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Taxes, Earnings Payout, and Payout Channel Choice

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Abstract

We study the tax regulations in relation to dividends and capital gains over the last two decades for the UK in order to determine whether changes in tax regimes affect corporate payout policy (dividends, share repurchases, or a combination). While we can identify investors' tax-driven preferences for a specific payout channel, we find no evidence of tax-induced clienteles. Firms do indeed not cater to the tax preferences of their shareholders (including individuals, pension funds, corporations). Other factors, such as equity- based compensation received by the CEO and investor sentiment in the form of optimism reduce the dividend payout and increase the use of share repurchases.

Keywords: payout policy, dividends, share repurchases, taxation, regulation

JEL Classifications: G28, G30, G35, G38

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'*But in the real world there remains one overwhelming reason why dividend policy is not irrelevant: tax. The way dividends are taxed can have wide-ranging consequences for how a firm is run. In particular, it can influence whether a firm finances itself primarily through equity or debt, and how it chooses to return profits to its shareholders.'* (The Economist, 9th January, 2003)

'I*n Britain Gordon Brown staged an infamous pensions tax "grab" in 1997, which reduced private pension funds' income by around £5 billion (then $8.4 billion) a year by eliminating the tax credit on dividend payments.' (*The Economist, 2nd December 2010)

'*In America dividends seemed to go out of fashion in the 1990s. A yield of 2% or so appeared trivial when the market was rising by 20% a year. The disrespect for dividends also reflected the belief that, for tax reasons, share repurchases were a better way of returning cash to investors.*' (The Economist, 2nd September 2010)

1. Introduction

Over the past 15 years, there has been a strong decrease of UK listed firms paying out dividends. This decline has only been modestly compensated by an increase in companies adopting share repurchases. Fama and French (2001) have shown that fewer US corporations have paid dividends over the last quarter of the last century, but DeAngelo, DeAngelo and Skinner (2004) demonstrated that, while the number of dividend-paying firms did indeed go down, the total amount of dividends did actually increase.

When introducing readers to dividend policy, corporate finance textbooks typically refer to the dividend irrelevance theorem by Modigliani and Miller (1961): investors are indifferent as to whether a firm chooses dividends or share repurchases under the assumption of perfect capital markets. Allen and Michaely (2002: 13) phrase it this way: 'any desired stream of payments can be replicated by appropriate purchases and sales of equity'. A number of reasons have been advanced that cause the above statement not to hold, including taxation and tax clienteles, the use of dividends as a signaling device, the dividend catering theory, and personal motives by management induced by the structure of their compensation packages. Share repurchases are used for occasional payout of excess cash and is hence a more flexible payout device than dividends, which are more 'sticky' - especially with regard to downward adjustments (Ofer and Thakor, 1987, Stephens and Weisbach, 1989, Jagannathan, Stephens and Weisbach, 2000, Amihud and Li, 2006). CEOs with option packages tend to prefer share repurchases and avoid dividends because of the associated negative effect on their personal wealth in case part of their remuneration package consists of non-dividend corrected stock options (and restricted stock) (Fenn and Liang, 2001, Liljeblom and Pasternack, 2006, Aboody and Kasznik, 2008, Geiler and Renneboog, 2014). Companies can adjust their dividends to signal their prospects to the market

(Bhattacharya, 1979, Miller and Rock, 1985, Allen, Bernardo and Welch, 2000, Allen and Michaely, 2002). According to Allen and Michaely (2002), the accumulated evidence indicates that changes in payout policy are not motivated by firms' intentions to signal their true worth to the market, but rather suggests that dividends and share repurchases curb overinvestment by management. This is in line with Jensen's (1986) 'free cash flow theory', which says that a commitment to payout reduces management's discretion over cash flows. Hovakimian, Opler, and Titman (2001) and Jagannathan and Stephens (2003) report that more profitable firms have lower leverage ratios and tend to prefer share repurchases to repaying debt. The catering theory states that corporate payout decisions reflect investors' preferences for a specific payout channel (Baker and Wurgler, 2004). The idea being that a high dividend premium[1] proxies for the investors' taste for dividends and induces managers to opt for a higher dividend payout. In the case of a negative dividend premium, managers may react with earnings retentions or the use of share repurchases (Geiler and Renneboog, 2014).

In relation to taxation, Allen and Michaely (2002) learn from the payout literature that there seems to be an effect of differential taxes (between dividends and capital gains) in the US on share prices, but that there is little evidence of a significant clientele shift triggered by tax-induced dividend changes. DeAngelo et al. (2008) argue that the introduction of a tax on payout should lead to a replacement of payout by retention, but report that such shifts do not occur. Even if dividends are taxed and capital gains are not, payouts will not cease to exist because the capital appreciation gained by foregone dividends is not one-to-one. It is problematic to attempt to transfer insights on taxation to another country as taxation systems often significantly differ across countries (and even within a single country, tax rules frequently change over time). Given the mixed empirical evidence of the impact of taxes on the payout decision and the lack of non-US research, we revisit the payout taxation for the UK while at the same time considering alternative explanations such as market sentiment, managerial incentives, top management's remuneration and their individual traits, ownership concentration, and company-specific characteristics.

Over the past two decades, the UK has seen many reforms on the tax treatment of dividends and share repurchases. For instance, the tax reform in 1997 withdrew the ability of tax-exempt investors (such as pension funds) to reclaim tax credits on dividends, which led to an immediate drop in the after-tax value of dividends to these investors of approximately 20% (Bell and Jenkinson, 2002, Bond, Devereux and Klemm, 2007). This supported the statement by Bond et

[1] The dividend premium is typically calculated as the logarithm of the average market-to-book ratio of dividend paying firms minus that of non-dividend paying firms (Baker and Wurgler, 2004).

al. (1996) that a more neutral tax treatment of the dividend payout would negatively affect dividend payout ratios, which were previously inflated precisely because of the favorable tax treatment of dividends.

Our approach consists of these steps; we examine: (i) the impact of different tax regimes on the payout level (over time); (ii) the relative attractiveness of the different payout channels (dividends, share repurchases, or a combination of both) by means of a multinomial logit setup; (iii) the impact of taxation on switching behavior from one payout method to another using a dynamic probit model; and (iv) the relation between taxation on the aggregated dividend payout by means of an extended partial-adjustment model.

We contribute to the literature in the following way: First, with exception of Bell and Jenkinson (2002) who focus on the impact of the 1997 reform on institutional shareholders, Bank, Cheffins, and Goergen (2004) who investigate the relation between politics and dividend payout, and Bond et al. (2007) who study the effect of taxes on corporate valuation, there is hardly any research investigating the effect of taxation on payout decisions in the UK. This paper is to our knowledge the first to address the effect of taxation on the earnings distribution method. Second, this paper provides a thorough account of the many tax changes over the past decades related to the payout/retention decisions. Third, our data set is particularly rich: our analysis is based on a large panel comprising virtually all listed UK companies (including small caps and fledglings) starting in 1997 (at the onset of a period with major tax reforms) until 2007 (when the financial crises commence). Fourth, in contrast to many US studies, we dispose of information on the actual share repurchases (and not just on the announcement of share repurchase programs).

The paper reaches some interesting conclusions. First, among the frequent changes in tax regulation, the Finance Act (FA) of 1997 and the abolition of the Advanced Corporation Tax in 1999 affected the payout choice with decreasing preferences for dividends (relative to both earnings retention and the use of share repurchases) over the period 1997-2001. Subsequently (over the period 1999-2001), we document a particularly strong tendency to avoid share repurchases in favor of earnings retention, or, in the case of payout, in favor of dividends. Since 2002, earnings retention is preferred over dividends.

Second, when we focus on the taxation of dividends and capital gains for specific types of large shareholders, we do not find consistent evidence that the after-tax values of dividends and share repurchases, which proxy for the tax-induced preferences of those investors, led to tax clienteles.

Third, we investigate whether changes in the tax regulations affect the switching decision between dividends and share repurchases in case of an earnings payout. From a dynamic probit model, we learn that taxes can affect this switching decision.

Fourth, to estimate the aggregate level of dividend payout, we extend a partial adjustment model by including the relative preferences for dividends or share repurchases induced by taxes for individual investors, pension funds, and corporate investors. In line with Poterba (2004), we find that the short-run changes of tax parameters only have a small impact on aggregate dividends.

The remainder of this paper is organized as follows: Section 2 summarizes the payout evolution and Section 3 details the regulatory framework related to earnings payout. Section 4 details the various tax regimes since 1994 and lists our conjectures. Section 5 presents the dataset and the methodology. Section 6 discusses the results, and Section 7 concludes.

2. The Evolution of Earnings Payout

Did the frequent changes in the tax rules influence the payout policy of UK firms or are other economic determinants responsible? Considering the aggregate payout policy of a pooled sample of UK firms from 1997-2007, we find that earnings payout in the form of dividends prevails over share repurchases and plowing all earnings back into the company. Panel A of Table 1 details that 68.3% of all firms pay out dividends, roughly 28% do not pay out, and only about 3% use a combination of dividends and share repurchases. The decision to engage solely in share repurchases is rather unpopular – only 0.3% of all firms do so. Firms not paying out earnings are rare within the FTSE 350 firms, but are more common among the FTSE Small Caps and Fledglings. Combining dividends and share repurchases is more frequently observed in FTSE 100 (13.36%) and the FTSE 250 (4.27%) firms. When we consider the amounts paid out, the picture looks different: Panel B of Table 1 details that firms pay out approximately 27% of EBIT by means of dividends and roughly 47% of EBIT via a combination of dividends and share repurchases (if EBIT>0). This is roughly in line with the findings presented by Renneboog and Trojanowski (2007), who report an average dividend payout over earnings of about 33%. The dividend payout level is higher for FTSE100 firms (30.57%) and the FTSE250firms (27.96%) than for FTSE Small Caps (25.84%) and Fledglings (23.22%).

[Insert Table 1, about here]

But how did payout policy evolve over time? We find that the number of firms paying out dividends has substantially decreased over time: Figure 1 details that while in 1998 about 86% of all firms paid out dividends, only around 55% do so in 2007.[2] Since 2002, we observe an increase in the number of firms combining dividends and share repurchases, and their average payout ratio. When firms only use share repurchases, the payout level is very volatile (Figure 2). The question remains whether taxation can explain payout levels, changes, and trends.

[Insert Figures 1 and 2, about here]

3. Regulatory Framework of the Payout Decision

While the Companies Act (CA) does not prescribe who is responsible for declaring a dividend, this is typically done by an ordinary resolution by the shareholders on the annual meeting.[3] In the UK, an interim dividend is typically paid in between annual meetings when the directors are convinced that the firm's financial position warrants a payout, and a final dividend is usually proposed at the annual meeting.[4] Share repurchases are regulated by various acts and codes, including the Companies Act, the FSA Listing Rules, the Model articles, and the Criminal Justice Act. The Companies Act 2006 generally prohibit a limited company to acquire its own shares, unless several provisions are met: (i) a company should pay for repurchased shares in full at the time of the purchase, (ii) a share buyback is limited to 15% of the number of shares outstanding, (iii) share repurchases ought to be approved prior to the purchase with a (special) resolution.[5] The FSA Listing Rules prescribe that the actual price and volume of every transaction, including the purchase date, should be made public as soon as possible and no later than 7:30am on the day after the transaction. Furthermore, the rules impose a prohibition period for share buybacks, which spans 60 days prior to the preliminary announcement of a company's annual or interim report, or, if shorter, the period from the relevant financial year end up to and including the date of the announcement.[6]

The CA makes an important distinction between market and off-market repurchases[7]: the former take place on a recognized investment exchange (e.g. LSE, AIM) and is subject to a

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[2] Ferris, Sen and Yui (2006), which indicate a decline in the total number of dividend payers from 75.9% to 54.5% over 1988-2002.
[3] Income and Corporation Taxes Act, 1988, s. 209.
[4] Income and Corporation Taxes Act, 1988, s. 263-281.
[5] For (i)-(iii), see, respectively, CA, 2006, s. 658, CA, 2006, ss. 690 – 692, CA, 2006, ss. 694 and 701.
[6] FSA Handbook, Listing Rules (LR) 12 and The Companies (Model Articles) Regulations, 2008. The period does not apply to buy-back programs, managed by independent external parties, that are already in place and of which the dates and quantities to be traded are already disclosed and fixed.
[7] CA, 2006, s. 693.

marketing arrangement (which occurs if the firm disposes of facilities for trading in those shares without prior permission from the exchange and without a limit regarding the time during which these facilities are available (Ferran, 2008)). The CA also details that any purchase that is not made on a recognized investment exchange or that is not subject to a marketing arrangement is an 'off-market purchase'.[8]

Many papers conclude that share repurchases are employed as a substitute for dividends because of the lower level of commitment associated with their usage (Jagannathan et al., 2000, Fenn and Liang, 2001, Brav, Graham, Harvey, Campell, and Michaely, 2005). Therefore, we assume that firms opt for open market share repurchases because of their increased flexibility (as opposed to dividends) in terms of the expectations they instill with investors. In other words, as we expect that firms use share repurchases to avoid commitment, we assume that the repurchases in our sample are open-market share repurchases. Our sample contains only companies that are listed on the primary market and the alternative investment market (AIM) of the LSE.

Since December 2003, a firm is allowed to hold treasury shares: it can purchase its own shares out of distributable profits for future resale.[9]

In sum, there is a multitude of laws that need to be considered in order to engage in share repurchases in the UK. In particular the FSA listing rules with their tight disclosure requirements, price ranges, and prohibition periods impose restrictive measures on share repurchases. As a result, it is also more difficult to use share repurchases in the UK than in the US to exploit perceived undervaluation (Rau and Vermaelen, 2002).[10]

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[8] Two variants of off-market repurchases are private repurchases and tender offers. The Listing Rules define a tender offer as the intent to purchase all or part of the shares belonging to a class of securities at a maximum or fixed price, which is communicated to all shareholders. The tender offer must be open to all shareholders of the class pro rata to their existing holdings for at least 7 days on the same terms. If a firm acquires at least 15% of any class of its own equity shares within a period of 12 months, it must make a tender offer to all shareholders of that class. In the case of private buybacks, the group of potential participants is restricted. The tax consequences of a share buyback are the same for a market and an off-market purchase, but the treatment for unquoted companies is different (FSA Handbook, Listing Rules, Appendix 1 and 12.4).

