986), Koski (1996), Karpoff and Walking (1988).

¹² Bhattacharya (1979), John and Williams (1985), Miller and Rock (1985), Ambarish, John and Williams (1987).

¹³ See Bhattacharya (1979).

¹⁴ See John and Williams (1985), Ambarish, John and Williams (1987), Williams (1988).

¹⁵ See Heinkel (1978), Miller and Rock (1985).

¹⁶ See Pettit (1972), Aharony and Swary (1980), Healy and Palepu (1988), Christie (1994), Watts (1973).

¹⁷ Benartzi, Michaely and Thaller (1997), DeAngelo, DeAngelo and Skinner (1996), Jensen and Johnson (1995).

expense of the shareholders.¹⁸ Under the **Agency Conflict Hypothesis** dividends serve as a mechanism to mitigate agency conflicts and a way of reducing the monitoring costs. This is achieved by forcing managers to pay dividends and to seek additional financing in the capital markets where monitoring is more effective.¹⁹ This strategy aims at reducing the free cash flow in the hands of the managers.²⁰ Similar to the signalling theory, the agency theory is empirically tested on the dividend change announcement day and also predicts a positive relationship between the share price reaction and the direction of dividend change. Lang and Litzenberger (1989) use Tobin's Q as a proxy for growth opportunities. They distinguish between the two hypotheses and provide evidence to support the overinvesting hypothesis over the signalling hypothesis. Other studies²¹ support the signalling hypothesis, however evidence does not completely rule out Jensen's (1986) Free Cash Flow Hypothesis.

A problem with most existing theories is that they fail to consider the potentially complex interactions among the various imperfections.²² The problem is that each theory typically takes an approach that tries to generalise the findings. Fankfurter and Wood (1997, page 31) conclude that dividend policy cannot be modelled mathematically and uniformly for all firms at all times. Because various imperfections affect firms differently, dividend policy may vary substantially from one firm to another, from one market to another, from one country to another. Although researchers typically focus on each market imperfection in isolation, complex interactions may exist among these frictions. If the imperfections are insignificant or offsetting, the Miller and Modigliani conclusion about dividend irrelevance may hold. Otherwise, these market imperfections may be relevant to the dividend setting process and to the value of the firm.

Another problem identified in the literature is that the majority of the studies concentrate on the US market and to a lesser extent the UK. Country comparative studies are very limited, and usually compare the US and Japan.²³ To the best of my knowledge there is no other study that simultaneously investigates the three hypotheses and provides comparisons of the dividend policy across Europe. My thesis fills in this gap in the literature. I have analysed and compared the dividend policies in four major European countries: UK, Germany, France and Italy. These markets are amongst the most important markets in Europe (and the rest of the world). Previous studies have proposed that dividend policy is significantly related to the

¹⁸ Either through perquisites or investment in negative Net Present Value Projects.

¹⁹ Rozeff (1982), Easterbrook (1984).

²⁰ See Jensen (1986). Managers are more likely to overinvest (invest in negative net present value projects) when growth opportunities are low.

²¹ For example, Yoon and Starks (1995), Denis, Denis and Sarin (1994) that followed Lang and Litzenberger (1989).

²² See Baker, Powell and Veit (2002) for a detailed discussion

²³ For example Dewenter and Wether (1998).

market, financial, organisational, institutional and legal characteristics of the firm.²⁴ The taxation systems, corporate governance systems, financial and institutional characteristics differences between UK, Germany, France and Italy constitute the second major motivation for this cross-country comparative study. In terms of the dividend taxation systems, some adopt the partial (UK) while others (Germany, France and Italy) the full imputation systems. In terms of corporate governance systems, these countries can be divided into market-oriented countries (UK) and bank-oriented countries (Germany, France and Italy).²⁵

The thesis has tested whether dividend policy theories can be applied in markets outside the US, as well as to observe and compare the differences of theory predictions under different market and financial environments.²⁶ The thesis contributes to the literature not only because it provides a comparative basis against which prior empirical research carried out in the US can be tested/verified; but also stimulates further tests of the dividend policy in European markets. Country comparative studies of dividend policy are not only important for the managers who take decisions about the firm, but also to the shareholders. Thus, my thesis provides useful information to both international and domestic investors; and is also helpful to improve international portfolio management. Further, it is believed to provide an understanding of how countries' regulatory, financial and economic environments affect the corporate dividend policy, so it could prove important to policymakers who determine the laws and rules of the market.

Data for the purposes of my thesis was collected from DataStream and Hydra, online databases available at Cass Business School. I considered all actively listed companies on the London Stock Exchange (FTSE), the Frankfurt Stock Exchange (DAX), the Paris Stock Exchange (CAC and the Milan Stock Exchange (MIBTEL), for the period August 1987 to August 2002. Data obtained consists of daily share prices and market indices, dividend distributions (i.e. dividend per share, DPS), earnings per share (EPS), year-end market values of equity, asset book values, ex-dividend dates and dividend announcement dates.

In **Chapter 2** I analysed and compared between the classical (US) and imputation (UK, Germany, France and Italy) taxation systems, I analysed the taxation burden on dividends and

²⁴ For example La Porta, Silanes, Shleifer and Vishny (2000), consider the legal protection of minority shareholders in an attempt to explain the dividend policy around the world.

²⁵ See Berglöf (1990), Zysman (1983); alternative terminology used is insider and outsider systems (Franks and Mayer 1994, 1997).

²⁶ Rajan and Zingales (1995), investigate the Capital Structure using international data and note that to the extent which other countries are similar to the US, they provide an independent sample to test the theory and evidence developed, whereas differences would increase the ability to discriminate among alternative theories.

capital gains under both systems,²⁷ I illustrated the imputation system influence on the preference of the shareholders and consequently the dividend policy of the firm, I provided the theory behind the tax discrimination variable,²⁸ I described the dividend taxation systems in the UK, Germany, France and Italy both in the corporation level and the shareholders' level and I calculated the tax discrimination variables in the European countries under consideration in an attempt to identify the differences on the dividend taxation burden between the countries. Furthermore, the major taxation reforms in each country are also analysed in order to perceive the effects of taxation changes on the dividend payout policy as well as on the preferences of shareholders between dividends and capital gains; and consequently their effects on the tax discrimination variable.

The study is the first to build on the advantage of the differences between the US taxation systems (where the majority of the theoretical and empirical evidence is based) and the European taxation systems²⁹ in order to further investigate the effect of taxation on the dividend policy of the firm. Still, there are many differences³⁰ on the treatment of dividends between the European tax systems under consideration.

Results revealed substantial differences in the European taxation systems which result in variant payout policies, as well as, in variant investor preferences across Europe. The analysis provided evidence that in the UK investors would either be indifferent or would prefer dividends over capital gains. The analysis is based on the standard taxation rates. With the effective tax rates, the preference of dividends over capital gains may, however be altered because while the standard income tax rates are likely to be the same as the effective rates, the effective tax rates on capital gains are likely to be lower than the standard rates because of allowances and deferrals of capital gains. This preference was tested by analysing the behaviour of share prices on the ex-dividend dates in Chapter 3.

