Financing Payouts [*] [†]

Joan Farre-Mensa
Harvard Business School

Roni Michaely
Cornell University
and *IDC*

Martin Schmalz
University of Michigan

June 29, 2015

[*] We would like to thank Malcolm Baker, Michael Faulkender (our UNC-Duke discussant), Alexander Ljungqvist, Uday Rajan, Matt Rhodes-Kropf, Toni Whited, Jeffrey Zwiebel, and seminar audiences at Harvard Business School, University of Kentucky, University of Michigan, Singapore Management University, IDC, VICIF, and the 2015 UNC-Duke Corporate Finance Conference. We thank Yingmei Cheng, Jarrad Harford, and Tianming Zhang for providing us with data on CEO bonuses. Schmalz is grateful for generous financial support through an NTT Fellowship from the Mitsui Life Financial Center.

[†] Address for correspondence: Harvard Business School, Rock 218, Soldiers Field, Boston, MA, 02163; phone 617-495-6963. E-mails: jfarremensa@hbs.edu (Farre-Mensa); rm34@cornell.edu (Michaely); schmalz@umich.edu (Schmalz).

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Abstract

A common assumption in the economics and finance literature is that payouts are first and foremost a vehicle to return free cash flow to investors. In stark contrast, we find that 32% of aggregate payouts are raised in the capital markets by the same firms in the same year, mainly through debt but also through equity. Conversely, issuers pay out 39% of the aggregate proceeds of net debt issues and 19% of the proceeds of firm-initiated equity issues during the same year. In the average year, over 42% of payout payers engage in such "external financing" behavior, which is widespread among both dividend-paying and repurchasing firms. The prevalence and magnitude of externally financed payouts are unexpected, particularly in light of the obvious costs associated with this behavior. Cross-sectional analyses suggest that a key driver of firms' decision to externally finance their payouts is that it allows them to jointly manage their capital structure and their cash holdings. We explore the implications of our findings for several payout theories.

Key words: Payout policy, financing decisions, debt issues, equity issues, capital structure.

JEL classification: G35; G32.

A common assumption in the economics and finance literature is that firms rely on free cash flow to fund their payouts, whether these payouts are motivated by agency (e.g., Chetty and Saez, 2010), signaling (e.g., Miller and Rock, 1985), or other considerations. Accordingly, Grullon, Michaely, and Swaminathan (2002) and DeAngelo, DeAngelo, and Stulz (2006), among others, present a lifecycle view of payouts where mature, cash-rich firms distribute excess free cash flow to their investors while young, growing firms raise but do not pay out capital. Ross, Westfield, and Jaffe (2013) conclude that "a firm should begin making distributions when it generates sufficient internal cash flow to fund its investment needs now and into the foreseeable future," and so they advise managers to set their payouts "low enough to avoid expensive future external financing" (p. 607). While there are examples of firms occasionally raising external funds to finance their payouts (e.g., Denis and Denis, 1993; Wruck, 1994), a policy of systematically relying on the capital markets to finance payouts has long been seen as "uneconomic as well as pointless" (Miller and Rock, 1985).

The results in this paper counter this conventional thinking: in the average year of our 1989-2012 sample period, 42% of payout payers initiate a net debt or equity issue the same year they pay out. The vast majority, 36% of all payers, could not have funded their payouts without the proceeds of these issues, all else equal. In addition to being widespread, simultaneous payouts and security issues (henceforth, "financed payouts") are substantial in dollar magnitude: 32% of the aggregate capital paid out by public U.S. firms is raised by the same payers during the same year via net debt or firm-initiated equity issues.[1] When we include the proceeds of employee stock option exercises as a source of payout financing, the percentage of financed payouts increases by nine percentage points: 41% of the aggregate capital paid out by public firms is simultaneously raised by the same payers either actively from the capital markets or passively from their employees. Hence, a large fraction of corporate payouts are *not* funded by free cash flow.

[1] Much of the proceeds of gross debt issues are used to roll over prior debt. Our conservative focus on *net* debt issues (defined as debt issues net of debt repurchases if this difference is positive, and zero otherwise) allows us to capture those proceeds that firms can use to fund investment, cash flow shortfalls, or—as it turns out—payouts.