[9] Treasury shares give companies flexibility to manage their capital structure as the shares can be re-sold without the full range of formalities applying to new share issues. Treasury shares can be used to satisfy entitlements under employee share schemes (CA, 2006, s. 724). Treasury shares may not exceed the maximum of 10% of the nominal value of the issued share capital at that time. With respect to treasury shares, the company must not exercise any right (e.g. voting rights at the AGM) and must not make any distribution of these shares (CA, 2006, ss. 725-726 and 727-730).

[10] Espenlaub et al., (2010:3) state that "there is little consensus on the information content of open market share repurchases", i.e. it remains questionable whether open market share repurchases are used to exploit (perceived) underpricing.

4. Taxation and Conjectures

Income tax is to be paid on individual investors' dividend income although the tax rate on dividend income is often lower than for income from labor to compensate for the tax already paid at the corporate level. The income tax rate depends on the level of income and is 10% (starting rate), 22% (basic rate), and 40% (higher rate) at the end of our sample period, and corporation tax is charged on the profits at 30% (main rate) and 20% (small rate). Corporate shareholders, who receive dividends from a UK company, do not pay taxes on these dividends.[11]

Capital gains tax is levied on the gains from the disposal of a capital asset, e.g. on the sale of shares, and applies to both individuals and corporations.[12] For the calculation of the gain of a listed company it is irrelevant whether the shares are sold on the exchange or off-market. As in the case of income tax, there is an 'Annual Exempt Amount' for individuals of £9,200 (at the end of our sample period, i.e. in 2007-08). For a gain from share repurchases exceeding this amount, individuals pay capital gains tax at a flat rate of 20%[13], i.e. considering the exempt amount their effective tax rate is lower than 20%. Corporations, however, are subject to corporation tax on the full amount of the gain at a small companies' rate of 20% or a main rate of 30%. The gain is typically calculated as the difference between the disposal proceeds and the original purchase price plus allowable related expenditures, several types of which have been operated in the UK (including 'indexation allowance', 'taper relief', and the 'substantial shareholdings exemption' (SSE)).[14]

The problem with the tax treatment as described above is that profits are first taxed at the corporate level, and then, when redistributed via e.g. dividends, they are again taxed at the individual level as income. To reduce this double taxation, the UK decided to operate a modified imputation system for the period 1973-1999. An imputation system offers the advantage that part or all of the tax paid by the company can be attributed ('imputed') to the shareholders by way of a tax credit. Companies can forward these imputation tax credits to shareholders along with dividends, thereby representing the tax paid by the company upon its pre-tax profit. In the case of share repurchases, the imputation tax credit is equal to the 'distribution element', which is defined as the difference between the market value of the repurchased shares and the book

[11] Income and Corporation Taxes Act, 1988, s. 208.
[12] Taxation of Chargeable Gains Act, 1992, s 2. Exceptions apply to venture capital trusts, and enterprise investment schemes.
[13] Per the budget of 22 June 2010, there is a higher rate of 28%.
[14] An 'indexation allowance' (applicable between 1982 and 1998) allowed to increase the cost of the shares by the change in the retail prices. It was replaced in 1998 by the taper relief, which allowed making deductions related to the number of years that a share was held. The SSE was introduced in 2002 and exempts shareholdings of 10% or more of the shares in another company (subject to conditions) from capital gains tax.

value of the corresponding paid-in capital ('the capital element'). The introduction of the Advanced Corporation Tax (ACT) on April 6, 1973 marked the beginning of the imputation system aiming at alleviating double taxation.[15] While companies had to pay an additional tax on distributed profits, they could offset these payments against their corporation tax.[16] The return to the classical system got rid of the tax credit of the imputation system. In what follows, we distinguish between six different tax regimes between 1993 and 2010 covering both the ACT imputation and the classical system. In particular, we detail the changes in tax rules on dividends and share repurchases. Appendix B provides for each tax regime examples on how the after-tax values for both dividends and share repurchases over the various tax regimes are calculated for different types of investors.

4.1. Prior to September 21, 1994

The partial imputation system introduced in 1973 is called the Advance Corporation Tax (ACT).[17] Corporations could deduct ACT from the gross mainstream corporation tax for the accounting period in which the dividends were paid to arrive at the corporation tax payable. ACT offset was only possible up to a certain limit: the ACT together with the net dividend paid should equal the company's taxable profits (Gammie, 1998). ACT exceeding this limit was referred to as 'surplus ACT' and could be carried backward and forward.[18] Nevertheless, if a company's corporate tax liability persistently lagged behind the amount of its ACT payment, the option expired (Bank et al., 2004). Hence, if the taxable profits were not sufficient or stemming from overseas, corporations were not able to get full ACT relief and faced what is known as the surplus ACT problem (Shirley, 1997).

Dividends

The income tax on dividends payable depended on the status (and overall income) of the recipient. Individual shareholders received an imputation tax credit that represented the tax paid by the corporation. In case an imputation tax credit was attached to dividends, they were referred to as 'qualifying distributions' (Corporation Tax Act 1988, section 14). The grossed-up dividend would then be added to the individual's income.[19] For all but one year during existence of the

[15] Finance Act 1972, s. 84(1).
[16] Income and Corporation Taxes Act, 1988, s. 239.
[17] FA 1972, s. 84(1).
[18] Income and Corporation Taxes Act 1988, s. 239(3). Surplus ACT could be carried forward indefinitely and backward up to six years. It could be surrendered to majority owned subsidiaries. Shadow ACT rules were introduced to detail the treatment of surplus ACT that has been built up before 6 April 1999. For more details: Practical Law Company, 2010: 'Practice note, Shadow ACT'.
[19] The grossed-up dividend is the sum of the net dividend received plus the associated tax credit.

ACT, the ACT rate and tax credit were linked to the basic (and lower)[20] rate of income tax with a starting rate in 1973 of 30% (Harris, 18 June 2010).[21] In the tax year 1993-94, however, the ACT rate and tax credit were both equal to 22.5%, while the basic rate of income tax payable on dividends was equal to 20%. For lower and basic rate individuals, the tax credit would discharge the liability created by the grossed-up dividend. For individuals subject to the higher rate of income tax, additional tax payments were required equal to the higher rate on the gross dividend less the tax credit. Interestingly, the imputation tax credit was partially refundable for nonresident investors that qualified for special tax treaty provisions, and fully refundable to tax-exempt shareholders (pension funds, insurance companies with respect to their pension business, and individuals holding shares through Personal Equity Plans).[22] Accordingly, UK pension funds were not liable to taxation on investment income (interest or dividends) received, but were given a tax credit that they could use to obtain a full cash refund. Corporations were also exempted from corporation tax on UK dividends, but did not receive tax credits on dividends from UK companies.[23] In fact, if companies received dividends, the ACT payment was reduced accordingly.[24]

Share Repurchases

While in broad terms the exclusive repayment of capital on shares did not form a distribution and therefore had no tax consequences, the extent to which the repurchase price exceeded the original purchase price was treated as a distribution that qualified for ACT relieve. The corporation had to pay ACT on this 'distribution element' and could then forward a tax credit to the shareholder, who could use it to offset personal taxes. At the same time, a capital loss could be calculated equal to the difference between the investor's cost base (original purchase price plus an indexation allowance) and the original sales price of the share. Individual shareholders who sold their shares were taxed at their personal income tax rate on the value of the repurchase, but received the tax credit. The personal income rate in 1993 was 20% for the basic rate of income tax and 40% for the higher rate. Pension funds received a tax credit of 25% on the distribution element, despite being tax-exempted on capital gains. Corporations were liable to

[20] Finance Act 1993, Ch. 34, s. 78(1). Note: The lower rate of income tax is applicable in the financial years after 1993.
[21] Income and Corporation Taxes Act 1988, s. 14(3). Note: ACT on a qualified distribution of a UK-resident corporation was calculated as I/(100-I), with I being the percentage at which income tax at the basic rate was charged in the current year.
[22] Section 231(1) ICTA 1988.
[23] Foreign dividends were taxable but gave rise to a tax credit, either under UK domestic provisions or under a double taxation treaty.
[24] For a company, ACT payable was calculated as: ACT fraction x (dividends paid - dividends received).

capital gains tax (CGT) on the distribution element. CGT was levied at the rate of Corporation Tax (equal to 33% in 1993). As in the case of individual shareholders, corporations were given a tax credit and were able to subtract capital losses. We summarize the situation prior to September 21, 1994 in panel A of Table 2. Our calculations presented in Appendix B confirm that all individuals (both basic and higher rate individuals) preferred share repurchases. In contrast, pension funds and corporations had a strong preference for dividend distributions (because of the associated tax credit) over share repurchases and over retaining profits (which generated no tax credit), which is in line with Rau and Vermaelen (2002: 246).

[Insert Table 2, about here]

4.2. From September 21, 1994 - October 7, 1996

Dividends

While both the rate of ACT and the associated tax credit had been reduced in 1993 to 22.5%, they were further cut to 20% in April 1994. For lower rate tax-individuals, this was equal to the income tax rate on dividends. The income tax rate for high tax-bracket individuals remained at 40%. As before, the imputation tax credit was fully refundable to tax-exempt investors, such as pension funds. In addition, corporations were not liable to corporation tax on UK dividends (and did not obtain a tax credit).

Share Repurchases

In September 1994, investment banks invented the 'agency buyback,' an innovative mechanism that increased the tax attractiveness of stock repurchases in the open market. Shareholders sold their shares to a broker who acted as an agent for the company. The agent contacted pension funds (and other tax-exempt parties such as charities) up-front and prioritized them over non tax-exempt institutions. This way, agency buybacks resembled off-market repurchases and provided these tax-exempt investors with the opportunity to claim a tax credit on the distribution. For the period from September 1994 to October 1996, Rau and Vermaelen (2002) report an increase in buyback activity, presumably of tax-exempt investors such as pension funds. Individual shareholders kept receiving the tax credit and the ability to subtract capital losses, but were taxed at their personal income tax rate (either 20% or 40%). Pension funds still received the tax credit of 25% on the distribution element, despite being tax-exempted on capital gains. In the case of corporate shareholders, corporations were still required to pay ACT on the distribution element at a rate of 33%. Corporate shareholders received the associated tax credit, and although they could deduct it from their mainstream Corporation Tax, the effect was probably

negligible due to the fact that ACT only affected the timing of tax payments, but not the gross mainstream Corporation Tax liability (Devereux, Griffith, and Klemm, 2004). Individual investors lost part of the tax credits that were formerly granted on dividends. Share repurchases were still relatively more attractive to individual investors. Through the invention of the agency buyback, i.e. the idea to structure transactions in a way that allowed to 'transfer the tax credit from taxable to tax-exempt shareholders' (Gammie, 1998: 434), share repurchases became more attractive than dividends to pension funds (and charities and trusts) that intended to sell. Overall, corporations still preferred dividends to share repurchases due to the attached tax credits. We summarize the situation between September 1994 and October 1996 in panel B of Table 2 (Detailed calculations are in Appendix B).

4.3. From October 8, 1996 – July 1, 1997

On 8 October 1996, the loophole in the legislation was closed such that tax-exempt shareholders were no longer entitled to a repayment of the tax credits associated with a repurchase of shares. However, they were still able to claim the tax credit on dividends.

Dividends

The changes in UK tax law of October 1996 had no effect on the treatment of dividends.

Share Repurchase

From 8 October 1996, tax-exempt investors, such as pension funds, charities, and trusts, could no longer recover tax credits associated with the distribution element of share repurchases.[25] Accordingly, the attractiveness for pension funds to engage in share repurchases was reduced substantially. The tax changes introduced in October 1996 solely affected the treatment of tax-exempt investors (see Panel C of Table 2). While individuals preferred dividends to share repurchases, dividends were also the more profitable payout method for both corporations and pension funds. The abolition of the loophole by the tax authorities reduced primarily the preferences of tax-exempt investors such as pension funds to engage in share repurchases. Buybacks were no longer more attractive for tax-exempt investors than dividends. In other words, dividends became more interesting to tax-exempt investors than share repurchases. Consequently, the number of open-market repurchase completions fell significantly.

[25] Finance Act 1996, Schedule 7.

4.4. After July 1, 1997

Dividends

On July 2, 1997, the new government radically reformed the taxation of dividend income in the UK. The principal aim of this Finance Act (FA97, s.19F) was to abolish the right of pension funds to be repaid the imputation tax credit for dividends. The main effect was an immediate and significant drop of the valuation of dividend income for pension funds (Bell and Jenkinson, 2002). In view of pension funds losing the repayment of the tax credit, the main corporation rate was reduced from 33% to 31%. FA97 had, however, no immediate dividend tax implications for other investor groups. There were no changes to the rates of imputation credit or income tax and thus no changes to the dividend tax burden of individual shareholders (Hughes, 1998). Similarly, tax-exempt charities, tax-favored personal equity plans (PEPs), non-tax-paying individuals, and treaty-protected investors continued to enjoy the regime of refundable tax credits.

Share Repurchase

The changes in UK tax law of July 1997 had no direct effect on share repurchases. Still, the relative attractiveness of share buybacks rose (with a higher number of share repurchases) as the value of dividends was reduced following the abolition of the imputation tax credit on dividends for pension (Oswald and Young, 2004) (see Panel D of Table 2). Notably, after April 6, 1998 individuals were able to claim a taper relief that reduced the gain subject to capital gains tax. There was no change for corporations, however, as they could continue to use the indexation allowance.

4.5. After April 6, 1999

The UK tax authorities abolished the ACT on 6 April 1999 - a radical and far-reaching decision that marked the return to a classical taxation system.

Dividends

Along with the abolishment of the ACT, the tax credit on dividends for individuals was cut to 10%. The tax burden of individuals was, however, not affected because of a simultaneous cut in the basic income tax rate on dividends to 10%.[26] In addition, the tax rate on dividend income for high-bracket individuals was reduced to 32.5%.[27] The tax reform affected also other types of investors: tax-exempt investors were no longer able to claim credit repayments from the treasury, but compensatory payments as a percentage payment of their dividend income were granted to charitable investors for a transition period until the fiscal year 2003-2004 (Bell & Jenkinson,

[26] Finance (No. 2) Act 1997, s. 31.
[27] Finance (No. 2) Act 1997, s. 31(5).

2002).[28] Moreover, non-resident investors benefiting from special tax treaty provisions were no longer able to claim credit repayments - for them the value of dividends fell by 6% (Bell & Jenkinson, 2002). Corporations no longer had to account for ACT on dividends paid. ACT was replaced by quarterly installment payments of Corporation Tax by large companies to compensate the exchequer for lost revenue (Hughes, 1998).