²⁷ Lasfer (1996) models the dividend and capital gains taxation burden under the UK imputation system. Following Lasfer (1995) I modelled the dividend and capital gains taxation burden under the German, French and Italian partial imputation systems.

²⁸ Defined by King (1977) as the opportunity cost of retained earnings in terms of net dividends foregone. The tax discrimination variable equals to unity if cash in the hands of the company and cash in the hands of the shareholder can be interchanged without attracting an additional tax burden (or credit). If the tax discrimination is lower (higher) than unity, dividends (capital gains) are taxed more heavily than capital gains (dividends).

²⁹ For example, the US classical system discourages companies to distribute profits in the form of dividends as they carry higher taxation as compared to capital gains. On the other hand, European systems provide tax incentives for dividends as shareholders are entitled to tax reimbursements for the taxation suffered at the corporate level (no tax credits are reimbursed to the shareholders when profits are received in the form of capital gains). Moreover, according to OECD data the US has the second highest top tax rate on dividends, when considering both the corporate and individual taxes.

³⁰ For example, differences between the partial (UK) and full (Germany, France and Italy) imputation systems, differences in the taxation rates.

In Germany, I calculate the tax discrimination variables assuming long-term capital gains³¹ and short-term capital gains. Results show that in the case where capital gains carry no tax liabilities, higher and basic tax payers have a preference for capital gains, in contrast to the tax-exempt investors who suffer higher taxation on capital gains than on dividends. On the other hand, all classes of shareholders suffer less taxation if profits are distributed rather than realised through capital gains in the short-term. The analysis based on standard rates suggested that the French tax system has always favoured dividends received by basic tax payers and tax-exempt investors. The higher tax brackets are expected to prefer dividends over capital gains only in recent years. Unlike in the other countries, the tax discrimination in Italy is much smaller for basic and higher tax payers indicating a lower preference for dividends. Tax-exempt investors are indifferent between dividends and capital gains throughout the sample period.

This evidence is contradictory with the Miller and Modigliani prediction, that dividend policy is irrelevant as it is simply a transfer of money from the company to the shareholders. If the shareholder is in the immediate need of liquidity, will suffer higher taxes on capital gains than on dividends; in the opposite case where profits are distributed as dividends, shareholders with excess cash can reinvest the money in the company.

In Chapter 3 I tested the taxation effect hypothesis by analysing and comparing the ex-dividend share price reaction in the UK, Germany, France and Italy. On the ex-dividend day share prices drop by less than the amount of dividend and according to the taxation effect hypothesis this is due to the differential taxation of dividends and capital gains.³² On the other hand, studies propose the short-term hypothesis, according to which the ex-dividend share price drop less than the dividend per share provides profit opportunities for the short term traders³³ who capture dividends and eliminate any excess returns on the ex-dividend day. Other studies overcome the problem of ex-dividend day pricing and analyse the changes in the tax regime that affected dividend and capital gains taxation burden.³⁴ To the best of my knowledge, the thesis is the first to simultaneously test all three parts of the literature in Europe.

I analysed the ex-dividend share price behaviour in European countries for the period 1987-2002. My sample consisted of 17,748 event dates. The observations were relatively evenly

³¹ Long-term capital gains are generated when investors hold the assets for longer than six months, one year as of 1999. In this case capital gains carry no tax liabilities.

³² See for example, Elton and Gruber (1970), Heath and Jarrow (1988), Kaplanis (1986)

³³ These are investors who are not subject to differential taxation of dividends and capital gains

³⁴ See for example, Lasfer (1995), Bell and Jenkinson (2001), Michaely (1991)

distributed across years and covered all industries and firm sizes. I employed an event study methodology (Brown and Warner, 1985) to compute the abnormal returns around the ex-dividend day. Results provided evidence to support the taxation effect hypothesis. On day zero the abnormal returns were all positive and significant suggesting that ex-dividend day prices decrease by less than the amount of the dividend in each country. The highest ex-day returns appear to be in France with 1.29 percent ($t = 4.97$), followed by Italy 0.79 percent ($t = 3.95$), and the UK 0.75 percent ($t = 3.56$) and finally, Germany with 0.57 percent ($t = 2.57$). These results are consistent with previous studies.³⁵ Further tests of the share price reaction in the pre- and post-event period [-20, +20 days] showed that in the UK the abnormal behaviour is confined solely on the ex-dividend day.³⁶ In Germany, ex-day returns in the pre- and post-event periods are not randomly distributed. This indicates that in Germany dividend capture is predominant and that ex-day returns may not reflect solely the tax differential between dividends and capital gains. The results for the French market mimic those of the UK.³⁷ In Italy, results are likely to reflect the tax discrimination between dividends and capital gains.³⁸

The study also provided a comparative analysis of the ex-dividend day returns across countries. On average, if ex-day returns are set by higher taxpayers, then ex-day returns should be higher in Germany and France to the remaining countries. In contrast, if ex-day share prices are set by tax exempt investors and/or basic taxpayers, then ex-day returns should be higher in Italy where share prices should fall by the amount of the dividend compared to other countries where share prices should fall by more than the amount of dividends. The ex-day abnormal returns in France were found to be higher by 0.54 percent ($t = 2.64$) than the UK, 0.72 percent ($t = 3.48$) than Germany, and 0.49 percent ($t = 2.29$) in Italy. The ex-day returns in Italy were statistically the same as compared to the UK. Finally, results suggested that in Germany ex-day returns are low and they were likely to underestimate the tax differential between dividends and capital gains.

Further tests of the share price behaviour around the ex-dividend day included the analysis of the abnormal returns according to the dividend yield and the bid-ask spread. Also, regressions of the abnormal returns against the dividend yield, market value, the bid-ask spread and the

³⁵ For example Lasfer (1995) and Bell and Jenkinson (2002) show that ex-day prices decrease significantly less than the amount of dividend in the UK, while Harris et al (1998) show that the imputation credit in Germany is capitalised in share prices.

³⁶ Lasfer (1995) also finds that abnormal returns are confined solely on the ex-dividend day. The results are in contrast with Lakonishok and Vermaelen (1986), Michaely (1991) who find abnormal share price behaviour on the ex-dividend date as well as the days surrounding the event.

³⁷ These results are consistent with Romon (2000).

³⁸ These results do not provide support to Michaely and Murgia (1995) who, despite finding some of the ex-dividend day pricing is tax motivated, conclude that taxes do not explain fully the ex-dividend price drop.

taxation periods³⁹ were conducted. The coefficients of the dividend yield variable appeared to be positive and significant in all the countries. Evidence was not consistent with the short-term hypothesis as the market value coefficients were found to be positive and insignificant. The bid-ask spread coefficients were not found to be significant. Evidence consistent with the taxation effect hypothesis was observed, as the coefficients of the taxation periods significant in all the countries under consideration.