The gap between firms' payouts and their internally generated funds persists if we aggregate firms' sources and uses of cash flows over four- or eight-year intervals. Therefore, the use of external capital to finance payouts is persistent and is not the result of dividend smoothing (Leary and Michaely, 2011) or, more generally, of timing mismatches between free cash flow and payouts.

The prevalence, economic magnitude, and persistence of financed payouts are unexpected, particularly in light of the obvious costs associated with this behavior. In addition to underwriting and other direct issuance expenses, these costs include asymmetric information discounts on newly issued securities (Myers and Majluf, 1984) and passing up profitable investment opportunities as a result of prioritizing payouts over investment (Asker, Farre-Mensa, and Ljungqvist, 2015). In fact, most firms that finance their payouts do not have an investment-grade credit rating or are in the top size quartile, which suggests that the cost of financing payouts can be substantial for them.

To explore the potential motives behind firms' puzzling policy of financing payouts, we first examine the form of payouts they finance. We find that firms are as likely to finance their dividends as their share repurchases. This finding deepens the puzzle, because it indicates that the decision to finance payouts with external funds *cannot* be explained by firms' desire to avoid the well-known costs associated with dividend cuts (e.g., Healy and Palepu, 1988).

We also analyze the extent to which firms choose debt or equity issues to finance their payouts, a choice that has direct capital structure implications. Net debt is by far the most important source of payout financing: up to 30% of aggregate payouts are financed via simultaneous net debt issues. Conversely, 39% of the aggregate proceeds of net debt issues—$135 billion of the $350 billion of net debt issued by public U.S. firms in the average sample year—are paid out during the same year by the same issuers. Given that SEOs and private placements are relatively rare, it is not surprising that only 3% of aggregate payouts are financed via firm-initiated equity issues. Yet when firms do initiate equity issues, they pay out a striking 19% of the proceeds the same year of their issuance.

Next, we examine the characteristics of firms that finance their payouts in the capital markets. We find that firms with low cash levels and those whose cash is 'trapped' overseas are more likely to

finance their payouts (both dividends and repurchases) with external capital, while highly leveraged firms are less likely to finance them with debt and more likely to do so with equity. In addition, we show that firms use debt-financed payouts to increase their net leverage (i.e., their leverage net of cash) when the value of interest tax deductions increases exogenously due to an increase in state corporate income taxes. These results indicate that a key driver of financed payouts is firms' desire to jointly manage their cash holdings and capital structure—for tax or agency reasons—in a way that could not be replicated if they funded their payouts internally. An immediate implication of these findings is that while most research analyzes liquidity, capital structure, and payout decisions separately, these are tightly linked decisions and thus much can be gained by studying them jointly.

Our analysis yields several other insights about possible motives that lead firms to externally finance their payouts. As suggested by Easterbrook (1984), financed payouts can be part of a monitoring strategy that forces managers to set such high payout levels that they are frequently forced to raise external capital to finance new investments. By subjecting virtually all investment decisions to the scrutiny of the capital markets, this strategy minimizes the risk that managers overinvest or otherwise use cash suboptimally. Consistent with this explanation, we find that 40% of firms that cannot fund their payouts internally have non-routine levels of investment. We also show that firms without a strong institutional investor presence appear more prone to financing their payouts, which suggests that financed payouts can be a substitute for other governance mechanisms, as formalized by Zwiebel (1996). Indeed, in Zwiebel's dynamic model, entrenched managers use their payout and capital structure policies to voluntarily constrain their own future empire building, in the spirit of Easterbrook (1984) or Jensen (1986).

In addition, we find that simultaneous payouts and equity issues are most prevalent among firms with high idiosyncratic volatility of stock returns, which have more opportunities to engage in market timing. Finally, the desire to increase earnings-per-share (EPS) is another significant driver of debt-financed repurchases, particularly in industries where short-termist pressures to meet or beat analysts' forecasts are higher and for managers whose bonus is directly tied to EPS targets.

By contrast, we find little support for the notion that signaling considerations are a first-order driver of financed payouts. Indeed, financed payouts play no role in signaling models of the class of Miller and Rock (1985). Other signaling models, like Bhattacharya (1979), do predict that firms hit by a negative profitability shock will finance their payouts rather than cut them. However, our analysis shows that the vast majority of firms with a gap between payouts and internal funds do not have unusually low profitability.