Share Repurchase

By the abolition of ACT, companies were no longer required to account for ACT on the distribution element of share repurchases. UK resident corporate shareholders that received dividends and other distributions continued to be exempted from Corporation Tax. The main rate of Corporation Tax was cut to 30% from 1 April 1999. After the abolition of ACT in 1999, the after-tax values of the various payout methods to different investors changed significantly (Panel E of Table 2 and Appendix B). Lower and basic rate individuals, as well as higher rate individuals preferred share repurchases to dividends. The situation for pension funds was not affected. As before, they were indifferent between either form of payout. While the after-tax value of share repurchases to corporations increased slightly, the after-tax value of dividends was still high. Accordingly, corporate shareholders preferred dividends to share repurchases.

4.6. Since 2002

For a UK-resident company, the entire buyback price is taken into consideration for the calculation of the chargeable gain. The introduction of the Substantial Shareholdings Exemption (SSE) in 2002 affected the taxation of capital gains.[29]

Dividends

The tax law changes in 2002 had no effect on the value of dividend payments.

Share Repurchase

On April 1, 2002, a Substantial Shareholdings Exemption (SSE) for capital gains tax was introduced, which exempts shareholdings of 10% or more in another company from capital gains tax. The SSE affects the taxation of capital gains and is therefore likely to contribute to a greater preference for share repurchases (Panel F of Table 2). While individual investors prefer share repurchases to dividends, pension funds and other tax-exempt investors are neutral to the payout channel choice. Corporations, however, prefer dividends to share repurchases.

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[28] ACT accumulated before April 6, 1999 could be relieved through a system of Shadow ACT. Transitional relief was provided for charities (Finance (No. 2) Act 1997, s. 35).

[29] Companies Regulations 203, SI 2003/1116, sections on Acquisitions of Own Shares, Treasury Shares.

4.7. Conjectures

The many tax reforms in the UK enable us to investigate whether tax changes affect corporate payout decisions. In particular, our data set covers three important changes: (1) the introduction of the Finance Act in 1997, (2) the abolishment of Advanced Corporation Tax in 1999, and (3) the introduction of the Substantial Shareholdings Exemption in 2002. The associated tax changes provide a natural experiment for analyzing the effect of taxation on corporate payout.

The FA97 led to a significant drop in the value of dividends to pension funds and to an increase in the attractiveness of share buybacks, as a consequence, pension funds became indifferent between dividends and share repurchases. Abolishing ACT resulted in a higher after-tax value of share repurchases for individuals, but also a higher attractiveness of dividends to corporations. Given the simultaneous cut in the basic income tax rate on dividends for individuals and the relatively large ownership stake of corporations, the latter effect is expected to dominate. The SSE exempts corporations from the assessment of capital gains tax for shareholdings equal to and above 10% in another company. Consequently, *we conjecture that the attractiveness of dividends was reduced in 1997, rose again in 1999, and then became a less attractive payout method relative to share repurchases in 2002 (Conjecture 1).*

While Conjecture 1 is on the general tendency of the lax laws to favor/discourage a payout (channel), the relative attractiveness of the different types of payout (and the case of no payout) still differs across type of investors. The after-tax values in Table 2 and the detailed calculations of Appendix B suggest that *higher tax rate individuals should have had a preference for retaining earnings (over the last two decades). In case the firms pay out earnings, both higher and basic tax rate individuals preferred share repurchases to dividends over the whole sample period. Lower rate individuals always preferred share repurchases over no payout save for the period since 2002 when no payout dominated. Pension funds had a strong preference for dividends (relative to no payout or share repurchases) but became neutral since 1999. Corporations are expected neutral between dividends and earnings retention over the sample period but, in case of a payout, prefer dividends to share repurchases (Conjecture 2).*

How do changes in tax legislation, particularly concerning the relative tax burden of dividends and capital gains, affect the aggregate payout? Cutting taxes on dividends should result in a higher corporate dividend payout and an increased level of investment due to a reduction in the applicable cost of capital (Poterba and Summers, 1985). Poterba (2004) confirms that a reduction in the relative tax burden of dividends and capital gains does indeed result in increasing corporate dividends. Consequently, *we conjecture that a decrease in the relative tax burden of divi-*

dends (relative to capital gains) positively affects the aggregate level of dividend payout (Conjecture 3).

In addition to the impact of taxes on the level and channel choice of earnings payout, we control for many different factors affecting the payout choices. For instance, Fenn and Liang (2001) and Geiler and Renneboog (2014) demonstrate that executive remuneration contracts influence the payout decision: stock options are negatively related to the dividend issue decision and positively to share repurchases (provided that equity-based pay is not dividend-protected). Liljeblom and Pasternack (2007) report for a unique Finnish dataset that the negative relation between stock options and dividends does not hold in the case of dividend protection. *Hence, we include the composition of executive pay contracts in our models.*

Sentiment may also affect the payout decision. Baker and Wurgler (2004) measure the 'taste for dividends' in the market – typically referred to as the 'Dividend Premium'– by calculating the difference between the (logarithms) of the average market-to-book ratio of dividend payers and non-payers. If there is a high dividend premium, firms can cater to this sentiment by issuing more dividends. Furthermore, investor sentiment also refers to the idea that behavioral biases on the side of the investor may exist: overconfident investors may overestimate their knowledge or give much weight to preconceptions about firm value and consequently trade more (Odean, 1998, Barber and Odean, 2001, Gervais, Heaton, and Odean, 2003). Investors may also believe in 'momentum' and thus keep on buying stock that has recently gained in value, thereby assuming that the observed trends are persistent (Carhart, 1997). *Hence, to capture sentiment, we take into account the dividend premium, a stock's trading volume, and its momentum.*

We also correct for other payout determinants such as firm size (index membership: FTSE100, FTSE250, FTSE Small Cap, FTSE Fledgling), the growth opportunities (Market-to-Book ratio), firm performance (ROA), leverage (Debt/Assets), firm risk (Var(CF) – the variance of cash flows), and the level of cash flows (Free Cash Flow/Assets). We also consider various governance characteristics, such as board size, board independence, CEO duality, and the percentage of female directors on the board. We also consider some traits of the top managerial decision maker: the CEO's age, gender, and tenure. A dividend surprise, the difference between the actual dividend paid and the estimated 12-month forward dividend lagged by one year, may capture a CEO's degree of optimism about the future of the firm when he pays out a dividend exceeding the analysts' forecasts.

5. Data and Methodology

5.1. Sample Selection and Data Sources

Our sample comprises most of the UK companies listed on the primary market and the alternative investment market (AIM) of the London Stock Exchange. We have payout information for 1906 companies and 9596 firm-years. The sample comprises companies, included in the FTSE100, FTSE250, FTSE SmallCap, FTSE Fledgling, and FTSE AIM.[30] Our sample period extends from 1997 (following the release of the Greenbury Report in 1995) to 2007 (prior to the start of the financial crises).

We collect the cumulative gross year-end dividend paid and a 12-month forward dividend per share from Datastream Advance. The actual share repurchases are gathered from Bureau van Dijk's Zephyr database and are verified by means of information stemming from Capital IQ. The remuneration data on CEOs, other executives, and non-executive directors comprise fixed salary, bonus, and equity-based pay, miscellaneous remuneration (e.g. transaction bonus, relocation expenses, recruitment incentives), and other pay components ('unusual compensation', e.g. medical insurance cost of the CEO) and is collected from BoardEx and annual reports. The dataset on the executive and non-executive directors comprises information on their position, gender, tenure, and ownership stakes. The ownership concentration is collected from Thomson One Banker and PricewaterhouseCoopers. Accounting information (e.g. total debt, total assets, market-to-book, ROA, EBIT), the sector aggregation, and trading information (price of the stocks and volatility) stem from Datastream Advance. We also calculate the Fama-French-Carhart four factors (market return, size or SMB, book-to-market or HML, and momentum) by means of data from the Style Research Markets Analyzer. The variable definitions are given in Appendix A.

We adjust the accounting and remuneration information in case the reported length of the financial year deviates from the standard 365 days. Moreover, when a financial year is not coinciding with the calendar year, we apply the following rule: if the reported end of the financial year lies within the first (last) six months of a given year, we assume the entry belongs to the preceding (current) calendar year.

[30] FTSE Fledgling and FTSE AIM overlap partially. Firms listed on these two indices are usually not included in the FTSE All-Share index, which is the aggregation of FTSE100, FTSE250, and the FTSE SmallCaps.

5.2. Multinomial Logit Model

In order to examine whether changes in tax regulations affect corporate payout decisions, we estimate a multinomial logit model (MNL) with as dependent variable the payout channel choice (dividends, share repurchases, a combination of dividends and share repurchases[31], and no payout). We choose the MNL over the multinomial probit model (MNP) because (i) the simpler logit model is often preferable to the more complex probit (Dow and Endersby, 2004), as the MNP is likely to suffer from a number of estimation problems, including weak identification in application, and (ii) by means of a Hausman test, we test the imposed IIA property (Hausman and McFadden, 1984). The explanatory variables include the changes in tax regimes, ownership concentration interacted with the tax regime dummies, top executive remuneration, market sentiment, and other control variables at the level of the firm and the CEO. We assume that there is no natural ordering of the payout alternatives and that the decision maker maximizes his own utility. We neither assume random taste variation nor correlation of unobserved disturbances over time. Therefore, we apply a log Weibull distribution which assumes that the error terms per individual and alternative are independently distributed and homoscedastic. The systematic part for our multinomial logit regression in which we cluster the standard errors at the firm level is:

$$\mu_{it} = \alpha + \beta_1 \times Taxation\ variables_{it} + \beta_2 \times Ownership\ variables_{it} + \beta_3 \times Remuneration\ variables_{it} + \beta_4 \times Sentiment\ variables_{it} + \beta_5 \times Other\ Determinants_{it} + \sum_{k=1}^{12} \gamma_k \times Industry_k\ .$$

where μ_{it} is the systematic part of our utility estimation per individual *i* and time *t*. The taxation variables are time indicators that capture the years of the main tax changes. The ownership variables are the cumulative share stakes held by the CEO, non-executive and executive directors, institutional investors, individuals and families, companies and pension funds. We include both the variables themselves and their interactions with each tax period. The remuneration variables include total salary, fees, bonus, stock options and restricted stock, miscellaneous pay and other components of pay. The sentiment variables include the Dividend Premium, the Trading Volume of stocks over shares outstanding, and Momentum. We also include firm size, performance and risk as well as internal corporate governance variables (board size, board independence) and CEO characteristics (percentage of female board members, CEO gender, CEO age and tenure). We cluster the standard errors at the firm level.

[31] We combine share repurchases and the combination of repurchases and dividends into one category as there are few observations in the former subcategory.

In an alternative estimation, we replace the taxation regime variables in the MNL by a direct measure that captures the relative attractiveness of dividends and share repurchases from a tax perspective. The payout attractiveness measure is based on the relative taxation of dividends and capital gains: $\theta_{h,t} = w_{h,t}\left[\left(1-\tau_{div,h,t}\right)/\left(1-\tau_{cg,h,t}\right)\right]$, where $\theta_{h,t}$ is the relative payout attractiveness by investor type h (e.g. individuals, corporations, pension funds) at time t, τ_{div} is the marginal tax rate on dividends, and τ_{cg} is the marginal tax rate on capital gains, and $w_{h,t}$ refers to the percentage of stock owned by investor h at time *t*. In other words, the relative payout attractiveness measure is the product of an investor category's ownership concentration and his after-tax value of dividends divided by his after-tax value of share repurchases.

5.3. Dynamic Probit Model

To examine whether changes in taxation rules affect the switching decision between dividends and share repurchases, we employ a dynamic binary probit model focusing solely on firms paying out earnings. Hence, our dependent variable is binary: dividends versus share repurchases (including share repurchases in combination with dividends) and we condition this choice on the dividends paid out in the previous period. Table 3 indicates that while only about 54% of all firms that paid out share repurchases in the past continue to do so, the corresponding figure for dividend paying firms is approximately 94%. According to Verbeek (2004), there exist two possible explanations: (1) state dependence, i.e. the longer a firm has paid out dividends, the less likely it is to change its payout method, and (2) unobserved heterogeneity, i.e. firms with certain unobserved characteristics are more likely to pay dividends. Allowing for dynamics in the underlying process enables us to derive consistent estimates for the independent variables (Bond, 2002). Therefore, we employ a dynamic probit model to allow for both state dependence and the initial conditioning problem: including a lagged version of our dependent variable helps us to take care of state dependence and the firm-specific effect α_i captures unobserved heterogeneity. Hence, our model looks as follows:

$$Div_{it}^{*} = \beta_1 \times Div_{i,t-1} + \alpha_i + \beta_2 \times Taxation\ variables_{it} + \beta_3 \times Remuneration\ variables_{it} + \beta_4 \times Sentiment\ variables_{it} + \beta_5 \times Other\ Determinants_{it} + \sum_{k=1}^{12} \gamma_k \times Industry_k + \varepsilon_{it}$$

where a CEO decides to payout dividends if $Div_{it}^{*} = 1$, and share repurchases or a combination of dividends and share repurchases, otherwise. In addition to the variables listed in the above subsection, we include past dividend payout $Div_{i,t-1}$ (equals 1 in case of a dividend payout and 0 otherwise). The random effects probit model is estimated by means of a GLS random-effects estimator (Woolridge, 2005).