In general, results confirmed that in countries where the differential between dividends and capital gains is high, the ex-date returns are also high. Moreover, I show that ex-day returns are not homogeneous across my sample periods. I find that in each of the four countries under consideration, changes in the tax systems that affect taxes on dividend and/or capital gains alter significantly ex-date returns. The uniqueness of this part of my study is based on its European character. The study adds to the literature because testing the ex-dividend day pricing offers a unique opportunity to compare capital gains (i.e. price drop) to ordinary income (i.e. the dividend). Additionally, comparing the value of investors ascribe to returns in these two forms is important because each is taxed differently. Moreover, the way differential taxation influences the share price has financial consequences for corporations and governments that design tax codes and rely on tax revenues. In sum, the study adds to the literature by providing further evidence on the taxation effects on the ex-dividend day returns. However, I show that some countries are subject to short-term trading and their ex-day returns are lower to reflect the tax differential between dividends and capital gains.

In Chapter 4 I considered the signalling information content of dividends hypothesis, according to which dividends are used as a signalling mechanism to alleviate informational asymmetry between manager (insiders) and shareholders (outsiders).⁴⁰ In general, dividend models posit that dividend announcements transmit information about the future and/or current earnings (prospects of the company) and consequently the changes in the value of the firm around dividend announcements should be proportionate to the changes in dividend policy. The purpose was twofold. I firstly used the event study methodology (Brown and Warner, 1985) to test whether the share price reaction on the dividend announcement day in the UK, Germany, France and Italy for the period 1987 to 2002 is related to the direction of the dividend change announced; and secondly, I distinguished between the effect of dividends and earnings announcements in an attempt to isolate the impact of dividend announcement on the share price reaction and to investigate whether dividends provide information beyond that

³⁹ The dummy variable technique was used in order to assess the impact of taxation regimes on the abnormal returns.

⁴⁰ See Bhattacharya (1979), Miller and Rock (1985), John and Williams (1985).

provided by earnings announcements. To the best of my knowledge this is the first European study to simultaneously analyse and compare the share price reaction to the announcements of dividend increases, decreases, no changes, omissions and initiations.

An imperative motivation for the study of the share price reaction around the dividend announcement day in Europe is the existence of institutional, financial and corporate governance differences between the countries. These differences may result in different country-level information asymmetries between managers (insiders) and the shareholders (outsiders). European countries were categorised according to their corporate governance systems⁴¹ into market-based countries (UK) and bank-based countries (Germany, France and Italy).⁴² Generally, in the Anglo-Saxon system the number of listed companies is large, the process of acquiring control is effectively market oriented and there are a few corporate holding or interlocked patterns of ownership. In such countries information asymmetry problems are high. On the other hand, in Continental European systems, ownership is typically concentrated in a few hands holding large block shares of corporate equity and control rests with corporate insiders. These shareholders may be individuals, family holdings, financial institutions, management, bloc alliances, and conglomerates or cross shareholdings. In such markets information asymmetries are expected to be low. The main argument of this part of my thesis was that if dividends are used as a signalling mechanism to mitigate information asymmetries, then in countries where there is a higher level of information asymmetry between managers (insiders) and shareholders (outsiders), abnormal returns on the announcement dates are expected to be higher than in countries where investors are better informed about the future (and current) prospects of the company.

The results showed that UK managers were more likely to increase dividends (47.3 percent of the sample) and more reluctant to dividend decreases (6.1 percent of the sample). In bank-based countries, managers did not change dividends frequently: in Germany and Italy 53.9 percent of the announcements contained no dividend change and in France no changes amounted to 47.6 percent of the sample. The share price reaction to dividend announcement changes indicated that in the UK investors perceive dividend increases (decreases) as good (bad) news for the future of the company. However, in all three bank-based countries studied, where information asymmetry is lower than in market-based countries, investors perceive dividend increases/initiations as excess internal funding returned to the shareholders because of scarcity of positive net present value investment opportunities. Consequently, there was a

⁴¹ Aivazian, Booth and Cleary (2001) argue that much of the financial theory on which the dividend policy is based, comes from a capital market perspective. This perspective assumes an arms length financing and generates dividend policy implications from models of signalling and information asymmetries.

negative share price reaction around the announcement of dividend increases and initiations. On the other hand, the market reacts positively on the dividend decreases/omissions announcements. This might lead to the conclusion that companies in bank-based countries decrease their dividends in order to use the less costly internal funds to take positive net present value opportunities. Investors in these countries are informed about the prospects of the companies, therefore they would not penalise dividend-decreasing firms and consequently managers do not fear a negative market reaction following such announcements.

Finally, I examined the share price reaction on the dividend announcement dates in relation to dividend and earnings changes.⁴³ In each country under consideration, the sample companies were first grouped according to the content of earnings announcement (increase, decrease, no change) and secondly, within each group I distinguished between dividend increasing/initiating, decreasing/omitting and no change companies. Results showed that dividend announcements provide information beyond of what is provided by earnings announcements. For example, in the UK dividend increasing firms earned statistically higher abnormal returns when the increase in dividends was accompanied by earnings increases. Similarly, the negative share price reaction to dividend decreases was even lower when the dividend decreases were accompanied by earnings decreases. Companies that announced dividend no changes accompanied by earnings increases earned statistically positive abnormal returns; in contrast with earnings decreasing companies that experience negative abnormal returns on the announcement of dividend no changes.

In sum, results provided evidence consistent with the information signalling hypothesis. Also the share price reaction to dividend changes differs between market-based countries and bank-based countries. The differences lead to the need for further research in the area in order to test whether for example companies that announce earnings increases accompanied by dividend decreases, increase their capital expenditure in the years following such announcements. In this case, the dividend decrease would be attributed solely to the need for costless funds in order to finance new positive net present value investment opportunities.

In Chapter 5 I investigated the agency conflict hypothesis by analysing the share price behaviour around the dividend announcement day in the UK, Germany, France and Italy for

⁴² See Frank and Mayers (1994, 1997), Zysman (1983), Berglof (1988, 1990)

⁴³ In a cross-country comparative study, it is important to isolate the impact of dividend announcements because of different timing in dividend and earnings announcements in each country. For example, in the UK and France dividends and earnings are generally announced simultaneously, while in Germany and Italy earnings announcements precede dividend announcements. This means that in Germany and Italy, investors are already informed about the performance of the company when dividends are announced therefore, the share price reaction may be lower.

the period 1987 to 2002. This hypothesis, questions two of the Miller and Modigliani (1961) assumptions. Firstly, the assumption of independence between dividend policy and investment decisions of the firm; and secondly, the assumption that managers' interests are aligned with those of shareholders so that any profits are distributed pro-rata to all shareholders. With the separation of ownership and control, a principal (shareholder)-agent (manager) problem⁴⁴ occurs which, reflects the possibility that managers pursue their own goals (mainly, through investing in negative net present value projects) at the expense of the shareholders. According to the agency conflict hypothesis dividends reduce agency conflicts by eliminating free cash flow in the possession of the management and therefore eliminating the possibility of managers pursuing their own goals.⁴⁵ In line with the information signalling hypothesis, the agency conflict hypothesis predicts a positive relationship between the dividend announcement day share price reaction and the direction of dividend change.⁴⁶ Lang and Litzenberger (1989) distinguish between the two hypotheses with respect to the level of growth opportunities faced by the firm. They use the Tobin's Q ratio to distinguish between overinvesting (Tobin's $Q < 1$) and value maximising (Tobin's $Q > 1$) firms. They find that the announcements of sizable dividend changes have a significant impact on the stock price of overinvesting firms, but no impact for value maximising firms.