This paper makes three contributions. First, ours is the first paper to systematically analyze how firms fund their payouts. The vast literature on payout policy has investigated in detail the determinants of the form of payouts (dividends or repurchases), their motivations, and the effect that payout decisions have on equity returns. (See DeAngelo, DeAngelo, and Skinner (2008), and Farre-Mensa, Michaely, and Schmalz (2014) for recent reviews.) Yet, despite the obvious interest in payout policy, no paper to date has analyzed how payouts are actually funded, perhaps because the answer appeared just too obvious: the vast majority of payouts should be funded with free cash flow—at least over long enough time periods. We find that this is not the case.

Of course, it has long been known that some firms occasionally raise external funds to finance large payouts. For example, Denis and Denis (1993) investigate 39 proposed leveraged recapitalizations, and Wruck (1994) examines Sealed Air Corporation's leveraged special dividend. More recently, Grullon et al. (2011) note that a non-trivial fraction of firms simultaneously raise and pay out equity. However, the pervasiveness, economic magnitude, and persistence of financed payouts we find in the data have not been documented previously and are unexpected.

Second, the high frequency and large magnitude of externally financed payouts have implications for our understanding of the motives behind firms' payout policies. By simultaneously raising and paying out capital, firms can jointly manage their capital structure and cash holdings.[2] While every dividend payment and every share repurchase mechanically affect capital structure, the phenomenon

[2] Leary and Roberts (2005) show that firms alternate issuances and repurchases of equity and debt to adjust their capital structure; however, they do not examine simultaneous issuances and repurchases.

we document here is different and much more pointed. Our results indicate that firms actively manage their capital structure through their payout decisions—that is, capital structure changes are not a by-product but a key objective of payout policy.

Third, our paper enhances our understanding of what firms do with the proceeds of security issues. As it turns out, in addition to using these proceeds to fund investment, cover cash flow shortfalls, or build up their cash reserves (e.g., Kim and Weisbach, 2008; Denis and McKeon, 2012), a staggering 34% of the capital firms raise in the capital markets in the average sample year is paid out by the same firms during the same year—in fact, this ratio exceeded 50% as recently as 2011.

1. Aggregate Payout and Capital Raising Activity

1.1 Sample selection

Our sample consists of all public U.S. firms that appear in the Compustat-CRSP merged files from 1989 to 2012.[3] We exclude firms in the year of their IPO to avoid capturing the IPO proceeds in our analyses of equity issues. As is customary, we also exclude financial firms (SIC 6) and utilities (SIC 49). The final sample consists of 10,591 unique firms and 90,791 firm-years observations.

1.2 Aggregate payout and capital raising activity

We start by briefly describing the aggregate payout and capital raising activities of industrial public U.S. firms during our sample period. Figure 1 shows that both the percentage of firms with positive total payout (the sum of dividends and share repurchases) and the dollar amount paid out have experienced a substantial increase over our sample period. (All dollar figures reported in the paper are in real dollars of year 2012 purchasing power.) This increase has largely been driven by repurchases, which have been the most important payout vehicle since 1997 (except in 2009). Dividends, on the other hand, have experienced a different dynamic: the number of dividend payers declined through the 1990s while the aggregate amount of dividends paid stayed relatively flat during

[3] The sample starts in 1989 because this is the first full year for which data from the statement of cash flow were standardized following the adoption of Statement of Financial Accounting Standards 95.

this period, but dividends have made a remarkable comeback since 2001.[4] Figure 1 also shows that repurchases have been much more volatile and procyclical than dividends throughout our sample, which is consistent with the well-known tendency of firms to smooth dividends (e.g., Jagannathan, Stephens, and Weisbach, 2000; Leary and Michaely, 2011).

Figure 2 shows that net debt issues, defined as the difference between the amount of debt issued and the amount retired if this difference is positive, and zero otherwise, have been by far the most important source of external funds for U.S. firms. On the equity side, we break down equity issues in firm-initiated issues (SEOs and private placements) and employee-initiated issues via stock option exercises (McKeon, 2015). There is an important conceptual difference between a firm that chooses to raise capital by initiating a debt or an equity issue, and a firm that raises capital as a by-product of its employees' option exercises: the timing of debt and firm-initiated equity issues is determined by the firm, while the firm does not control the timing of option exercises. Thus, throughout the paper, we distinguish between instances in which firms *actively* raise capital by initiating a debt or an equity issue, and instances in which the capital-raising events are triggered by the firms' employees.[5] As Figure 2 shows, employee-initiated issues have become increasingly prevalent and are now an important—though perhaps unintended—source of capital for public U.S. firms.