[Insert Table 3, about here]

5.4. Aggregate Dividend Payout

To examine the effect of dividends and capital gains on the *aggregated* payout, we use an adjusted Lintner (1953) model, in the spirit of Poterba (2004:71) who argues: 'The standard approach to measuring the relative tax burden on dividends and capital gains assumes that each investor's tax parameters affect the aggregate tax preference for dividends versus capital gains in proportion to the investor's ownership of corporate stock'. Therefore, we calculate for each company the aggregated weighted-average payout preference parameter θ_t, which is defined as: $\theta_t = \sum_h w_{h,t}\left[\left(1-\tau_{div,h,t}\right)/\left(1-\tau_{cg,h,t}\right)\right]$ where τ_{div} is the marginal tax rate on dividends, and τ_{cg} is the marginal tax rate on capital gains, and $w_{h,j}$ refers to the percentage of stock owned by an investor h at time t. This way, θ_t measures the relative tax burden on dividends and capital gains – or 'the equity weighted average investor tax preference parameter.' Contrary to Poterba (2004), who focuses solely on taxable household stock holdings, we calculate the aggregated tax preference parameter for three types of investors: (i) individual investors (whom we assume to be taxed at the marginal rate of the highest tax bracket), (ii) pension funds, and (iii) corporate investors. Table 4 shows the corresponding results: for individual investors, the average ratio of after tax income from dividends over capital gains equals 82% up until 1998, then increases slightly to 83%, and finally declines to 74% from 2003. The average equity stakes owned by individuals are in the range of 8-11% over all the years considered. Consequently, the equity-weighted average tax preference parameter is about 8-12% per year. Particularly in the period 2000-2002, their tax preference parameter is leaning more strongly towards dividends. For pension funds, the average share blocks appears to be very low – around 0-0.4% – but this is a clear underestimation due to the fact that stakes below the 3% disclosure threshold do not have to be reported. Still, their average ratio of after-tax income from dividends over capital gains is high: with exception of 1997 (125%), we observe a constant rate of 100%, indicating that pension funds should be neutral w.r.t the two payout channels. Due to the particular low ownership values, we observe equity-weighted average pension fund tax preference parameters close to 0% in all years. As a consequence, the tax preference parameter does not capture the impact of the tax change in 1997/1998. Lastly, we observe the following values for corporate investors: the average share of equity owned is in the range of 23-30%. The average ratio of after tax income from dividends over capital gains is 119% for the first three years of our sample and 118% thereafter. As a result, we find that the equity-weighted average tax preference measure

of corporate investors is around 28-36% and more volatile than the measures of the other investor types. The reason for this finding is two-fold: high ownership concentration in the hands of corporations on the one hand, and a strong after-tax advantage of dividends (relative to share repurchases) on the other hand.

[Insert Table 4, about here]

To examine the impact of the tax preference parameters on the aggregate level of dividend payout, we relate the annual change in the level of dividends to the changes in profits, tax preference parameters, and their lagged levels:

$$\Delta lnDiv_t = \beta_0 + \beta_1 \times \Delta \ln(ROA)_t + \beta_2 \times \Delta ln\theta_{Individual,t} + \beta_3 \times \Delta ln\theta_{Pensionfund,t} + \beta_4 \times \Delta ln\theta_{Corporation,t} + \beta_5 \times lnDiv_{t-1} + \beta_6 \times \Delta ln(ROA)_{t-1} + \beta_7 \times \Delta ln\theta_{Individual,t-1} + \beta_8 \times \Delta ln\theta_{Pensionfund,t-1} + \beta_9 \times \Delta ln\theta_{Corporation,t-1} + \varepsilon_t$$

where $\Delta lnDiv_t$ stands for to the annual change in dividends, $\Delta \ln(ROA)_t$is the change in the natural logarithm of profit (as measured by ROA), $\Delta ln\theta_{Individual,t}$, $\Delta ln\theta_{Pensionfund,t}$, and $\Delta ln\theta_{Corporation,t}$ refer to the relative tax burden on dividends versus capital gains for individuals, corporations, and pension funds, respectively. To solve the issue of negative earnings in a log-log specification, we follow Poterba (2004) and restrict our sample to observations with a positive ROA.

6. Results

6.1 Corporate Payout Decisions and Tax Regimes.

The multinomial logit analysis in Table 5 shows that the preference of dividends (relative to no earnings payout) declines over time: the tax coefficient is stronger for tax period 1 (1997-1998), smaller but still positive and statistically significance for tax period 2 (1999-2001), relative to the omitted subsequent period (2002 and beyond) (column (1) of Panel A: coefficients 0.973 and 0.300). Panel B confirms the preference for dividends relative to share repurchases (possibly combined with dividends) for tax period 2, relative to the tax period starting in 2002. Over tax period 2, we find the strongest aversion to share repurchases relative to dividends and share repurchases hence become more desirable since 2002 (column (2) of Panel A). These findings are partially in line with Conjecture 1, in that dividends became much less attractive beyond 2001 relative to no earnings payout as a consequence of the associated tax

changes of FA97 and the abolition of ACT. Still, we do not find that dividends became more attractive in 1999-2001 relative to tax period 1997-1998. We also report that share repurchases are less desirable than dividends in the tax periods prior to 2002 and that, in line with C1, the dividend preference relative to share repurchases is stronger in period 1990-2001.

[Insert Table 5, about here]

Although we will examine the preferences of difference types of blockholders under the different tax regimes later, we control in these models for ownership concentration. CEOs with larger ownership stakes prefer earnings retention over paying out dividends. Individuals and families' ownership concentration is positively related to dividend payout versus retention (at the 10%-level) and negatively related to share repurchases versus dividends (at the 5%-level). Pension funds and other institutional investors equity stakes do not seem to be related to payout choice and the presence of corporations owning share blocks is related to no earnings payout.

Column (1) of Panel A also shows a strong negative association between CEO option holdings (Options/Assets) and the decision to payout dividends and, in case of a payout, a strong positive link with the decision to pay out earnings via share repurchases rather than via dividends (Column (3), Panel B). Both results are strongly significant at the 1%-level. Likewise, CEOs owning a high number of restricted stocks avoid dividend payout (at the 10% level of significance, in column (1), Panel A).

When we consider the sentiment variables, we find that corporations do not seem to cater to the market-wide preferences for dividends relative to share repurchases as the dividend premium is not statistically significant. Momentum is not related to the payout decision either. Both Panel A and B show that trading volume is low in firms paying out dividends and is much higher for firms not paying out earnings or returning cash to shareholders by means of share repurchases. If increased trading volume proxies for investor optimism about a specific stock, then we see that more optimistic shareholders invest in companies that plow back their earnings in the firm and in firms which signal value creation by mains of the share repurchase channel.

Larger firms (as measured by index membership) more frequently opt to pay out dividends (rather than retain earnings) as reflected in column (1) of Panel A. The payout propensity by means of dividends monotonically declines by size (from FTSE 100 to FTSE Fledglings). Share repurchases are more frequently undertaken by the largest firms (FTSE100) and the smallest ones (FTSE Fledglings), whereas Small Caps only infrequently resort to this payout channel.

The profit measure (ROA) confirms that high accounting profit is a prerequisite to payout earnings by either payout channel. Likewise, high free cash flows are significantly and

positively related to the payout decision (within the 1% level of statistical significance). High market-to-book firms, which have higher growth opportunities, pay out more dividends (Panel A, column (1)). This violates the capital structure pecking order stating that firms with many value-generating investment opportunities should resort to the cheapest source of funds: retained earnings. Firms with higher leverage more frequently opt for share repurchases (relative to dividends). The fact that highly levered firms avoid dividend payment may reflect the fact that they prefer to resort to the more flexible payout mechanism of share repurchases as dividend policies are shown to be sticky in Anglo-American markets. When we estimate the effect of CEO traits on the payout decision, we find that male CEOs are more likely to opt for dividends than for share repurchases (Panel B), older CEOs prefer dividends over retention and share repurchases (column (1)) and column (3)), and CEOs with tenure prefer payout (either by dividends or share repurchases) over no payout (column (1) and (2)).[32]

We now investigate tax-induced clientele effects by expanding the above payout choice models by interacting the tax regimes with ownership concentration by shareholder type. These interaction effects are expected to capture for each shareholder category the preferences for a payout method as changes in the tax rules over time also change the relative attractiveness a specific way of returning cash (if at all) to the shareholders. In Table 6, we do not find evidence of a clientele effect for individuals: neither the interaction terms of the tax regime with CEOs, executive directors, non-executive directors and other individuals (and their families) are statistically significant (or have the wrong sign). There is only evidence that when CEOs own large share blocks, firms pay out fewer dividends and more frequently retain earnings, but this is not related to a tax regime. Contrary to our expectations based on taxation, individuals' and families' ownership suggests a preference for dividends (column (1) of Panel A and column (3) of Panel B). There is also no evidence of a tax-induced payout policy choice that caters to corporate stakeholders, as none of the interaction terms are statistically significant. The uninteracted term of corporate ownership shows that firms prefer no payout over dividends (column (1) of Panel A) and over share repurchases (column (2) of Panel B), which is in line with Conjecture 2. When the firm pays out earnings, corporations have no preference for a payout channel (column (3), Panel B), but this contradicts Conjecture 2. We expect pension funds to have a strong preference for dividends relative to no payout and share repurchases for tax periods 1 and to be neutral between the 3 alternatives for tax periods 2 and 3. Contrary to Conjecture 2, we find that pension funds prefer no payout over dividends and share repurchases in tax periods 1

[32] We reestimate the multinomial logit regressions of Table 5 while excluding all financial firms, and find that virtually all results are upheld.

and 2 (columns (1) and (2)). In case of a payout, we see that pension funds are neutral for tax period one, which goes against Conjecture 2. In sum, we find little evidence that large shareholders influence the payout policy in a way that is congruent with the maximization of the after-tax value of the payout.

[Insert Table 6, about here]

6.2 Relative taxation burden on dividends and capital gains

We estimate whether the relative taxation of dividends and capital gains as defined in Section 5.2, explains the payout choice. We calculate the relative taxation for each of 3 categories of shareholders: individuals subject to the highest income tax bracket (this category includes executive and non-executive directors), pension funds, and corporations. As before, we estimate two types of models: the first captures the main effects of the relative taxation measures and the second examines the interaction effects of the relative taxation measures and the ownership concentration by type of shareholder.

Whereas individuals should have preferred earnings retentions over earnings payout and – in case of payout – share repurchases over dividends, Table 7a shows exactly the opposite: individuals were indifferent between no payout and dividends (column (1)), and preferred no payout (column (2)) or dividends (column (3)) over share repurchases. Also contrary to Conjecture 2, we find that pension funds opt for no payout rather than dividends (column (1)) or share repurchases (column (2)), and when the firm pays out cash, they prefer dividends over share repurchases (column (3)). Corporations should be neutral between a dividend payout or no earnings payout; or should have a tax induced preference for dividends in case of a payout. We observe that corporations' relative tax measure is positively and significantly related to dividends (and negatively to no payout) whereas we would expect no relation for this parameter estimate in column (1)). Corporations relative tax measure is also positively related to share repurchases, and hence negatively to the cases of no payout (column (2)) and dividends (column (3)). Thus, our findings are again contradicting Conjecture 2; the corporate payout decisions do not seem to be influenced by the relative taxation of dividends and capital gains. The results on the ownership and sentiment variables and the other control variables are similar to the ones reported for Table 5.

We expand the models of Table 7a by interacting the relative taxation variables with the ownership concentration of respective shareholder categories. This way we consider the relative importance of taxes on dividends and capital gains tax but weigh these measures by the relative

importance in terms of ownership concentration of the different shareholder classes. We find that most of the results of Table 7a are upheld in Table 7b apart from the fact that uninteracted relative taxation measures of pension funds and corporations are now neutral with regard to the choice between dividends and no payout (which is what we expect for corporations but not for pension funds). We observe that hardly any of the interaction terms are statistically significant, which fails to support Conjecture 2.

[Insert Tables 7a and 7b, about here]

6.3 Persistence in Payout Channel Choice

We investigate whether taxation affects the persistence in dividend payout, or in other words, do companies switch between dividends and share repurchases, conditional on past dividend payout and changing taxation regimes. The results from a dynamic probit model estimation whereby the dependent variable equals one in case dividends are paid and zero in the case of share repurchases are shown in Table 8. From a taxation perspective, we expect that the attractiveness of dividends (relative to share repurchases) was lower in 1997, increased again in 1999, but declined as of 2002. We observe that the past dividend payout variable is strongly statistically significant and hence captures the persistence of a corporate payout policy. We find also that the changes in taxation rules (in relation to dividend taxes and capital gains tax) affect the payout channel choice. In model (1), the tax regime in period 2 (1999-2001) is, as expected, significantly and positively related to the decision to issue dividends and we also note the decline in the attractiveness of dividends in the third tax period. Likewise, when we omit tax period 3, we confirm the increase in the probability that dividends are chosen as a payout channel. As before we control for ownership concentration by type of shareholder, the remuneration contracts of top management, investor sentiment, and other possible determinants such as corporate size, profitability, risk, leverage, growth opportunities, board structure, and CEO traits. Overall, we conclude that the switching decision is mainly affected by the tax period in which a decision is made, as well as by the firm's past payout policy.

[Insert Table 8, about here]

6.4 Aggregate Dividend Payout

In order to investigate how our tax-preference parameters affects aggregate dividend payout, we estimate an aggregate time-series model, and an aggregate panel-data model on corporate

payout. The model we employ has been used by Poterba (2004), but originally dates back to Lintner's (1953) partial adjustment models. Our approach differs from Poterba's (2004) in these aspects: (i) we estimate the model with three different tax preference parameters for individual investors, pension funds and corporate investors, and (ii) we aggregate the data in a first specification at the investor type level per firm-year (panel data approach), and in a second specification at the investor type level by year (cross-sectional approach).

In line with the US findings by Poterba (2004), the yearly tax preferences and the short-run changes in tax preferences have no significant impact on the aggregate dividends (Panel A of Table 9). The lagged dividend payout is highly predictive but negatively related to aggregate dividend payout. The estimated coefficients imply a long-run dividend elasticity with respect to profits of $-0.014/-0.06157 \approx 0.23$, which is lower than the 0.75 reported by Poterba (2004). Likewise, we find long-run dividend elasticities with respect to our individual, pension fund, and corporation tax preference measures of -0.002/-0.06157 = 0.03, 0.09709/-0.06157 = -1.58, and 0.00257/-0.06157 = -0.042, respectively. Thus the tax preference parameters of the pension funds and corporations suggest that the relative tax burden on dividends and on capital gains negatively affects the share of earnings that is distributed as dividends, whereas the tax preference of individuals indicates an inverse relation. For comparison, Poterba (2004) reports a long-run elasticity of dividends with respect to his aggregate tax-preference parameter of 3.3, but mentions that this findings is somewhat surprising given the growth in share repurchases and the fact that it is substantially larger than previously reported results. Our findings do not support Conjecture 3 in that the relative tax burden of dividends and capital gain positively affects the level of dividend payout.