In respect to the levels of agency conflicts the sample countries were grouped into market-based countries (UK) and bank-based countries (Germany, France and Italy). The level of agency conflicts in the UK companies was perceived to be higher than in their German, French and Italian counterparts. This is due to the distinguishing features of the UK outsider model which are the dispersed equity ownership with large institutional holdings and extensive dependence on the capital markets. On the other hand, in bank-based countries agency conflicts are lower due to higher ownership concentration with extensive individual or family, bank and inter-corporate holdings. In such a case there is a less active equities market and less of a market corporate control. Governance and monitoring of the firm's performance take on more of an insider form, with representatives banks (for example, in Germany) and/or of families (for example, the Angeli's in Italy) and/or other firms sitting on the company's board (for example, in France). Differences between countries have also been observed in respect to the level of growth opportunities. La Porta and Silanes (1998), report the average annual percent growth per capital gross domestic product (GDP) for the period 1970-1993 in different countries around the world. They show that in the UK growth opportunities are lower than in the other sample countries. Managers in countries with low opportunities are

⁴⁴ See Jensen and Meckling (1976) for a detailed discussion on the agency conflict resulting from the separation of ownership and control.

⁴⁵ Theoretical evidence provided by Easterbrook (1984) and Jensen (1984)

more likely to invest in negative net present value projects. Therefore, agency conflicts in the UK are expected to be higher than in Germany, France and Italy.

The purpose was to test whether the relationship between the market reaction to dividend changes and firm growth opportunities is stronger in market-based countries. I followed Lang and Litzenberger (1989) for the purpose of testing my hypothesis and to distinguish between the predictions of the signalling and overinvestment hypotheses. My study extends Lang and Litzenberger (1989) not only because of its European comparative character, but also because I consider in addition to dividend increase and decrease announcements, the announcements of no changes, initiations and omissions. I deviate from Lang and Litzenberger and I use the market-to-book ratio in order to distinguish between overinvestment (low market-to-book) and value maximising (high market-to-book) firms.

I used the abnormal returns around the dividend change announcements as calculated in Chapter 4. In each country I considered all five dividend change groups (i.e. increases, decreases, no changes, initiations and omissions) and I further distinguished between value maximising and overinvesting firms. I investigated the share price reaction to dividend change announcements on the event day 0 as well as on days -1 to +1. Results provided not enough evidence to accept the overinvestment over the signalling hypothesis. In the UK, abnormal returns on the announcement of dividend increases/initiations (decreases/omissions) for value maximising and overinvestment firms are significantly positive (negative). In Germany, value maximising firms earned negative (positive) abnormal returns on the announcement of dividend increases (decreases); while, overinvesting firms earned positive (negative) abnormal returns on the announcement of dividend increases (decreases). In France, value maximising firms experienced positive returns on the announcement of dividend increases and decreases; while overinvestment firms experienced positive (negative) returns on the announcement of dividend increases (decreases). However, in all the countries under consideration the abnormal returns difference between value maximising and overinvesting firms did not appear to be statistically different from zero. Moreover, the abnormal return differences between the dividend change groups were not significant.

In order to observe the differences in abnormal returns between European countries, I also provided cross-country comparisons. Results provided were interesting. In the UK both value maximising and overinvesting firms experienced significantly higher abnormal returns on and around the dividend change announcements, as compared to their counterparts in bank-based

⁴⁶ See for example, Rozeff (1982)

countries. The differences between bank-based countries did not prove to be statistically different from zero.

Evidence in this part of my study provided results consistent with both the information signalling and agency conflict hypotheses. Further tests of the share price reaction on and around the dividend announcement changes do not provide evidence strong enough to accept the agency conflict hypothesis over the signalling hypothesis. However, further research in the area is required in order to derive concrete conclusions.

STUDY LIMITATIONS AND FURTHER RESEARCH IN THE AREA

The results of the study are based on a sample period from August 1987 to August 2002. Maybe companies have different dividend policy behaviour in other periods. Also, due to time constraints, I limit my study to the analysis of cash dividends. A future development of the study could be to analyse other forms of dividend payouts, such as share repurchases or stock dividends.

A major limitation of the study is the fact that data on the share ownership structure is not available. After considerable research, I was able to obtain an indication of the ownership structures in the four countries under consideration, but unfortunately data is not disaggregated enough to show what percentage of the equity capital each class of investor owns. For example, managerial ownership would provide a good indication of the information asymmetry and agency conflicts. Moreover, data indicating the percentage of equity capital each taxpayer owns would prove useful to distinguish between high, basic and low tax bracket investors when analysing the ex-dividend share price behaviour. In the future it would be interesting to focus more on the UK pension funds before and after 1997, for example. However, there is no data on machine readable form for each individual company listing (i.e. companies with pension funds and companies with no pension funds).

In the calculation of the tax discrimination variable I used the basic taxation rates. A more accurate calculation of the tax discrimination variable could be achieved by engaging the effective taxation rates, and by considering the various allowances and relief both at the company level and at an individual level.⁴⁷ This is to say, firstly that capital gains may not only face a lower statutory rate than dividends, but are also typically taxed upon realisation, not on accrual and secondly effective income and corporation taxation rates are lowered by

⁴⁷ For this purpose an analysis software tool has been developed, the European Tax Analyser which, simulates the assessment of a representative firm taking into account all relevant taxes, their interaction and special features of

allowances and remunerations. It has been proven difficult to calculate at the present stage of my study.

Another limitation of my thesis is that I do not consider the microstructure effects as an explanation to the ex-dividend price movements. The price drop by less than the amount of dividend on the ex-dividend day could be related to discreteness in prices rather than taxes (Bali and Hite, 1998) or to the bid-ask bounce (Frank and Jagannathan, 1998).

The effectiveness of corporate governance systems in mitigating information asymmetries cannot be generalised.⁴⁸ More accurate measures of information asymmetries are proposed by Krishnaswami and Subramanian (1999) who use three different measures of information asymmetry based on the analyst's earnings forecasts. Data should report forecasts for each firm based on the analyst's earnings estimates. Krishnaswami and Subramanian (1999), and Christie (1987) firstly use the forecast errors in earnings measured as the ratio of the absolute difference between the forecast earnings and the actual earnings per share (EPS) to the share price at the beginning of the dividend announcement month. Higher forecast errors are expected to indicate higher informational asymmetry between managers and outside investors.⁴⁹ Secondly, the standard deviation of forecasts, measured as the standard deviation of the last earnings forecasts preceding the dividend announcement could be used as a proxy for information asymmetries. This variable represents the dispersion among analysts about a consensus estimate of the forecast. Since disagreement amongst analysts is an indication of the lack of available information about the firm the standard deviation of forecasts is another metric of the level of information asymmetry about the firm. In order to overcome criticism of the use of forecast errors⁵⁰ as a measure of information asymmetry and control for the correlation between forecast errors and earnings volatility, Krishnaswami and Subramanian (1999) propose a third measure of information asymmetry, that is, the normalised forecast error defined as the ratio of the forecast error in earnings to the earnings volatility of the firm

the tariffs such as tax credit and reduced tax rates. Unfortunately, the software was impossible to obtain due to high costs.