Figures 1 and 2 show that aggregate payout and capital raising activities are both procyclical and have similar aggregate dollar magnitudes. Of course, these patterns do not imply that payouts and issuances are in any way related at the firm level: firms that pay out and those that raise capital may well be different firms that are at different stages of their life cycles, as predicted by standard lifecycle theories (e.g., Grullon et al., 2002; DeAngelo et al., 2006). The next section examines simultaneous payout and issuance decisions *by the same firm*, in contrast to the aggregate statistics presented so far.

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[4] Farre-Mensa, Michaely, and Schmalz (2014) review the recent payout literature and, in particular, papers that have examined the forces behind this 'disappearance and reappearance' of dividends.

[5] Following McKeon (2015), we identify a firm as initiating an equity issue during a quarter if the ratio of the equity raised during that quarter to end-of-period market equity is above 3%. Otherwise, we classify the issue as employee-initiated.

2. Simultaneous Payouts and Security Issues

In this section, we investigate how common it is for the same firm to pay out and raise capital simultaneously, i.e., during the same fiscal year. Section 2.1 first examines the prevalence of firms that pay out capital and issue any type of security simultaneously, as well as the economic magnitude of these simultaneous payouts and issues. We then analyze how our findings change if we focus only on *actively* issued securities, i.e., instances in which firms initiate a debt or an equity issue, thus excluding equity issues that are the result of employee stock option exercises. Section 2.2 further disaggregates the securities that are issued simultaneously with payouts into net debt issues, firm-initiated equity issues, and employee-initiated equity issues.

2.1 All security issues vs. firm-initiated security issues

Columns 1, 2, and 3 in Table 1, Panel A report the number of firms that pay out and raise capital in the same year, presented as a fraction of the whole population of public firms (column 1), the population of firms that pay out capital (column 2), and the population of firms that raise capital (column 3). (In Table 1 and all other tables in the paper, we report annual figures averaged over four-year intervals to conserve space.) This analysis shows that a substantial number of firms raise and pay out capital in the same year.[6] Specifically, column 1 shows that, in our average sample year, 40% of all public U.S. firms paid out and raised capital in the same year. This percentage has been growing over time, peaking at 52% in 2012. Column 2 conditions the sample on firms that pay out capital, showing that 82% of payers raise capital in the same year. Analogously, column 3 conditions the sample on firms that issue securities, showing that over 50% of security issuers simultaneously pay out capital.

These findings are surprising: firms face a non-trivial wedge between their external and internal costs of funds, due to both the direct flotation costs associated with issuing securities and to indirect costs stemming from information asymmetries between firms and investors (Myers and Majluf,

[6] All firm counts we report throughout the paper require variables to be greater than $100,000 to be considered positive. In this section, this ensures that we do not capture firms that pay out and raise trivial amounts of capital. Also, Table 1 and all subsequent tables complement our analysis of firm counts by reporting dollar magnitudes.

1984). As a result, we might expect that firms that need capital will cut their payouts before issuing any securities. In what follows, our goal is to better understand why so many firms simultaneously raise and pay out capital, despite the costs associated with such a policy of financing payouts.

We start by analyzing the degree to which our findings are driven by employee-initiated equity issues. Recall from Figure 2 that, in the later years of our sample, over two-thirds of all public firms experience such an issue, typically after stock price run-ups. To the extent that the proceeds of employee-initiated issues can be seen as excess free cash flow that the firms do not actively seek to raise and may not need, it is only natural that these proceeds are paid out. The question is what fraction of financed payouts are firms that simply pay out the proceeds of such option exercises.

Table 1, Panel B excludes employee-initiated equity issues from our analysis and focuses only on payout payers that initiate security issues in the same year—henceforth, we will refer to them as firms that "*actively* finance" their payouts. Column 1 shows that, in the average sample year, 20% of all public firms simultaneously pay out and raise capital by initiating a net debt or an equity issue. This means that an average of 42% of all payers actively raise capital in the same year (column 2); conversely, 46% of all firms that actively raise capital also pay out capital in the same year (column 3). A comparison of Panels A and B indicates that employee-initiated equity issues make up less than half of the instances of firms that simultaneously pay out and raise capital. Hence, most financed payouts are the result of an active choice by firms to raise and pay out capital in the same year.