The estimates of our second specification model are presented in Panel B. As before, the short-run changes of our tax preference parameters generally have a small and insignificant impact on aggregate dividends with the exception of past profitability and the current tax preference parameter for individuals. The estimated coefficients imply a long-run dividend elasticity with respect to profits of $-0.010375/-0.01167 \approx 0.89$, which is higher than the 0.75 reported by Poterba (2004). Likewise, we find long-run dividend elasticities with respect to our individual, pension fund, and corporation tax preference measures of 0.00876/-0.01167 = -0.75, -0.02096/-0.01167 = 1.80, and 0.08541/-0.01167 = -7.32, respectively. Thus our tax preference parameters for individuals and corporations suggest that the relative tax burden on dividends and on capital gains negatively affect the share of earnings that is distributed as dividends.

Overall, we conclude that short run changes of our tax preference parameters generally seem to have a limited effect on the aggregate dividend payout.

[Insert Table 9, about here]

7. Conclusion

The question as to whether taxes have an influence on the payout decision has been an on-going discussion, especially as tax regimes are far from stable over time (Allen and Michaely, 2003, DeAngelo et al., 2008). This paper documents the major changes to the UK tax system – especially the tax on dividends and capital gains tax - over the past two decades and asks whether the payout channel choice is influenced by those tax regime changes. We calculate the after-tax values of dividends and share repurchases (relative to the case of earnings retentions) for different types of shareholders (individuals, pension funds and other institutional investors, and corporations) over time while considering the changing income tax rates, corporation taxes, and the tax treatment of dividends and share repurchases. We show that individual shareholders within the highest income tax bracket would have been best off investing in a firm retaining all its earnings, but in case the firm decided to distribute cash share repurchases was the preferred channel across all tax regimes over the past two decades. Until 1997, tax-exempt investors such as pension funds and charities have a strong preference for dividends because of a tax credit they could recuperate, but subsequently became neutral to dividend payout, share repurchases, or no payout (from a tax perspective). The situation for corporations is consistent over time: due to the fact that the dividends that corporations receive are tax-exempted, this form of payout dominated share repurchases. Yet, share repurchases became somewhat more attractive in after-tax value terms subsequent to 1999 due to a reduction in the corporation tax rate on chargeable gains.

We estimate the effect of the tax treatment of dividends and share repurchases on the corporate payout decision while considering ownership concentration by type of shareholder, the top management's remuneration contracts, investor and market sentiment, board structure, various CEO traits, and a firm's cash flows, profitability, size, leverage, risk, and growth opportunities. We find that the attractiveness of dividends (relative to earnings retentions) declines over time (since 1997) and that share repurchases were more desirable in more recent tax periods (from 2002 onwards).

While we expected that there would be a tax-induced tax preference for retained earnings for higher tax rate individuals (over the last two decades) and in case of a payout a tax-preference for share repurchases over dividends, we find the opposite: individuals were indifferent between no payout and dividends, and preferred no payout or dividends over share repurchases. Our tax

analysis predicted that pension funds had a strong preference for dividends (relative to no payout or share repurchases) and became neutral after 1999. Again, we find that this is not sustained: pension funds opt for no payout rather than dividends or share repurchases, and when the firm pays out cash, they prefer dividends over share repurchases. Corporations were expected to be neutral between dividends and earnings retention over the sample period but in case of a payout, to prefer dividends to share repurchases. We have shown that corporations' relative tax measure is positively and significantly related to dividends (and negatively to no payout). Corporations relative tax measure is also positively related to share repurchases, and hence negatively to the cases of no payout (column (2)) and dividends (column (3)). Thus, these findings are again contradicting our tax-based conjectures. We have to conclude that there is no evidence of tax-induced clientele effects for corporate payout decisions.

We have also studied the switch between dividends and share repurchases, conditional on past dividend payout, and in a context of changing tax regimes. From a taxation perspective, we expect that the attractiveness of dividends (relative to share repurchases) was lower in 1997, increased again in 1999, but declined as of 2002. We observed that past dividend payout is strongly persistent and that changes in taxation rules do affect the payout channel choice. We do find that changes in tax regimes do indeed induce changes in the payout channel, but this is not related to the presence of specific types of equityholders.

Finally, we ask whether taxes have an effect on the aggregate level of dividend payout. From our partial adjustment dividend payout model, which includes the relative taxation preferences (dividend taxes relative to capital gains), we learn that the tax preference parameters of individuals, pension funds, and corporations do not explain the aggregate dividend payment.

Overall, we find that equity-based compensation received by the CEO and investor sentiment in the form of optimism reduces the dividend payout and increase the use of share repurchases. We also report that larger firms prefer to pay out earnings and mostly opt for dividends (rather than share repurchases). Profitable and cash-rich firms avoid earnings retention and opt for share repurchases (rather than for dividends). Still, the main conjectures of this paper are rejected because we find no evidence of tax-induced clienteles, as firms do not cater to the tax preferences of their shareholders.

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Figure 1. Payout Channels over Time

The figure presents the frequency of the use of specific payout channels (dividends, share repurchases, combined payout, i.e. both dividends and share repurchases), as well as the frequency that firms do not pay out earnings. The data are extracted from Boardex and Zephyr.

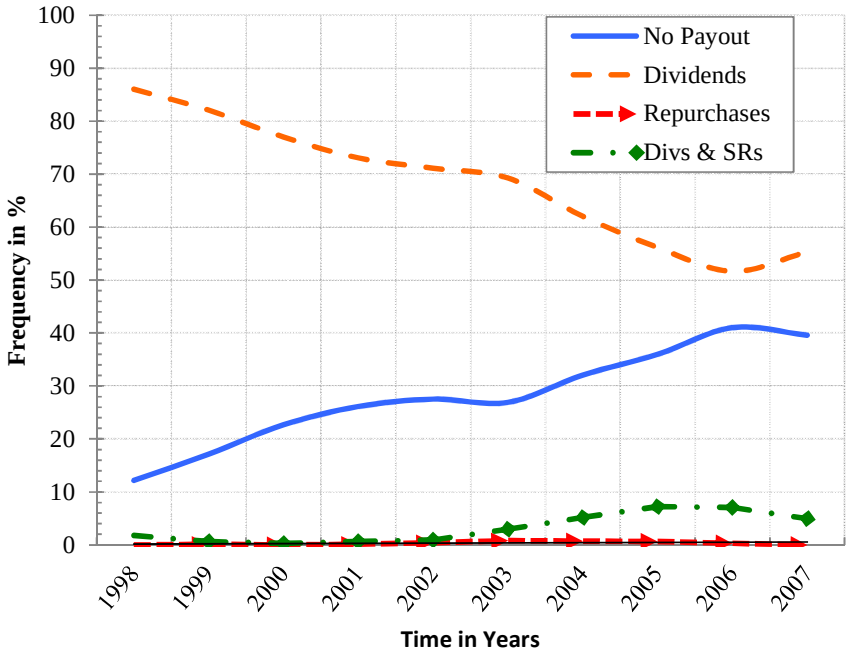

Figure 2. Payout by Payout Channel

The figure shows the amounts paid out divided by EBIT (provided that EBIT>0). The raw data are extracted from Boardex and Zephyr.

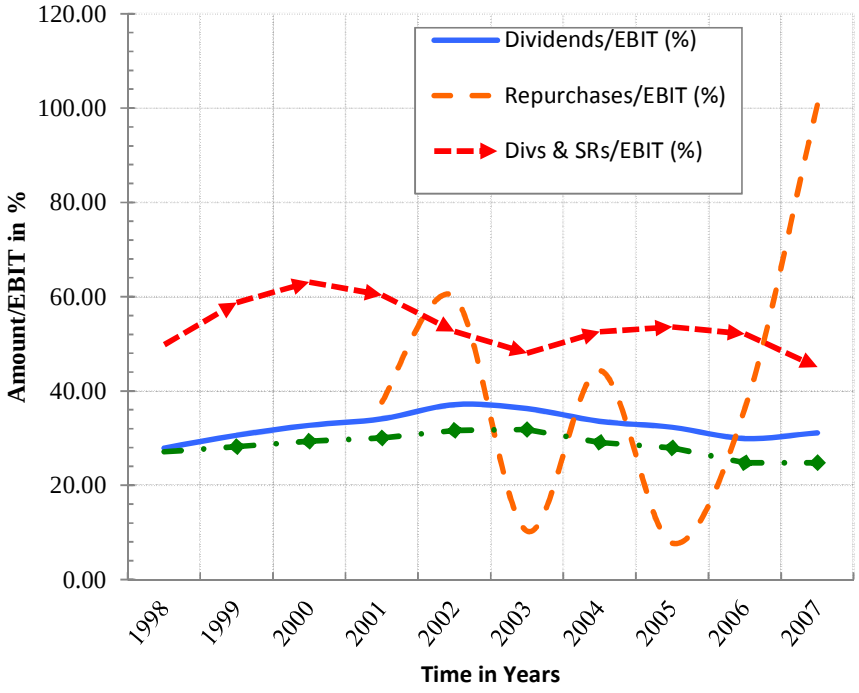

Table 1. The Frequency of Payout Channel Choice and Average Payout by Company Size

Panel A documents the frequency of payout channel choice by stock index membership (based on firm-year observations for the period 1996-2007). Panel B reports the total amounts paid out (divided by EBIT) by payout channel. The data in Panel B are winsorized at the 5% level and are restricted to EBIT>0. The data are presented by index membership. The data are from annual reports and Zephyr.

Panel A (payout frequency)	**Total Sample**	**FTSE100**	**FTSE250**	**FTSESmallCap**	**FTSEFledgling**
No Payout (%)	28.06	7.61	13.54	22.17	39.05
(Number of Observations)	*(2,403)*	*(82)*	*(339)*	*(639)*	*(569)*
Dividends (%)	68.31	79.04	81.78	76.20	60.12
(Number of Observations)	*(5,850)*	*(852)*	*(2,047)*	*(2,196)*	*(876)*
Share Repurchases (%)	0.32	0.00	0.40	0.28	0.27
(Number of Observations)	*(27)*	*(-)*	*(10)*	*(8)*	*(4)*
Divids and Share Repurch. (%)	3.32	13.36	4.27	1.35	0.55
(Number of Observations)	*(284)*	*(144)*	*(107)*	*(39)*	*(8)*
Total (%)	100.00	100.00	100.00	100.00	100.00
(Number of Observations)	*8,564*	*1,078*	*2,503*	*2,882*	*1,457*
Panel B (% paid out)	**Total Sample**	**FTSE100**	**FTSE250**	**FTSE SmallCap**	**FTSEFledgling**
No Payout /EBIT (%)	0.00	0.00	0.00	0.00	0.00
(Number of Observations)	*(2,379)*	*(82)*	*(338)*	*(635)*	*(564)*
Dividends/EBIT (%)	26.97	30.57	27.96	25.84	23.22
(Number of Observations)	*(5,774)*	*(844)*	*(2,018)*	*(2,166)*	*(865)*
Share Repurchases/EBIT (%)	16.55	0.00	0.15	14.15	22.22
(Number of Observations)	*(23)*	*(0)*	*(7)*	*(6)*	*(4)*
Divs & SRs/EBIT (%)	47.06	44.74	50.77	42.06	58.61
(Number of Observations)	*(283)*	*(143)*	*(107)*	*(39)*	*(8)*
Total Number of Observations	8,459	1,069	2,470	2,846	1,441

Table 2. After-Tax Value of Dividends and Share Repurchases

This table documents the after-tax values of dividends and share repurchases of a nominal value of British Pounds 100. Table A covers period prior to September 21, 1994, Table B the period between September 21, 1994 and October 8, 1996, Panel C the period between October 8, 1996 and July 1, 1997, Panel D the period between July 1, 1997 and April 6, 1999, Panel E the period between April 6, 1999 and April 1, 2002, and Panel F the period after April 1, 2002. For each panel, we assume that companies pay corporation tax at the full rate. The category of pension funds includes insurrance and investment companies in respect of their pension business. Source: own calculations.

Panel A. The After-Tax Value of a Dividend and Share Repurchase of 100 prior to September 21, 1994

	Higher rate individual	Lower and basic rate individual	Pension fund	Corporation
Dividends	77	100	125	100
Share Repurchases	93	109	123	84

The tax rates for individual investors were 40% (higher rate) and 20% (lower and basic rate). The ACT rate on the dividend was equal to 22.5 %; the main rate of Corporation Tax was 33%.

Panel B. The After-Tax Value of a Dividend and Share Repurchase of 100 between September 21, 1994 and October 8, 1996

	Higher rate individual	Lower and basic rate individual	Pension fund	Corporation
Dividends	75	100	125	100
Share Repurchases	92	106	100	84

The tax rates for individual investors were 40% (higher rate) and 20% (lower and basic rate). The ACT rate on the dividend was equal to 20%; the main rate of Corporation Tax was 33%.

Panel C. The After-Tax Value of a Dividend and Share Repurchase of 100 between October 8, 1996 and July 1, 1997

	Higher rate individual	Lower and basic rate individual	Pension fund	Corporation
Dividends	75	100	125	100
Share Repurchases	92	106	100	84

The tax rates for individual investors were 40% (higher rate), 20% (lower rate), and 24% (basic rate). The ACT rate on the dividends was equal to 20%; the main rate of Corporation Tax was 33%.

Table 2: Cont'd.

Panel D. The After-Tax Value of a Dividend and Share Repurchase of 100 between September 21, 1994 and October 8, 1996

	Higher rate individual	Lower and basic rate individual	Pension fund	Corporation
Dividends	75	100	125	100
Share Repurchases	92	106	100	84

The tax rates for individual investors were 40% (higher rate) and 20% (lower and basic rate). The ACT rate on the dividend was equal to 20%; the main rate of Corporation Tax was 33%.

Panel E. The After-Tax Value of a Dividend and Share Repurchase of 100 between April 6, 1999 and April 1, 2002

	Higher rate individual	Lower and basic rate individual	Pension fund	Corporation
Dividends	75	100	100	100
Share Repurchases	90	103	100	85

The tax rates for individual investors were 40% (higher rate), 23% (lower rate), and 10% (basic rate). Dividends were chargeable at 10 % for lower/basic rate Tax payers and at 32.5% for higher rate taxpayers. ACT was abolished and the tax credit was cut to 10 %. The main rate of Corporation Tax was 30%.