⁴⁸ See Halpern (1999) and Jovanovic (2001)

⁴⁹ Elton, Gruber and Gultekin (1984) argue on the appropriateness of forecast errors as a proxy for information asymmetry. They provide a detailed analysis of the forecast errors in the earnings of a wide cross-section firms. They examine the size, pattern and source of these errors by partitioning them into errors derived from mispredicting economy-wide factors, industry-wide factors and firm-specific factors. They show that the errors decrease as the predictions get closer to the end of the fiscal year and find that nearly 84 percent of the forecast error in the final month can be attributed to misestimation of firm-specific factors rather than to misestimation of economy or industry factors. Moreover, Ang and Ciccone (2001) argue that if there is reliable and relevant information available about the firm, the ability of the analysts to predict the future performance should be enhanced.

⁵⁰ Some firms may have higher forecast errors because they have more volatile earnings and not because they have higher levels of information asymmetry.

(earnings volatility is the standard deviation of the firm's earnings in the five year period before the event announcement).

Literature has to offer more explanations to the dividend policy relevance, which are not considered in my thesis. For example, transaction costs, flotation costs, and irrational investor behaviour. Lease, Kalay, Loewenstein and Sarig (2000) view these frictions as relatively minor in the total scheme of imperfections. Although the theoretical and empirical finance literature devotes relatively little attention to the first two frictions, a growing body in the literature exists on the behavioural explanations for dividend policy relevance. For example, Shefrin and Statman (1984) present a behavioural framework explaining why some investors want to receive cash dividends. This framework is based on the theory of self control presented by Thaler and Shefrin (1981) and the theory of choice under uncertainty described by Kahneman and Tversky (1979). Miller and Shiller (1986) argue that introducing behavioural elements to explain dividend policy is natural because many anomalies appear in dividend policy. Frankfurter and Lane (1984) describe several behavioural economic theories of dividends. One involves theories of habits (non-random behaviour based on past experience), which may reflect cultural and societal factors rather than rational economic behaviour.

Finally, the literature has not offered a complete model of dividend policy that would have allowed me to test all these factors simultaneously. In the last Chapter of my thesis, I offered a joint test of the information signalling and free cash flow hypotheses. However, it was not possible to include the tax and other determinants of dividend policy into the model. Similarly, in Chapter 4, I tested for the joint impact of earnings and dividend signalling but the other hypotheses were not incorporated.

The extent to which these factors affect my results is a matter of further research. The results of my thesis suggest that European firms follow different dividend policies because of differences in the taxation and corporate governance systems, as well as, in the financial and institutional characteristics. Furthermore, the impact of these factors on their dividend policies is different across the countries. It is therefore, imperative for investors, managers, and policy makers to fully understand the unique taxation, financial, institutional and corporate governance factors that affect the dividend policy in various countries. However, much work remains to better understand different corporate dividend policies across countries. I would characterise my thesis as the start of testing the dividend policy in European countries.

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APPENDICES

APPENDIX 1. THE MILLER AND MODIGLIANI DIVIDEND IRRELEVANCE THEOREM PROOF

Let $d_{j,t}$ be to equal the dividend per share paid by the firm j during period t , $P_{j,t}$ the share price and then the Return in period t would be equal to:

$$R_t = \frac{(d_{j,t} + P_{j,t+1} - P_{j,t})}{P_{j,t}} = \frac{(d_{j,t} + P_{j,t+1})}{P_{j,t}} - 1$$

Rearranging,

$$P_{j,t} = \frac{(d_{j,t} + P_{j,t+1})}{1 + R_t}$$

This equation can be restated in terms of the firm rather than the value of an individual share so one can drop the j subscript. The value of the firm, V_t , would be equal to the number of shares at the beginning of period t , N_t , multiplied by P_t ; i.e. $V_t = N_t P_t$, alternatively

$$V_t = \frac{(N_t d_t + N_t P_{t+1})}{1 + R_t}$$

while the total dividends paid during t would be equal to $D_t = N_t d_t$. Given the level of firm's investment, I_t , the total net profit would be equal to $X_t - D_t$ where X_t is the cash flow generated from existing projects. If m_{t+1} is the new shares (if any) sold during t , at the ex-dividend closing price P_{t+1} such that $N_{t+1} = N_t + m_{t+1}$, then $m_{t+1} P_{t+1} = I_t - (X_t - D_t)$ and

$$V_t = \frac{D_t + V_{t+1} - m_{t+1} P_{t+1}}{1 + R_t} = \frac{X_t - I_t + V_{t+1}}{1 + R_t}$$

Since D_t does not appear directly among the arguments and since X_t , I_t , V_{t+1} and R_t are all independent of D_t it follows that the current value of the firm must be independent of the current value dividend decision. MM concluded that dividend policy does not matter when dealing with firm valuation. Therefore, the company should pay dividends according to the preferences of the clientele who invests in the company. In the MM model, the market value of equity is determined by the firm's investment in new projects I_t , and the cash flow generated from the existing projects X_t .

Moreover, it should be noted that this analysis implicitly assumes 100 percent equity financing. It can be extended straightforwardly to include debt financing. In this case, debt issues as well as equity issues can finance dividends. The choice between debt or equity financing does not affect the value of the firm, since capital markets are perfect and complete.

APPENDIX 2. FINDINGS OF EMPIRICAL RESEARCH VIS-À-VIS THE THREE HYPOTHESES OF DIVIDEND POLICY

<u>RESEARCH STUDIES</u>	DIVIDEND TAXATION HYPOTHESIS		SIGNALING HYPOTHESIS		AGENCY HYPOTHESIS	
	Accept	Reject	Accept	Reject	Accept	Reject
Aharony and Swary (1980)			✓			
Ambarish, John and Williams (1987)			✓			
Bell and Jenkinson (2001)	✓					
Benartzi, Michaely and Thaler (1997)		✓				
Bernheim and Wantz (1995)			✓			✓
Bhattacharya (1979)			✓			
Christie (1994)			✓			✓
De Angelo, De Angelo and Skinner (1996)		✓				
Denis, Denis and Sarin (1994)	✓		✓			✓
Dewenter and Warther (1998)			✓		✓	
Dhillon and Johnson (1994)					✓	
Downes and Heinkel (1982)				✓		
Eades, Hess and Kim (1984, 1994)		✓				
Easterbrook (1984)					✓	
Elton and Gruber (1970)	✓					
Jensen (1986)					✓	
Jensen and Johnson (1995)		✓				
John and Williams (1985)			✓			
Kalay (1982)		✓				
Kao and Wu (1994)			✓			
Karpof and Walking (1988)		✓				
La Porta, Silanes, Shleifer and Vishny (2000)					✓	
Lakonishok and Vermaelen (1986)		✓				
Lang and Litzenberger (1989)				✓	✓	
Lasfer (1995, 1996)	✓					
Long, Malitz and Sefcik (1994)						✓
Manuel, Brooks and Schadler (1993)			✓			
Menyah (1993)		✓				
Michaely (1991)	✓					
Miller and Rock (1985)			✓			
Morgan and Thomas (1998)		✓				
Penman (1983)			✓			
Petit (1972)			✓			
Poterba and Summers (1985)	✓					
Smith and Watts (1992)					✓	
Williams (1988)			✓			
Yoon and Starks (1995)						✓

