Payout taxes and the allocation of investment ☆

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ABSTRACT

When corporate payout is taxed, internal equity (retained earnings) is cheaper than external equity (share issues). If there are no perfect substitutes for equity finance, payout taxes may therefore have an effect on the investment of firms. High taxes will favor investment by firms who can finance internally. Using an international panel with many changes in payout taxes, we show that this prediction holds well. Payout taxes have a large impact on the dynamics of corporate investment and growth. Investment is "locked in" in profitable firms when payout is heavily taxed. Thus, apart from any level effects, payout taxes change the allocation of capital.

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1. Introduction

Corporate payout, in the form of dividends or as repurchases of shares, is subject to taxation in most countries. Such taxes on corporate payout drive a wedge between the cost of internal and external equity (retained earnings and equity issues, respectively). Higher payout taxes raise the cost of capital for firms using external equity to fund investment relative to those using internal equity. Therefore, higher payout taxes are expected to "lock in" investment in profitable firms, at the expense of firms with investment opportunities which would require external equity financing to undertake.

The empirical relevance of this simple prediction has not been well tested. Despite the large amount of theoretical and empirical research about the effect of dividend taxes on the level of investment and on the valuation of firms (see, e.g., Auerbach, 1979a, 1979b; Bradford, 1981; Chetty and Saez, 2010; Feldstein, 1970; Guenther and Sansing, 2006; Harberger, 1962; King, 1977; Korinek and Stiglitz, 2009; Poterba and Summers, 1984, 1985), little is known about the effects of such taxes on the allocation of investment across firms. Yet, the theoretical prediction is very clear: higher payout taxes will increase the wedge between the cost of internal and external equity, and firms with more costly external financing will exhibit greater investment cash flow sensitivities. Put differently, payout taxes favor investment financed by retained earnings over investment financed by equity issues. This can matter for the productivity and nature of investment if (a)

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debt finance is an imperfect substitute for equity (in other words, if the Miller Modigliani propositions do not hold), (b) different firms have different investment opportunities, (c) the marginal investor is subject to taxation, and (d) firms make equity payouts while the tax is in effect. All these conditions have empirical support.[1] But are such frictions important enough for this to matter in practice for investment levels? This paper aims to test the extent to which the "lock in" effect of payout taxes matters empirically.

There are several challenges in testing how payout taxes affect the cross-firm allocation of investment. First, large changes in the US tax code are rare. The 2003 tax cut has provided a suitable natural experiment for testing how dividend levels responded to taxes (see Chetty and Saez, 2005; Brown, Liang, and Weisbenner, 2007), but investment is a more challenging dependent variable than dividends, so the experiment may not provide sufficient statistical power for examining investment responses. First, unlike dividends, investment is imperfectly measured by accounting data that, for example, leave out many types of intangible investment such as that in brands and human capital. This means that available empirical proxies (e.g., capital expenditures) are noisy estimates of the true variable of interest. Second, much investment is lumpy and takes time to build, so any response to tax changes is likely slow and more difficult to pinpoint in time. This suggests that a longer time window may be necessary (the payout studies used quarters around the tax change). Third, however, investment is affected by business cycles and other macroeconomic trends, so extending the window around a single policy change introduces more noise from other sources, and may not provide better identification.

We address these challenges by using an international dividend and capital gains tax data set covering 25 countries over the 19-year period 1990–2008 (Jacob and Jacob, 2012). This data set contains 15 substantial tax reforms and 67 discrete changes in the dividend or capital gains tax rate. With so many tax changes, we have sufficient variation to study the effects of payout taxes on the investment allocation. We use this tax database to test if the allocation of investment across firms with and without access to internal equity depends on payout taxes. We first run nonparametric (NP) tests that contrast the investment by the two groups of firms around tax reforms. We focus on events where payout taxes changed by at least three percentage points and compare the five years preceding the tax change with the two years following it. There are 15 events with payout tax reductions. The mean tax drop is 9.8 percentage points

(median 5.5). There are 14 tax increase events with a tax change of 8.4 percentage points (median 5.6). We sort firms into quintiles of the ratio of cash flow to assets in each country-year cell. We then calculate average investment over lagged assets for each quintile. There is no trend in investment for any of the quintiles during the five-year period preceding the tax events. After the tax cuts, we observe a significant convergence of the investment rate of high and low cash flow firms (top and bottom quintiles). In other words, firms with limited internal equity increase their investment relative to firms with plenty of internal equity. This is consistent with the tax wedge theory, and suggests that low taxes favor firms with limited access to internal equity. In contrast, following *increases* in payout taxes, there is a divergence of investment of high and low cash flow firms. The estimated effects appear large in both sets of tax reforms. On average, the difference in investment between low and high cash flow firms increases from 5.33% (of assets) to 7.59% following a payout tax increase—a 42% increase. When payout taxes are cut, the difference in investment falls from 7.27% to 5.54%—a decrease by 31%. In other words, for the typical large tax change, a large quantity of investment is estimated to get displaced. When taxes go up, investment flows from firms with limited access to internal equity to those with more internal equity, and vice versa for tax reductions. These nonparametric results are consistent with the predictions of the tax wedge theory.

Because the panel data set contains multiple tax change events, we can estimate not just the mean treatment effect of a tax change, but also ranges. Only two (three) of the 15 (14) tax decreases (increases) have difference-in-difference effects that are in conflict with our hypothesis. The other estimates agree with the tax wedge hypothesis, and many point estimates are large: one-third of tax decrease events reduce the difference in the investment rate of high and low cash flow firms by at least 2.5 percentage points. About 40% of the tax raises are associated with a point estimate for the increased wedge between high and low cash flow firms by more than 2.5 percentage points.[2] In other words, the effect of tax changes on the relative investment of firms varies quite a bit across events, and is sometimes large. We can also use the individual difference-in-difference point estimates to do nonparametric tests. For example, a sign test of the frequencies with which estimates are positive and negative suggests that we can reject that an increase and a decrease of the investment rate difference are equally likely after a tax increase (decrease) at the 5% (1%) level of statistical significance.

We also use linear regressions to produce parametric estimates of the effect of taxes on relative investment of rich and poor firms. Unlike the nonparametric tests, the regressions use data from all years, and can integrate both tax increases and decreases in the same specifications. The two methods also put different weight on observations