Panel F. The After-Tax Value of a Dividend and Share Repurchase of 100 after April 1, 2002

	Higher rate individual	Lower and basic rate individual	Pension fund	Corporation
Dividends	67	89	100	100
Share Repurchases	90	97	100	85

The tax rates for individual investors were 40% (higher rate), 10% (lower rate), and 22% (basic rate). Dividends were chargeable at 10 % for lower/basic rate tax payers and at 32.5% for higher rate taxpayers. The tax credit was equal to 10%. The main rate of Corporation Tax was 30%.

Table 3. Payout Channel Switches

The table presents the frequencies of switching from one payout method to another from time t-1 to time t. The payout choices are: no payout, dividend payout, and share repurchases payout, including the combination of dividends and share repurchases. The raw data are from Datastream and Zephyr.

	Payout Channel at (t)			
Payout Channel at (t-1)	No Payout	Dividends	Share Repur-chases	Total
No Payout	1,243	190	12	1,445
(%)	*(86.02%)*	*(13.15%)*	*(0.83%)*	*(100%)*
Dividends	133	3,959	133	4,225
(%)	*(3.15%)*	*(93.7%)*	*(3.15%)*	*(100%)*
Share Repurchases	10	87	113	210
(%)	*(4.76%)*	*(41.43%)*	*(53.81%)*	*(100%)*
Total	1,386	4,236	258	5,880
(%)	*(23.57%)*	*(72.04%)*	*(4.39%)*	*(100%)*

Table 4. Tax-induced Payout Preferences (Dividends versus Capital Gains)

The table shows the average share of equity owned (columns (1), (4) and (7)), the ratio of after tax income from dividends over the after tax income from capital gains (columns (2), (5), and (8)), and the equity-weighted average investor tax preference parameter, following Poterba (2004) (columns (3), (6), and (9)), for individual investors, pension funds and corporations, respectively. The tax preference ratio is calculated as $\theta_{h,t} = \left[\left(1-\tau_{div,h,t}\right)/\left(1-\tau_{cg,h,t}\right)\right]$.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Average equity stake	After tax income from dividends / cap gains	Tax preference ratio (div vs share repur.)	Average equity stake	After tax income from dividends / cap gains	Tax preference ratio (div vs Share repur.)	Average equity stake	After tax income from dividends / cap gains	Tax preference ratio (div vs share repur.)
Year	(Non)executive directors and individuals	(Non)executive directors and individuals	(Non)executive directors and individuals	Pension funds	Pension funds	Pension funds	Industrials and institutions	Industrials and institutions	Industrials and institutions
1997	10.0%	82.0%	9.0%	0.0%	125.0%	0.0%	23.0%	119.0%	28.0%
1998	8.0%	82.0%	8.0%	0.2%	100.0%	0.0%	30.0%	119.0%	35.0%
1999	8.0%	83.0%	8.0%	0.2%	100.0%	0.0%	27.0%	119.0%	32.0%
2000	11.0%	83.0%	12.0%	0.2%	100.0%	0.0%	29.0%	118.0%	34.0%
2001	11.0%	83.0%	12.0%	0.3%	100.0%	0.0%	27.0%	118.0%	31.0%
2002	11.0%	83.0%	12.0%	0.2%	100.0%	0.0%	27.0%	118.0%	32.0%
2003	10.0%	74.0%	10.0%	0.3%	100.0%	0.0%	29.0%	118.0%	34.0%
2004	9.0%	74.0%	9.0%	0.4%	100.0%	0.0%	25.0%	118.0%	29.0%
2005	9.0%	74.0%	9.0%	0.4%	100.0%	0.0%	25.0%	118.0%	30.0%
2006	10.0%	74.0%	10.0%	0.4%	100.0%	0.0%	28.0%	118.0%	33.0%
2007	9.0%	74.0%	9.0%	0.4%	100.0%	0.0%	30.0%	118.0%	36.0%

Table 5. Payout Channel Choice and Tax Regimes

The table presents a multinomial logit regression of the payout channel choice (no payout, dividends, share repurchases & dividends and share repurchases) on taxation, ownership concentration, managerial remuneration, investor sentiment, and other control variables (such as corporate governance, size and performance measures). Definitions of the included variables are given in the appendix of the paper. Panel A assumes no payout as base case. Panel B assumes dividend payout as base case. The data are extracted from Datastream and Zephyr.

	Panel A: Base Outcome is no payout				**Panel B:** Base Outcome is dividends	
	(1) Dividends		(2) SR/Dividends + SR		(3) SR/Dividends + SR	
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
Taxation						
Tax Period 1 (1997-1998)	0.973**	0.010	0.261	0.651	-0.792*	0.090
Tax Period 2 (1999-2001)	0.300**	0.045	-2.377***	0.000	-2.709***	0.000
Ownership						
CEO ownership	-0.021**	0.030	-0.020	0.131	0.001	0.962
Non-executive ownership	0.000	0.995	0.000	0.989	0.001	0.965
Executive ownership (excl. CEO)	0.012	0.296	0.001	0.962	-0.010	0.707
Institutional ownership	-0.004	0.290	-0.009	0.220	-0.005	0.476
Individual & Families ownership	0.027*	0.053	-0.030	0.278	-0.054**	0.034
Corporate ownership	-0.026***	0.000	-0.020**	0.029	0.005	0.465
Pension fund ownership	0.000	0.996	0.035	0.590	0.032	0.584
Remuneration						
Salary/Assets	-0.066***	0.005	-0.224**	0.019	-0.159	0.140
Bonus/Assets	-0.031	0.395	-0.134	0.249	-0.142	0.267
Fees/Assets	-0.320	0.249	-14.840	0.557	-15.688	0.607
Option/Assets	-0.023***	0.010	0.001	0.678	0.052***	0.008
Restricted Stock/Assets	-0.010*	0.076	-0.034	0.202	-0.013	0.352
Miscellaneous/Assets	-0.132	0.448	-0.130	0.699	0.163	0.448
Other/Assets	-0.116*	0.064	-0.070	0.462	0.063	0.277
Sentiment						
Dividend Premium	-0.053	0.402	0.014	0.893	0.059	0.496
Trading Vol. /Sh. Out	-0.172**	0.011	0.020***	0.000	0.249***	0.003
Momentum (t-1)	0.325	0.811	1.109	0.654	1.071	0.635

Table 5: Cont'd.

	Panel A: Base Outcome is no payout				**Panel B:** Base Outcome is dividends	
	(1) Dividends		(2) SR/Dividends + SR		(3) SR/Dividends + SR	
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
Other Determinants						
FTSE100	1.125**	0.016	2.097***	0.000	1.035***	0.002
FTSE250	0.665***	0.002	0.451	0.128	-0.168	0.460
FTSE Small Cap	0.397**	0.018	-0.187	0.527	-0.572**	0.039
ROA	3.830***	0.000	9.133***	0.000	4.982***	0.000
Free Cash Flow/Assets (t-1)	8.270***	0.000	9.368***	0.000	2.525**	0.040
Market-to-book	0.006***	0.004	0.003	0.469	-0.003	0.353
Debt/Assets	0.572	0.323	-0.674	0.382	-1.339**	0.022
Var(CF)	0.057*	0.093	0.032	0.559	-0.032	0.451
Past Payout	0.012	0.713	0.005	0.874	-0.011	0.507
Boardsize	0.036	0.316	0.036	0.532	-0.002	0.965
Female (%)	0.550	0.625	0.604	0.692	0.090	0.941
CEO gender	0.177	0.716	-0.862	0.184	-1.059**	0.050
CEO age	0.034***	0.002	0.003	0.854	-0.031**	0.013
CEO tenure	0.043**	0.012	0.050**	0.043	0.012	0.501
Dividend Surprise (t-1)	-0.002	0.173	0.001	0.118	0.029	0.151
Industry dummies			Yes		Yes	
Log-Likelihood			-1877.729		-651.863	
R-squared			0.609		0.722	
Number of observations			4376		3386	

Table 6. Payout Channel Choice and Shareholder Classes by Tax Regime

The table presents a multinomial logit regression of the payout channel choice (no payout, dividends, share repurchases & dividends and share repurchases) on taxation, remuneration, sentiment and other determinants. The taxation variables include dummies for the periods 1997/98 and 1999-2001. Panel A assumes no payout as base case. Panel B assumes dividend payout as base case. The data are extracted from Datastream and Zephyr.

	Panel A: Base Outcome is no payout				**Panel B:** Base Outcome is dividends	
	(1) Dividends		(2) SR/Dividends + SR		(3) SR/Dividends + SR	
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
Taxation						
Tax Period 1 (1997-1998) (TP1)	0.865	0.161	0.237	0.754	-0.706	0.164
Tax Period 2 (1999-2001) (TP2)	0.341	0.256	-3.143***	0.000	-3.538***	0.000
CEO ownership	-0.022**	0.029	-0.019	0.134	0.002	0.904
CEO ownership * TP1	-2.041	0.232	-3.265	0.102	-1.056	0.209
CEO ownership * TP2	0.015	0.725	-0.296	0.156	-0.317	0.117
Non-exec. ownership	0.004	0.652	0.004	0.854	0.001	0.953
Non-exec. ownership * TP1	0.027	0.899	0.623	0.143	0.633	0.136
Non-exec. ownership * TP2	-0.019	0.320	-0.269	0.169	-0.232	0.199
Exec. ownership (excl. CEO)	0.016	0.176	0.006	0.819	-0.008	0.764
Exec. ownership * TP1 (excl. CEO)	2.013	0.228	1.720	0.309	-0.338	0.283
Exec. ownership * TP2 (excl. CEO)	-0.013	0.665	-0.003	0.967	0.010	0.849
Institutional ownership	-0.006	0.170	-0.013*	0.096	-0.008	0.283
Institutional ownership * TP1	0.003	0.858	0.001	0.974	-0.003	0.867
Institutional ownership * TP2	0.010	0.299	0.063***	0.000	0.054***	0.000
Individual & Fam. ownership	0.029*	0.080*	-0.033	0.289	-0.059**	0.042
Individual & Fam. ownership * TP1	-0.031	0.502	0.055	0.337	0.085*	0.056
Individual & Fam. ownership * TP2	-0.002	0.935	-29982.736***	0.000	-30011.186	.
Corporate ownership	-0.025***	0.000	-0.019**	0.050	0.006	0.487
Corporate ownership * TP1	0.004	0.797	-0.004	0.860	-0.007	0.729
Corporate ownership * TP2	-0.010	0.410	-0.014	0.679	-0.001	0.969
Pension fund ownership	0.027	0.562	0.071	0.306	0.044	0.439
Pension fund ownership * TP1	-0.372	0.108	-13.851***	0.000	-10.620	.
Pension fund ownership * TP2	-0.180**	0.039	-12.922***	0.000	-14.017	.
Remuneration	Yes		Yes		Yes	
Sentiment	Yes		Yes		Yes	
Other Determinants (size, profit, leverage, risk, CEO traits)	Yes		Yes		Yes	
Industry dummies		Yes			Yes	
Log-Likelihood		-1865.104			-644.944	
R-squared		0.612			0.725	
Number of observations		4376			3386	

Table 7a. Payout Channel Choice and Tax-induced Relative Payout Attractiveness

The table presents a multinomial logit regression of the payout channel choice. The relative taxation variables capture the tax-induced preferences of a specific payout choice based on the relative tax burden on dividends and capital gains for different types of shareholders. In Panel A, the tax measure is the after-tax value of dividends divided by the after-tax value after capital gains tax $\theta_{h,t} = \left[\left(1-\tau_{div,h,t}\right)/\left(1-\tau_{cg,h,t}\right)\right]$. In Panel B, we multiply the relative taxation measure with the relative importance of a shareholder class $\theta_{h,t} = w_{h,t}\left[\left(1-\tau_{div,h,t}\right)/\left(1-\tau_{cg,h,t}\right)\right]$ (see Section 5.2). The raw data are from Datastream and Zephyr.

	Panel A: Base Outcome is no payout				**Panel B:** Base Outcome is dividends	
	Dividends		SR/Dividends + SR		SR/Dividends + SR	
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
Taxation						
Individuals' relative attractiveness (IRA)	2.408	0.110	-25.207***	0.000	-27.657***	0.000
Pension funds' relative attractiveness (PRA)	-66.658**	0.030	-166.54***	0.001	-95.049**	0.017
Corporations' relative attractiveness (CRA)	55.506**	0.033	152.874***	0.000	93.125***	0.007
Ownership	Yes		Yes		Yes	
Remuneration	Yes		Yes		Yes	
Sentiment	Yes		Yes		Yes	
Other Determinants	Yes		Yes		Yes	
Industry dummies		Yes			Yes	
Log-Likelihood		-1800.406			-624.4	
R-squared		0.626			0.733	
Number of observations		4379			3386	

Table 7b. Payout Channel Choice and Tax-induced Relative Payout Attractiveness by Shareholder Type

	Panel A: Base Outcome is no payout				**Panel B:** Base Outcome is dividends	
	Dividends		SR/Dividends + SR		SR/Dividends + SR	
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
Taxation						
Individuals' relative attractiveness (IRA)	2.483	0.159	-24.976***	0.000	-27.472***	0.000
Pension funds' relative attractiveness (PRA)	-55.894	0.224	-151.941**	0.013	-94.355**	0.033
Corporations' relative attractiveness (CRA)	46.299	0.234	140.269***	0.007	92.386**	0.015
CEO ownership	-0.122	0.371	1.327	0.270	1.577	0.220
CEO ownership * IRA	0.258	0.442	-2.351	0.152	-2.840	0.103
Non-executive ownership	0.020	0.886	0.233	0.470	0.147	0.630
Non-executive ownership * IRA	-0.027	0.884	-0.302	0.476	-0.186	0.648
Executive ownership (excl. CEO)	0.111	0.559	-0.4*	0.077	-0.552***	0.000
Executive ownership * IRA (excl. CEO)	-0.127	0.606	0.54*	0.055	0.722***	0.000
Institutional ownership	-0.311	0.808	-0.654	0.745	-0.088	0.960
Institutional ownership * CRA	0.260	0.811	0.549	0.748	0.072	0.961
Individual & Families ownership	0.087	0.623	-0.096	0.874	-0.119	0.854
Individual & Families ownership * IRA	-0.077	0.734	0.089	0.911	0.084	0.921
Corporate ownership	-0.267	0.827	-0.173	0.921	0.062	0.972
Corporate ownership * CRA	0.205	0.843	0.129	0.931	-0.049	0.974
Pension fund ownership	0.001	0.971	0.020	0.757	0.012	0.833
Pension fund ownership * PRA	-	-	-	-	-	-
Remuneration	Yes		Yes		Yes	
Sentiment	Yes		Yes		Yes	
Other Determinants	Yes		Yes		Yes	
Industry dummies		Yes			Yes	
Log-Likelihood		-1848.303			-622.026	
R-squared		0.616			0.735	
Number of observations		4376			3386	

Table 8. Switching Payout Channels and Changing Taxation Regimes

The table presents a dynamic probit model on dividend payout versus share repurchase payout. The independent variables comprise the dividend policy in the previous period (dummy equals one in case of dividend payout), taxation, remuneration, ownership, sentiment, and other determinants. The raw data are from Datastream and Zephyr.