APPENDIX 3: THE UK, GERMAN, FRENCH AND ITALIAN TAX RATES

APPENDIX 3.1 The UK Tax Rates for the Period 1986-2001

INCOME TAXATION RATES

YEAR	LOWER BAND	BASIC BAND	HIGHER BAND	YEAR	LOWER BAND	BASIC BAND	HIGHER BAND
1986-87		29%	40%-60%	1993-96	20%	25% ¹	40%
1987-88		27%	40%-60%	1996-97	20%	24% ²	40%
1988-89		25%	40%	1997-98	20%	23% ²	40%
1989-90		25%	40%	1998-99	20%	23% ²	40%
1990-91		25%	40%	1999-00	10%	23% ³	40% ⁴
1991-92		25%	40%	2000-01	10%	22% ³	40% ⁴
1992-93	20%	25%	40%				

Source: Inland Revenue, Appendix A2

¹ The basic rate of tax on dividend income is 20 percent

² The basic rate of tax on dividends and savings income is 20 percent

³ The basic rate on dividends is 10 percent

⁴ The higher rate of tax on dividends is 32.5 percent

CAPITAL GAINS TAX RATES

YEAR	ANNUAL EXEMPT AMOUNT	RATE	YEAR	ANNUAL EXEMPT AMOUNT	RATE
1986-87	6300	30%	1996-97	6300	ITR
1987-88	6600	30%	1997-98	6500	ITR
1988-91	5000	Income Tax Rates (ITR)	1998-99 ¹	6800	ITR
1991-92	5500	ITR	1999-00	7100	ITR
1992-95	5800	ITR	2000-01	7200	ITR
1995-96	6000	ITR			

Source: Inland Revenue

¹ From 1998-99 onwards, taper relief may reduce the proportion of gains chargeable according to the years the asset is held

CORPORATION AND ADVANCED CORPORATION TAX RATES

YEAR	CT MAIN RATE	MARGINAL RELIEF	ACT	YEAR	CT MAIN RATE	MARGINAL RELIEF	ACT
1986-87	35%	3/200	29/71	1994-95	33%	1/50	20/80
1987-88	35%	1/50	27/73	1995-96	33%	1/50	20/80
1988-89	35%	1/40	25/75	1996-97	33%	9/400	20/80
1989-90	35%	1/40	25/75	1997-98 ¹	31%	1/40	20/80
1990-91	34%	9/400	25/75	1998-99	31%	1/40	20/80
1991-93	33%	1/50	25/75	1999-00	30%	1/40	----
1993-94	33%	1/50	9/31	2000-01	30%	1/40	----

Source: Inland Revenue, Appendix A6

¹ ACT abolished on 6 April 1999 for pension funds

APPENDIX 3.2 The German Tax Rates for the Period 1986-2002

CORPORATION TAX RATES FOR THE PERIOD

YEAR	CT ON RETAINED EARNINGS	CT ON DISTRIBUTED EARNINGS	SOLIDARITY CHARGE	LOCAL TAXES
1986-1990	56%	50%		
1990-91	50%	46%		
1991-1992	50%	46%	3.75%	
1992-1994	50%	46%		
1994-1995	45%	42%		
1995-1998	45%	42%	7.5%	
1998-2002	40%	30%	5.5%	13%-20%

INCOME AND CAPITAL GAINS TAX RATES

YEAR	HIGHER TAX PAYER	BASIC TAX PAYER	CAPITAL GAINS TAX	
			Short-Term	As Income Tax
			Long-Term (12 months)	Tax Exempt
1986-1990	56%	22%		
1991-1994	53%	19%		
1995-2002	51%	19%		
			IMPUTATION CREDIT	
			Pre-1994	36%
			Post-1994	30%

APPENDIX 3.3 The French Tax Rates for the Period 1986-2001

INCOME TAX RATES

YEAR	INCOME IN MILLION FRANCS	RATE %	YEAR	INCOME IN MILLION FRANCS	RATE %	
1986-88	Up to 21 900	0	1995-96	Up to 21 610	0	
	Up to 47 900	12		Up to 49 440	12	
	Up to 84 300	25		Up to 87 020	25	
	Up to 136 500	35		Up to 140 900	35	
	Up to 222 100	45		Up to 229 260	45	
	Up to 273 900	50		Up to 282 730	50	
	Over 273 900	56.8		Over 282 730	56.8	
1989-1991	Up to 21 900	0	1996-97	Up to 21 610	0	
	Up to 47 900	12		Up to 49 440	12	
	Up to 84 300	25		Up to 87 020	25	
	Up to 136 500	35		Up to 140 900	35	
	Up to 222 100	45		Up to 229 260	45	
	Up to 273 900	50		Up to 282 730	50	
	Over 273 900	56.8		Over 282 730	56.8	
1991-92	Up to 21 900	0	1997-98	Up to 21 610	0	
	Up to 47 900	12		Up to 49 440	12	
	Up to 84 300	25		Up to 87 020	25	
	Up to 136 500	35		Up to 140 900	35	
	Up to 222 100	45		Up to 229 260	45	
	Up to 273 900	50		Up to 282 730	50	
	Over 273 900	56.8		Over 282 730	54	
1993-94	Up to 21 900	0	June 1997	Over 282 730	54	
	Up to 47 900	12		1998-1999	Up to 26 100	0
	Up to 84 300	25			Up to 51 340	10.5
	Up to 136 500	35			Up to 90 370	24
	Up to 222 100	45			Up to 146 320	33
	Up to 273 900	50			Up to 238 080	43
	Over 273 900	56.8			Up to 293 600	48
1994-1995	Up to 21 210	0	Over 293 600		54	
	Up to 48 570	12	1999-2001	Up to 26 600	0	
	Up to 85 480	25		Up to 52 320	8.25	
	Up to 138 410	35		Up to 92 090	21.75	
	Up to 225 210	45		Up to 149 110	31.75	
	Up to 277 730	50		Up to 242 620	41.75	
	Over 277 730	56.8		Up to 299 200	47.25	
				Over 299 200	53.25	

CAPITAL GAINS TAX RATES AND AVOIR FISCAL

CAPITAL GAINS		AVOIR FISCAL	
YEAR	RATE %	YEAR	RATE %
1986-December 1998	16% +3.9% Social Contribution	1986-1993	50 %
January 1999	As Income		
		1993 ONWARDS	100%