	Coefficient	p-value	Coefficient	p-value
Taxation				
Tax Period 1 (1997-1998)			0.182	0.778
Tax Period 2 (1999-2001)	0.795***	2.956	0.977***	5.731
Tax Period 3 (2002-2007)	-0.182	-0.778		
Past Dividend Policy				
Div (t-1)	1.519***	12.942	1.519***	12.942
Ownership	Yes		Yes	
Remuneration	Yes		Yes	
Sentiment	Yes		Yes	
Other Determinants	Yes		Yes	
Industry	Yes		Yes	
Constant	1.401*	1.892	1.219*	1.659
Log-likelihood	-519.529		-519.529	
N	3269		3269	

Table 9. Aggregate Dividend Payout

The table shows the results from a partial adjustment model on aggregate dividend payout. The explanatory variables are lagged dividends and profit, changes in profit, the (changes in) aggregated tax-preference parameters for the main investor classes (individual investors, pension funds and corporate investors $\theta_{h,t} = w_{h,t}\left[\left(1-\tau_{div,h,t}\right)/\left(1-\tau_{cg,h,t}\right)\right]$. Panel A is based on panel data, and Panel B on aggregate data. The raw data are from Datastream and Zephyr.

	Cross-section		Panel	
Δln(Div_t)	Coef.	P>t	Coef.	P>t
Δln(Profit_t)	0.000	0.977	-0.251***	0.000
Δln(θ_Individual,t)	0.075	0.369	-0.105**	0.037
Δln(θ_Pension fund,t)	0.028	0.672	-0.007	0.940
Δln(θ_Corporation,t)	0.230	0.146	0.118	0.125
ln(Div_t-1)	-0.062***	0.000	-0.012	0.501
ln(Profit_t-1)	0.014	0.328	-0.104*	0.086
ln(θ_Individual,t-1)	-0.002	0.986	-0.009	0.596
ln(θ_Pension fund,t-1)	0.097	0.129	0.021	0.833
ln(θ_Corporation,t-1)	0.003	0.989	-0.085	0.131
Constant	0.626	0.391	-0.081	0.806
	F(9, 785) =	14.79	F(9, 49) =	2.35
	R-squared =	0.0614	R-squared =	0.2813
	# (Obs) =	3146	# (Obs) =	86

Appendix A

Panel A: Payout and Taxation

No Payout	One outcome of a multivariate variable indicating no payout (Y=0).Source: *Zephyr*.
Dividends	One outcome of a multivariate variable indicating dividend payout (Y=1). Source: *Zephyr*.
Share Repurchases	One outcome of a multivariate variable indicating share repurchases (Y=2). Source: *Zephyr*.
Dividends and Share Repurchases	One outcome of a multivariate variable indicating dividends and share repurchases (Y=3)..
Dividends/EBIT	B value of dividend payout divided by EBIT. Source: *Datastream*.
Share Repurchases/EBIT	Balue of share repurchases divided by EBIT. Source: *Datastream* and *Zephyr*.
Divs & SRs/EBIT	Value of dividends and share repurchases divided by EBIT. Source: *Datastream* and *Zephyr*.
Tax Period 1 (1997-1998)	Dummy equal to 1 for period 1997-98. Source: Own calculations.
Tax Period 2 (1999-2001)	Dummy equal to 1 during for period 1999-2001. Source: Own calculations.
Tax Period 3 (2002-2007)	Dummy equal to 1 for period 2002-2007. Source: Own calculations.
Theta	Equity-weighted average investor tax preference parameter.

Panel B: Ownership

CEO Ownership	Percentage of equity held by CEO. Source: *BoardEx.*
Executive Ownership (excl. CEO)	Percentage of equity held by executive directors (excl. CEOs). Source: BoardEx.
Non-executive Ownership	Percentage of equity held by the non-executive directors. Source: *Manifest.*
Institutional Ownership	Percentage of equity held by financial institutions (banks, invest. banks, invest. trusts, insurance co's, mutual funds, venture capital). Source: *BoardEx.*
Individual & Families Ownership	Percentage of equity held by individuals and families. Source: *Manifest*.
Corporate Ownership	Percentage of equity held by corporations. Source: *BoardEx.*
Pension Fund Ownership	Percentage of equity held by pension funds. Source: *BoardEx.*

Panel C: Remuneration

Salary(/Assets)	Fixed remuneration paid to executive directors (including CEOs). Source: *Boardex*.
Bonus(/Assets)	Remuneration based on past performance and paid out annually. Source: *Boardex*.
Fee(/Assets)	Fixed remuneration (predominantly paid to non-executive directors). Source: *Boardex*.
Option(/Assets)	The Black-Scholes value of stock options. Source: Own calculations based on *Boardex*.
Restricted Stock(/Assets)	Balue of restricted stock. Source: Own calculations based on *Boardex*.
Miscellaneous(/Assets)	Sum of transaction bonus, deferred cash bonus, severance pay, recruitment bonus, and relocation bonus. Source: *Boardex*.
Other(/Assets)	Additional remuneration, such as insurance payments. Source: *Boardex*.

Panel D: Sentiment

Dividend Premium	Logarithm of the average market-to-book ratio of dividend payers minus non-dividend payers. Source: Own calculations based on *Datastream.*
Trading Vol./Sh. Out	Trading volume divided by shares outstanding. Source: Own calculations based on *Datastream*.
Momentum (t-1)	Lagged momentum variable, calculated on nested sorts as a Fama-French-Carhart factor. Source: *Style Research ltd.*

Panel E: Other Determinants

Assets (in £'000)	Book value of total assets. Source: *Datastream*.
EBIT (in £'000)	Earnings before Interest and Taxes. Source: *Datastream.*
FTSE100	Dummy equal to 1 if firm is member of FTSE 100. Source: *Datastream*.
FTSE250	Dummy equal to 1 if firm is member of FTSE 250. Source: *Datastream.*
FTSE Small Cap	Dummy equal to 1 if firm is member of FTSE Small Cap. Source: *Datastream*.
ROA (in %)	Return on assets. Source: *Datastream.*
Free Cash Flow/Assets (t-1)	Lagged value of free cash flows divided by assets. Source: *Boardex*.
Market-to-book	Market capitalization of equity divided by book value of equity. Source: *Datastream*.
Debt/Assets	Total debt divided by common equity. Source: *Datastream.*
Var(CF)	Variance of cash flows per share. Source: *Datastream.*
Boardsize	The number of directors on the board. Source: *Boardex* and annual reports.
Female (%)	Binary variable equals 1 in case of female director and 0 otherwise. Source: *Boardex*.
CEO gender	Dummy equal to 1 if CEO is male, and 0 otherwise. Source: *Boardex*.
CEO age	Age of CEO. Source: *Boardex*.
CEO tenure	Number of years CEO has served in current position. Source: *Boardex*.
Dividend Surprise (t-1)	Difference between actual dividend paid and estimated 12-month forward dividend lagged by one year. Source: Own calculations based on *Datastream*

Appendix B: Taxation in Practice (→ will be an online appendix)

Given that the tax regulation (and the evolution of the taxation principles over time) is complex, we present some numerical examples for the different types of investors by tax regime. For this purpose, we make several assumptions: a company has earnings after tax of £5 and 100 shares outstanding at a share price of £1. It considers paying out £5 either through a dividend of 5p per share or a share repurchase of 5 shares at the current market price of £1. Assume that the original issue price (the price at which an investor purchased in the past) of the share is 20p per share and that the original purchase price of the share plus an indexation allowance ('investor cost base') as well as the 'acquisition cost' of shares for corporations are equal to 50p. The marginal tax rate of the UK individual investor – the sole shareholder - is noted t and equal to 20% for an individual taxed at the starting rate of income tax, and equal to 40% for a high tax-bracket individual in 1993. In the same year, the main corporation tax rate is equal to 33%. Dividends are always expressed net of the basic rate of income tax. The 'gross equivalent' of a dividend (net dividend paid plus tax credit) is calculated following Bank et al. (2004) as: $(1 - t_d)$, with t_d being the tax rate on distributed profits. It is important to note, that individuals may benefit from annual exemptions, while this is not the case for corporations. Moreover, the tax position for individuals and corporate shareholders may be different if the corporate shareholder is a dealer, or if the special treatment for the purchase of own shares by an unquoted company applies. We will, however, not consider these special cases in the examples worked-out below. We embark by describing the situation for individual investors by tax regime, before we turn to pension funds, and finally to corporations.

1. Taxation of Individuals

We assume that the individual investor owns the entire share capital. When calculating his overall taxable income, the individual has to include the total dividend paid by the corporation plus the associated Advanced Corporation Tax (ACT), and any tax credit that the corporation received on dividends (Gammie, 1998). In other words, the individual is liable to income tax on the gross dividend. If the shareholder pays tax at or below the basic rate (the basic income tax limit is £23,700[33] for the 1993-94 tax year), double taxation is eliminated because the tax liability is reduced by the tax credit received. If the individual pays tax at the higher rate), he is liable to tax at the higher rate of 40% on (gross) dividend income, of which 22.5% of tax credit can be deducted. There is a personal income allowance, i.e. an amount that is not liable to income tax, of £3,445[34] in 1993-94. Capital gains are generally taxed at the top tax bracket of an individual's income with an annual exempt amount of £5,800 and a lower and basic rate of 20% (for the first £23,700) and a top rate of 40% in 1993-94.[35]

1.1. From 1993: ACT & tax credit: 22.5%, Income Tax: 20%/40%

Dividend payments:

If the company distributes a pre-corporation tax dividend of £5, it has to pay ACT levied at a rate of 22.5% on the distributed profits ('gross dividend'), i.e. £5 × 9/31 = £1.45.[36] The corporation offsets this ACT against its mainstream corporation tax obligation and gives a tax credit equal to this amount to the shareholder. The individual shareholder is liable to income tax on the amount of the gross dividend

[33] If, after deducting the Personal Allowance (see below) from total income, the non-savings income does not exceed £23,700, the basic income tax rate applies.
[34] The amount of Personal Allowance may vary depending on age and marital status.
[35] Capital gains are taxed at the top income tax for lower and high tax-bracket individuals. Basic tax bracket individuals are liable to capital gains tax at 20 percent, while being liable to income tax at a rate of 25 percent.
[36] See: http://www.hmrc.gov.uk/manuals/ctmanual/CTM20510.htm.

distributed of £6.45 (i.e. the aggregate of dividend and tax credit). Income tax is then calculated as: £6.45 × 20% = £1.29.[37] The resulting tax liability for the lower and basic rate individual is fully satisfied by the tax credit from the company, i.e. the after-tax value of a dividend is then equal to £5.16. The value of the dividend to the individual after personal taxes (t) can be summarized as: £5 - £6.45 × t + £1.45 = £6.45 - £1.29 = £5.16. For a higher rate individual who is liable to income tax at a rate of 40%, the after-tax value of a dividend is: £5 - £6.45 × t + £1.45 = £6.45 - £2.58=£3.87. The lower after-tax value is due to a higher tax obligation after deducting the (same) tax credit that exceeds the one of a lower and basic rate individual by £1.13, or 17.5% of the gross dividend.

Off-market repurchases:

The difference between the repurchase price, £1, and the original subscription price, 20p, is defined as the 'distribution element'. As in the case of dividends, the corporation has to pay ACT on the gross 'dividend' at a rate of 22.5%. Hence, in our example, the total distribution element is £(1 - 0.2) 5 = £4, and the corporation has to pay 9/31 × £4 = £1.16, which it can offset against mainstream corporation tax. The ACT can then be used as a tax credit: the selling investor who pays a tax of £5.16 × t, where t refers to the personal tax rate on the grossed-up 'dividend', can claim a tax credit of £1.16, so that the net tax paid on the distribution element is £5.16t - £1.16. The difference between the investor's cost base (50p) and the original issue price of the shares (20p) on his 10 shares is considered a capital loss of £5 (0.50 - 0.20) = £1.5, which is subject to ordinary income tax. A capital loss can only be offset against capital gains. Hence for individual investors, the value of a £5 repurchase is worth (in £): $5 – (5.16 \times t – 1.16) + 1.5 \times t = 6.16 – 3.66 \times t$. At a personal tax rate of 20%, this yields a value of £5.43. At a personal tax rate of 40%, this yields a dividend value of £4.67.

On-market repurchases:

When an investor sells his shares on-market, he does not know that he sells his share to the company and hence his profits are taxed as a capital gain and no tax credits can be claimed.[38] In this case, we cannot draw a general conclusion, as the attractiveness of the buyback program depends on the investor's capital gain tax liability. According to Rau and Vermaelen (2002), if the company repurchases 5/P shares at the market price P, and the investor had purchased the shares at an average price B, the total taxes (in £) owed after the repurchase are equal to [5 (P - B) / P] × t. There is generally no stamp duty on the purchase of the shares by an intermediary, by virtue of the intermediaries' exemption (subject to various conditions).[39] If the shares are held as capital assets[40] by the shareholder, the sale will constitute a disposal for the purposes of tax on capital gains, and a chargeable gain or an allowable loss may arise (subject to the anti-avoidance provisions of section 703 ICTA 1988).[41]

1.2 From 1994: ACT & tax credit: 20%, Income Tax: 20%/40%

Dividend payments:

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[37] According to HMRC, the basic rate of tax on dividend income is 20% for the tax year 1993-94 (see Table 4).
[38] This may be different if the market maker does not act as an intermediary principal.
[39] The intermediaries' exemption is subject to further conditions as detailed in Section 88 A of the Finance Act 1986.
[40] Capital assets include common kinds of investment such as shares in a company or units in a unit trust.
[41] While all chargeables arise from capital gains, not all capital gains give rise to chargeable gains. The distinction between the two is the necessary presence of three factors for a chargeable gain, including a chargeable person, a chargeable disposal, and a chargeable asset (Pointon & Spratley, 1988).

If the company distributes a pre-corporation tax dividend of £5, it has to pay ACT levied at a rate of 20% on the distributed profits ('gross dividend'), i.e. £5 × 1/4 = £1.25 (i.e. 20% of £6.25).[42] The corporation offsets this ACT against its mainstream corporation tax obligation and gives a tax credit equal to this amount to the shareholder. The individual shareholder is liable to income tax on the amount of the gross dividend distributed of £6.25 (i.e. the aggregate of dividend and tax credit). Income tax is then calculated as: £6.25 × 20% = £1.25. The resulting tax liability for the lower and basic rate individual is satisfied by the tax credit from the company, i.e. the after-tax value of a dividend is then equal to £5. The value of the dividend to the individual after personal taxes (t) can be summarized as: £5 - £6.25 × t + £1.25 = £6.25 - £1.25 = £5. For a higher rate individual, which is liable to income tax at a rate of 40%, the after-tax value of a dividend is: £5 - £6.25 × t + £1.25 = £6.25 - £2.5 = £3.75. The lower after-tax value is due to a higher tax obligation after deducting the (same) tax credit that exceeds the one of a lower and basic rate individual by £1.25, or 20% of the gross dividend.

Off-market repurchases:

As in the case of dividends, the corporation has to pay ACT on the 'distribution element' at a rate of 20%. Hence, in our example, the total distribution element is £(1 - 0.2) 5 = £4, and the corporation has to pay 1/4 × £4 = £1 (i.e. 20% of £5), which it can offset against mainstream corporation tax. The ACT can then be used as a tax credit: the investor who pays a tax of £5 × t on the grossed-up 'dividend' (where t refers to the personal tax rate) can claim a tax credit of £1, so that the net tax paid on the distribution element is £5t - £1. The difference between the investor's cost base (50p) and the original issue price of the shares (20p) on his 5 shares is considered a capital loss of 5 × (£0.50 - £0.20) = £1.5, which is subject to ordinary income tax. Hence for lower and basic rate individuals, the value of a £5 repurchase is worth (in £): 5 – (5 × t – 1) + 1.5 × t = 6 – 3.5t, or at a personal tax rate of 20%: £5.3. At a personal tax rate of t = 40%, the value of the dividend would be equal to £4.6.

On-market repurchases:

The situation is similar to the one described above. Following Rau and Vermaelen (2002), the total taxes after the repurchase are equal to [5 (P - B) / P] t.

1.3 From 1999: ACT is cancelled, tax credit: 10%, Income tax: 10%/32.5%

Dividend payments:

The individual shareholder is liable to income tax on the amount of the gross dividend distributed of £5 and the tax credit is calculated as 1/9 × £5 = 0.56. Income tax is then calculated as: £5.56 × 10% = £0.56. The resulting tax liability for the lower and basic rate individual is satisfied by the tax credit from the company, i.e. the after-tax value of a dividend is then equal to £5. The value of the dividend to the individual after personal taxes (t) can be summarized as: £5 - £5.56 × t + £0.56 = £5.56 - £0.56 = £5. For a higher rate individual who is liable to income tax at a rate of 32.5%, the after-tax value of a dividend is equal to: £5 - £5.56 × t + £0.56 = £5.56 - £1.81 = £3.75. The lower after-tax value is due to a higher tax obligation that exceeds the one of a lower and basic rate individual by £1.25, or 22.5% of the gross dividend.

Off-market repurchases:

[42] See http://www.hmrc.gov.uk/manuals/ctmanual/CTM20510.htm.

In our example, the total distribution element is £(1 - 0.2) 5 = £4. The investor pays taxes of £4.44 × t on the grossed-up 'dividend' (where t refers to the personal tax rate) and can claim a tax credit of £0.44, so that the net tax paid on the distribution element is £4.44t - £0.44. The difference between the investor's cost base (50p) and the original issue price of the shares (20p) on his 10 shares is considered a capital loss of £5 (0.50 - 0.20) = £1.5, which is subject to the ordinary tax rate. Hence for individual investors, the value of a £5 repurchase is worth (in £): 5 – (4.44t – 0.44) + £1.5t = 5.44 – 2.94t, or at a personal tax rate of 10%: £5.15. At a personal tax rate of t=32.5%, the value of the dividend would be equal to £4.48.

On-market repurchases:

According to Rau and Vermaelen (2002), this can be calculated as: [5 (P - B) / P] t.[43]

2. Taxation of Pension funds

Dividend payments:

Prior to July 2, 1997, pension funds were entitled to a 20% tax credit on the tax-inclusive dividend, despite being exempted from income taxes on dividends and capital gains. Hence, a £5 dividend paid carried a tax credit of 1/4 × £5 = £1.25. Therefore, a dividend of £5 was worth £6.25 to a pension fund. After July 2, 1997, all tax credits for pension funds were eliminated. Hence, a £5 dividend was worth exactly 5 pounds.

Off-market repurchases:

Prior to September 1994, pension funds were entitled to a tax credit of 22.5% on the tax-inclusive distribution element of the repurchase. In our example, the distribution element was £(1 - 0.2) 5 = £4, yielding a tax credit to the shareholder of £4 × 9/31 = £1.16 in 1993.[44] Hence, for this investor, the £5 buyback was worth £6.16. After September 1994, the same buyback was worth £5 to this investor following the elimination of tax credits.[45]

On-market repurchases:

In on-market repurchases, no tax credit exists. Therefore, pension funds generally prefer off-market to on-market purchases.

3. Taxation of Corporate Shareholders

Dividend payments:

Corporate shareholders are not generally subject to corporation tax on income on a distribution from other UK-resident corporations.[46] Rather, these dividends form franked (i.e. taxed) investment income (FII). Accordingly, the after-tax value of a dividend of £5 to a corporate shareholder is equal to £5. A corporation itself, however, has to pay ACT on the dividends and can – in case it receives dividends from

[43]This may be different if the market maker does not act as an intermediary principal.

[44] See http://www.hmrc.gov.uk/manuals/ctmanual/CTM20510.htm.

[45] While shareholders should generally have preferred dividends over share repurchases, Rau and Vermaelen (2002) argue that off-market repurchases may have been appealing to pension funds for two reasons: First, by not selling in the open market, pension funds could realize a tax credit, and second, they could buy shares in the open market and tender them to the company, thereby realizing arbitrage profits. While the Inland Revenue has introduced anti-avoidance rules to prevent this type of arbitrage, Rau and Vermaelen (2002) doubt that these rules were effective.

[46] Income and Corporation Taxes Act (ICTA), 1988, s. 208.

a strategic investment in another firm - deduct the to these dividends attached tax credit from its own obligation to pay ACT.

Off-market repurchases:

In general terms, section 208 ICTA states that the distributions of UK resident companies are not chargeable to corporation tax. More precisely, while according to section 209(2)(b) ICTA the purchase of own shares qualifies as a distribution to the extent that the amount paid out by the corporation exceeds the repayment of capital in respect of the shares considered, section 209(6) clarifies that this is not the case for transfers of assets between UK resident companies that are not under common control. Hence, prior to 1989, the Inland Revenue held the view that '...the distribution element was not to be included in the consideration for the disposal of the shares for the purposes of the charge to corporation tax on chargeable gains' for corporate investors, which receive a distribution by means of a share repurchase from a UK resident corporation (Birla, 2003: 1). Therefore, the distribution (or capital gain) would not be liable to corporation tax, and would constitute franked investment income.[47] With the publication of a new Statement of Practice in April 1989 applicable to share buy-backs, it was decided that the whole consideration received (including the distribution element) was to be taken into account for the calculation of corporation tax on chargeable gains.[48] Despite the oppositional decision of the High Court that overturned the Revenue Practice, the Court of Appeal later affirmed the views of the Inland Revenue (Birla, 2004). In short, according to the Statement of Practice 4/89, the distribution element of share repurchases gives rise to chargeable gains and is thus subject to capital gains tax at the Corporation Tax rate, despite a distribution by a UK company being exempted from corporation tax on income by virtue of section 208 ICTA 1988 (later replaced by section 1285(1) CTA 2009). Chargeable gains are treated as additional profits for the accounting period in question with the amount to be included being the total amount of chargeable gains less allowable losses (subject to certain conditions) without the consideration of an annual exempt amount.[49]

The Finance Act 2009 has introduced a new corporation tax regime for distributions paid to a UK company on or after 1 July 2009 and section 1285 CTA 2009 has been repealed, i.e. UK sourced distributions are not longer exempted from Corporation Tax on income. However, as by the new rule, distributions of a capital nature are not covered, the new corporation tax rules do not apply to the distribution element of a share buyback. Recently, the government stated that the coverage would be extended to include capital.[50] In short, this means that all UK source distributions including capital would be liable to income corporation tax unless expressly stated otherwise, i.e. the distribution element would be franked investment income.

On-market repurchases:

The situation is similar to the one detailed above for individuals. Again, general conclusions are not possible, as the attractiveness of the buyback program depends on the shareholder's capital gain tax liability. If the company repurchases 5/P shares at the market price P, and the corporate shareholder purchased the shares at an average price B, the total taxes (in £) owed after the repurchase are equal to [5 (P - B) / P] t.

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[47] After-tax income distributed from one UK-resident company to another.
[48] See Statement of Practice, 4/89. Note: Special rules apply for investment trusts and authorized unit trusts that are not considered here. See also Taxation of Chargeable Gains Act 1992, s. 1(2).
[49] Taxation of Chargeable Gains Act 1992, s. 8.
[50] Practical Law Company, Practice note: 'Share buybacks: tax.'

3.1 From 1993: Corporation Tax: 33%

Off-market repurchases:

In our example, the 5 shares were bought back at a purchase price of £1 per share, while the original subscription price was 20p per share and the total acquisition cost of shares were £2.5 (5 × 50p). Accordingly, the distribution element is £4 (5 (£1 - £0.2), and the capital element is £1.

A company engaging in a share repurchase has to pay ACT on this distribution element and can then transfer the associated tax credit to the corporate shareholder, which is, however, negligible.[51] In our example, the corporation has to pay 22.5% on the gross distribution element of £4, i.e. 9/31 £4 = £1.16 (which is equal to 22.5% of the gross figure: £4 + £1.16). Where a company received a 'dividend' from another UK company, the ACT payment was reduced accordingly: ACT paid = ACT fraction × (dividends paid - dividends received).[52]

Concerning the corporate shareholder, the Special Commissioners held that the distribution is to be included as consideration for the disposal of the share. The disposal gives rise to chargeable gains, which are subject to the corporation tax rate (Statement of Practice (SP) 4/89). According to SP 4/89, the corporation tax can be calculated as the buyback purchase price less the acquisition cost of shares. Hence, at the main corporation tax rate of 33%, the company has to pay corporation tax on chargeable gains of: (£5 - £2.5) 0.33 = £0.825.53 Therefore, the after-tax value of an off-market share repurchase to a corporate shareholder was equal to: £5 - £0.825 = £4.18.

3.2 From 1994-1996: Corporation Tax: 33%

Off-market repurchases:

Similar to the calculation detailed above, the distribution element is £4 and the capital element is £1. Consequently, the corporation has to pay 20% of ACT on the gross capital gain of £4, i.e. 20/80 × £4 = £1 (equal to 20% on the gross amount £5 (£4 + £1). Where a company received a 'dividend' itself, the ACT payment was reduced accordingly: ACT paid = ACT fraction × (dividends paid - dividends received). At the applicable main corporation tax rate of 33%, the company has to pay corporation tax on chargeable gains of: (£5 - £2.5) 0.33 = £0.825.[54]

Therefore, the after-tax value of an off-market share repurchase to a corporate shareholder was equal to: £5 - £0.825= £4.18.

3.3 From 1996: Corporation Tax: 33%

Off-market repurchases:

Again, as detailed in the calculation above, the distribution element is £4 and the capital element is £1.The corporation has to pay 20% of ACT on the gross capital gain, i.e. 1/4 × £4 = £1, which is equal to 20% of the gross amount of £5(£4 + £1). At a current main corporation tax rate of 33%, the company has to pay corporation tax on chargeable gains of: (£5 - £2.5) 0.33 = £0.825 Pointon and Spratley (1988: 186) Therefore, the after-tax value of an off-market share repurchase to a corporate shareholder was equal to: £5 - £0.825 = £4.18.

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[51] The benefit being only of time value, as it solely affected the time pattern of the ACT set off (Devereux et al. 2004, Pointon, 7 May 2010).

[52] Income and Corporation Taxes Act 1988, s. 241.

[53] Pointon and Spratley (1988), p. 186.

[54] Pointon and Spratley (1988), p. 186.

3.4 From 1997: Corporation Tax: 31%

Off-market repurchases:

The situation is largely similar to the one presented above, i.e. the distribution element is £4 and the capital element is £1.The corporation has to pay 20% of ACT on the gross capital gain, i.e. 1/4 × £4 = £1. However, at a current main corporation tax rate of 31%, the company has to pay corporation tax on chargeable gains of: (£5 - £2.5) 0.31 = £0.775. Therefore, the after-tax value of an off-market share repurchase to a corporate shareholder was equal to: £5 - £0.775 = 4.22£.

3.5 From 1999: Corporation Tax: 30%

Off-market repurchases:

The situation is similar to the one presented above. However, at a current main corporation tax rate of 30%, the company has to pay corporation tax on chargeable gains of: (£5 - £2.5) 0.30 = £0.75. Therefore, the after-tax value of an off-market share repurchase to a corporate shareholder was equal to: £5 - £0.75 = 4.25£.

3.6 From 2002: Corporation Tax: 30%

Off-market repurchases:

Again, the situation is similar to the one presented above. However, at a current main corporation tax rate of 30%, the company has to pay corporation tax on chargeable gains of: (£5 - £2.5) 0.30 = £0.75. Therefore, the after-tax value of an off-market share repurchase to a corporate shareholder was equal to: £5 - £0.75 = £4.25. However, the introduction of the substantial shareholding exemption in 2002 should have contributed positively towards this after-tax value, as it permits UK companies to dispose of 'substantial shareholdings' free of Corporation Tax or CGT. This regime was very important to trading groups, as it provided an exemption on disposal of subsidiaries in trading groups. It was also important for the UK as a jurisdiction for holding companies. Without this exemption, taxable gains on participations would be taxable, which would obviously not work for holding companies.[55]

[55] Interview with Barbara Delputte (Tax Lawyer at Travers Smith, London).

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