NOTE: For the Corporation Taxation Rates see Text Section 2.4.3

APPENDIX 3.4 The Italian Tax Rates for the Period 1986-2001

INCOME TAX RATES

YEAR	INCOME IN MILLION LIRAS	RATE	YEAR	INCOME IN MILLION LIRAS	RATE
1986-88	Up to 6	12%	1992-1998	Up to 7.2	10%
	Up to 11	22%		Up to 14.4	22%
	Up to 28	27%		Up to 30	27%
	Up to 50	34%		Up to 60	34%
	Up to 100	41%		Up to 150	41%
	Up to 150	48%		Up to 300	46%
	Up to 300	53%		Over 300	51%
	Up to 600	58%		1998-1999	Up to 15
Over 600	62%	Up to 30	26.5%		
1989-1991	Up to 6	10%	Up to 60		33.5%
	Up to 12	22%	Up to 135		39.5%
	Up to 30	26%	Over 135	45.5%	
	Up to 60	33%	1999-2001	Up to 20	18.5%
	Up to 150	40%		Up to 30	25.5%
	Up to 300	45%		Up to 60	33.5%
	Up to 300	50%		Up to 135	39.5%
	1991-92	Up to 6.8	10%	Over 135	45.5%
Up to 13.5		22%	IMPUTATION TAXATION CREDITS: 1986-1997: 56.25% 1998-2001: 58.73%		
Up to 33.7		26%			
Up to 67.6		33%			
Up to 168.8		40%			
Up to 337.7		45%			
Over 337.7		51%			

CAPITAL GAINS TAX RATES

Before 1991:	Income Tax Rate
From 1991:	Ordinary tax rate or, at taxpayer's option, substitutive tax with the following rates: <ul style="list-style-type: none"> • 25% when capital gains derives from the alienation of "Qualified" participation¹ • 15% when the capital gains derives from alienation of other participations²
From 1 July 1998:	<ul style="list-style-type: none"> • 27% if the participation sold is "Qualified"³ • 12.5% in all other cases

¹ Participation rates: 2% of the capital for listed companies, 5% for the non-listed companies, 10% for partnerships

² Tax base is equal to 7% of the price of the sale

³ 2% of the voting power or 5% of the capital for listed companies, at least 20% of the voting power or 25% of the capital from non-listed companies

TABLE ITALY CORPORATION TAX RATES

YEAR	CT RATE	ILOR
1986-1994	36%	16.2%
1995-2001	37%	16.2%

SOURCE: I am grateful to the European Federation of Accountants for providing me with the Italian Taxation Rates

APPENDIX 4: ILLUSTRATION OF THE EUROPEAN IMPUTATION SYSTEMS

(Based on 1998 Taxation Rates)

APPENDIX 4.1 The UK Partial Imputation System

PANEL A: CORPORATION LEVEL			
Taxable Income	100		
Corporation Tax ($T_c = 31\%$)	(31)		
Profit After Tax	69		
Advanced Corporation Tax (20%)	17.25		
Grossed Up Dividend	86.25		
Mainstream Company Tax Liability (31-17.25)	13.75		
PANEL B: SHAREHOLDER LEVEL			
	TAX EXEMPT	BASIC TAXPAYER (20%)	HIGHER TAXPAYER (40%)
Cash Dividend Received	69	69	69
Imputation Credit (tax already paid at the company level)	17.25	17.25	17.25
Taxable Dividend Income	86.25	86.25	86.25
Personal income Tax	(0)	(17.25)	(34.75)
Dividend Tax Credit	17.25	17.25	17.25
Personal Tax Liability	-17.25	0	17.25
NET DIVIDEND RECEIVED	86.25	69	51.5

Source: Own Calculations

APPENDIX 4.2 The German Full Imputation System

PANEL A: CORPORATION LEVEL		PROFIT RETENTION	PROFIT DISTRIBUTION
Taxable Income		100	100
Trade Tax on Income (16% average Tax Rate ¹)		(16)	(16)
Corporation Tax ($T_c = 40\%$)		(33.60)	(33.60)
Reduction of T_c to 30% on distributed profits		--	8.40
Solidarity Charge		(1.85)	(1.39)
Income After Taxes		48.55	57.41
Dividends		--	57.41
Withholding Tax ($T_w = 25\%$)		--	(14.35)
Solidarity Charge (5.5%)		--	(0.79)
Dividends to Shareholders		--	42.27
PANEL B: SHAREHOLDER LEVEL		TAX EXEMPT	BASIC TAXPAYER (24%)
			HIGHER TAXPAYER (53%)
Individual Shareholder Dividend		42.27	42.27
Credible Corporation Tax (9/16 of 57.41)		30.40	30.40
Total Taxable Income		72.67	72.67
Individual Income Tax		-	(13.58)
Dividend Tax Credit		-	14.35
<i>Total</i>		56.62	57.39
Reimbursement to Shareholder		14.35	0.77
			-15.65

Source: Doing Business in Germany, 1998, BDO International and Own Calculations

¹The trade tax on income rates vary between 14% and 20% depending on the municipality

APPENDIX 4.3 The French Full Imputation System

PANEL A: CORPORATION LEVEL			
Taxable Income	100		
Corporation Tax (33.33%+3.33%)	(36.66)		
Profit After Tax	63.34		
Avoir Fiscal (40% on 63.34)	25.33		
Grossed Up Dividend	88.67		
Corporation tax on Gross Dividends (36 2/3 %)	32.5		
Avoir Fiscal	25.33		
Tax Payable	7.11		
Net Dividend Distributed	56.17		
PANEL B: SHAREHOLDER LEVEL			
	TAX EXEMPT	BASIC TAXPAYER (35%)	HIGHER TAXPAYER (5%)
Dividend Received	56.167	56.167	56.167
Avoir Fiscal	25.33	25.33	25.33
Taxable Income	-	81.50	81.50
Personal Income Tax	-	28.5	46.3
Avoir Fiscal already paid	-	(25.33)	(25.33)
Net Tax Liability	-	3.18	20.95
NET DIVIDEND RECEIVED	81.497	52.98	35.20

Source: Doing Business in France, 1998, BDO International and Own Calculations

APPENDIX 4.4 The Italian Full Imputation System

PANEL A: CORPORATION LEVEL					
Profits	100				
Local Tax (ILOR =16.2%)	(16.20)				
Earnings Subject to National Taxes	83.80				
National Tax (IRPEG=36%)	(30.17)				
Net Earnings Available to Shareholders	53.63				
PANEL B: SHAREHOLDER LEVEL	Individual Investor 20% (Lower) Tax Bracket	Individual Investor 36% (Basic) Tax Bracket	Individual Investor 50% (Higher) Tax Bracket	Corporate Investor	Mutual Funds
Cash Dividend	53.63	53.63	53.63	53.63	53.63
10% Withholding Tax	(5.36)	(5.36)	(5.36)	(5.36)	(5.36)
Net Dividend Received	48.27	48.27	48.27	48.27	48.27
Personal Tax	(16.76)	(30.17)	(41.90)	(30.17)	-
Recovery of Tax Credit	30.17	30.17	30.17	30.17	-
Recovery of Withholding Tax	5.36	5.36	5.36	5.36	-
EFFECTIVE DIVIDEND	67.04	53.63	41.90	53.63	48.27
Tax Credit or Net Tax	18.77	5.36	(6.37)	5.36	(5.36)

Source: Michaely and Murgia (1995)

¹ In 1997 the rate of IRPEG was 37percent and the rate of ILOR was 16.2percent. In 1977 ILOR was made deductible from IRPEG. In 1991 the deductibility was reduced to 75percent and in 1993 totally abolished.

² On the sum of Gross Dividend (53.63) plus Tax Credit (56.25percent of 53.63 = 30.17)

APPENDIX 5: THE DIVIDEND TAX CREDIT IN GERMANY

SOURCE: McDonald (2001)

Dividend Tax Credit Mechanism. Suppose that a company has pre-tax income of x and is taxed at rate t_c . This leaves $x(1-t_c)$ to distribute. Suppose this amount is paid as dividend. The dividend tax credit gives shareholders a credit for taxed already paid by the corporation. This is accomplished by giving shareholders a fractional credit of $(t_c / 1-t_c)$ on the cash amount of the dividend. Net of all taxes, the shareholder receives $[x-(1-m)]$, which is equivalent to having pre-tax corporate income taxed at the shareholder's tax rate, m . However, the foreign shareholder receives $[x-(1-t_c)]$ pre-tax and receives no tax credit. Gross dividend is equal to the net dividend $[x(1-t_c)]$ plus the tax credit.

Cash Dividend Paid:	$x (1-t_c)$
Dividend Tax Credit:	$x (1-t_c)(t_c/1-t_c) = xt_c$
Taxable Income:	$x (1-t_c) + xt_c = x$
Personal Income Tax at m:	$x m$
Dividend Plus Credit Less Tax:	$x (1-t_c) + xt_c - xm = x (1-m)$

§36 of the German Income Tax Law. §36 Addresses stock-lending transactions. If German resident A lends stock to German resident B, B can take the dividend tax credit. However, if the lender is not a German resident, B can take the tax credit only on the pro rate amount by which the gross dividend exceeds lending fees. Since lending fees will always include at least the net dividend, this reduces the ability of the German resident to use the tax credit if the lender is foreign.

Simple stock loans are rendered unprofitable by these rules. For example, consider a stock loan around the ex-date for a company that pays 100 units of dividend. Suppose the German borrower agrees to pay the lender 120 units. Under §36, the German borrower would be able to use only the fraction $(142.86-120)/142.86$ of the tax credit. The German borrower would therefore receive only $[100+42.86(22.86/142.86)]=106.86$, while paying 120.

Let k be the tax credit rate and γk the fraction of the credit paid by the borrower to the lender in a stock loan. If a German investor borrows the stock at rate γk to earn the tax credit k , the borrower profit is:

$$k \frac{1+k-(1+\gamma k)}{1+k} - \gamma k$$

This is positive only if γ , the fraction of the credit paid to the lender, is less than $[k/(1+2k)=0.2308]$. The lender must therefore be paid no more than 1.0989 of the net dividend.

§50c of the German Income Tax Law. This section disallows in some circumstances the tax deductibility of capital losses due to the payment of a dividend.¹ The loss is always disallowed if the shares are not acquired on an exchange. If shares are exchange traded, since 1994 the loss is disallowed if (i) the shares are not held for at least 10 days, or (ii) if the market risk of the position is limited (e.g. the position is hedged). In addition, capital losses attributable to a dividend are always non-deductible if the stock is acquired other than by exchange trading.

APPENDIX 6: THE DEFINITION OF DIVIDENDS FOR TAX PURPOSES IN FRANCE

SOURCE: Word Tax Advisor, International Tax Developments, Deloitte Touche Tohmatsu, February 2002

On 28th December 2001, the French tax authorities published an Instruction that provides a restrictive definition of dividends for certain tax purposes and limits the scope of the Avoir Fiscal, i.e. the tax credit attached to French-source dividends. The new definition and the new rules apply to income received during 2001 for companies whose fiscal year ends on or after 21 December 2001.

The French Tax Code contains a very broad definition of “distributed income” for tax purposes; for example, profits that are not booked in reserves or any amounts lent to a shareholder fall within the definition. Before the recent Instruction, the tax authorities considered as dividends only amounts that were attributed to all shareholders in proportion to their shares in the capital of the company and distributed following a legitimate decision made under company law.

The Instruction restricts the scope of distributions that are considered to be dividends for purposes of the avoir fiscal and the précompte to:

- Distributions decided on at the annual shareholder meeting (i.e. the meeting approving the accounts) that are in line with the civil and commercial rules applicable to dividends, and
- Interim dividends decided by the competent body of the company.

According to this more restrictive interpretation, the following are no longer considered dividends and, thus, do not give rise to the avoir fiscal or the précompte:

- Distributions of reserves decided other than by the annual shareholder meeting;
- Distributions or prepayments of liquidation bonuses, and
- Payments arising from a reduction of share capital or acquisition of one’s own shares.

¹ The notion of a loss “due to payment of a dividend” is ambiguous since one could in theory impute a loss whatever the actual change in the stock price, and use this imputed loss to adjust the basis of the position. For example, if there were 1 unit of dividend, it would be reasonable to impute a capital loss in the range of (1-1.4286) units. In practice, however, the restriction binds only if there is an actual loss on the stock. Thus if a dividend were paid and the share price happened to rise, the investor would receive the full credit.

Under the new Instruction, in the case where a shareholder meeting decides on an exceptional distribution of a significant amount out of distributable reserves, that distribution is not a dividend but rather a partial liquidation of assets. Consequently, the shareholders are not entitled to the *avoir fiscal* and no *précompte* liability arises for the company.

Although the Instruction restricts the dividend definition, it provides opportunities when structuring an acquisition. Under the French participation exception, a parent company is not taxable on income distributed by a subsidiary. At the same time, the *avoir fiscal* received by the parent company could not be utilised to pay the corporate income tax due by the parent. Thus, until before the new Instruction, if a subsidiary made a distribution out of “old” reserves, the subsidiary was required to pay the *précompte* but the parent could not offset the *avoir fiscal* against its own corporate income tax liability. Under the new rules, a parent company will be able to receive distributions of “old” reserves from its subsidiaries without any *précompte* having to be paid by the subsidiary. Consequently, the new rules are essentially beneficial to parent companies that do not intend to pass on to their shareholders income received from their subsidiaries. These restrictions in the Instruction are also applicable to non-residents. Some of France’s tax treaties specifically provide for the transfer of the *avoir fiscal* to certain non-resident recipients according to the same rules that apply when the *avoir fiscal* is granted to French residents.

Although the instruction does not specifically refer to withholding tax on dividends, it would appear that the Instruction’s restrictive dividend definition would sometimes have relevance for the purposes of reduced withholding tax rates under France’s tax treaties (or the exemption from withholding tax under the EU parent/subsidiary directive). In the case where the treaty defines dividends as “income treated as a distribution by the tax laws of the state in which the company making the distribution is resident”, the broader treaty definition will prevail. In such cases, the reduced rate of withholding tax will apply to any “distributed income” and will not be restricted only to “dividends”.

The investigation of the consequences of this new Instruction on the dividend policy of the French companies is beyond the scope of the present PhD study. However, this constitutes an interesting subject of further research, as it would be particularly interesting to investigate the effect of this new Instruction on the dividend policy of the French Companies. One way to precede this proposed study could be to group a number of French companies according to their shareholding structure and compare the dividend policy before and after 31st December 2002 both in an intra- and inter-group level. If taxation is a determinant of the dividend policy of the firm, then it should be expected that in the after- the new Instruction period companies would restrict their sources of dividend payouts within the scope of the new definition in order for the shareholders to be entitled to the *avoir fiscal*.