Figure 3 (top graph) shows that actively financed payouts are procyclical: The percentage of payout payers that actively raise capital in the same year fell from a peak of 53% in 1998 to 29% in 2002, in the aftermath of the 2001 recession. It then increased just to fall again during the recent financial crisis, from 42% in 2007 to 24% in 2009, before bouncing back to 40% in 2012. Therefore, it is mostly in expansionary years, when capital is arguably easiest to raise, that firms choose to initiate debt or equity issues and simultaneously pay out at least part of the proceeds.

Dollar magnitudes

A natural question follows: are simultaneous payouts and security issues economically important? Columns 4 through 9 of Table 1 investigate this question. Specifically, Panel A examines the dollar amount that firms simultaneously raise and pay out in the same year, measured as follows: for each firm-year, we calculate a firm's financed payout as the minimum of the proceeds of its security issues (net debt issues plus equity issues, denoted SI_{it}) and its total payout (TP_{it}). For example, if a firm pays out \$50 in a given year and does not raise any capital that year, our measure of financed payout is zero; if it raises \$30, we say that \$30 of the \$50 paid out are financed; and if it raises \$100, our measure indicates that the entire \$50 payout is financed.

To get a sense of how large simultaneous payouts and security issues are relative to aggregate payouts and to aggregate issues, we construct the following two ratios for each year in our sample period: $R_t^{TP} = \sum_{i \in Pub_t} \min\{SI_{it}, TP_{it}\} / \sum_{i \in Pub_t} TP_{it}$ and $R_t^{SI} = \sum_{i \in Pub_t} \min\{SI_{it}, TP_{it}\} / \sum_{i \in Pub_t} SI_{it}$, where Pub_t denotes the set of all public firms in year *t*. Therefore, R_t^{TP} captures the fraction of aggregate total payouts that is simultaneously raised through securities issued *by the same payers during the same year*, while R_t^{SI} captures the fraction of aggregate security issue proceeds that is paid out *by the same issuers during the same year*.[7]

Column 4 in Table 1, Panel A shows that, on average over our sample period, 41% of the aggregate capital paid out by public U.S. firms is raised by the same payers during the same year. This fraction has decreased somewhat in recent years, indicating that simultaneous payouts and issues have not kept pace with the payout explosion captured in Figure 1. This is despite the fact that the fraction of aggregate security issue proceeds that are simultaneously paid out has grown over time, averaging 39% over our sample (column 5) and reaching 57% in 2011.

[7] Alternatively, we could construct the ratio $\min\{SI_{it}, TP_{it}\} / TP_{it}$ for each payout payer and then average this ratio across all payers each year (and analogously with the ratio $\min\{SI_{it}, TP_{it}\} / SI_{it}$ for security issuers). Doing this yields similar patterns to those we report using R_t^{TP} and R_t^{SI}, respectively.

Columns 4 and 5 in Panel B show that the large dollar magnitude of payouts financed with simultaneous security issues is *not* the result of firms paying out the proceeds of employee stock option exercises. The columns show the analogous versions of the R_t^{TP} and R_t^{SI} ratios with *SI* substituted by *AI*, where *AI* includes only capital *actively* raised through either net debt issues or firm-initiated equity issues. Remarkably, we still find that on average close to a third (32%) of the aggregate capital paid out by public U.S. firms is financed through security issues initiated by the same firms during the same year. The results in column 5 are equally if not more surprising: 34% of the aggregate proceeds of firm-initiated issues are paid out by the same firms during the same year, a ratio that has increased markedly since 2003. The bottom graph in Figure 3 shows that simultaneous payouts and firm-initiated security issues are strongly procyclical, with the aggregate annual amount of actively financed payouts, $\sum_{i \in Pub_t} \min\{AI_{it}, TP_{it}\}$, peaking in 2007 at $227 billion.

Taken together, our findings paint a very different picture from the commonly-held view that firms that (actively) raise capital and those that pay out capital are different firms that are at different stages of their lifecycles and have very different cash flow needs (e.g., Grullon et al., 2002; DeAngelo et al., 2006). Rather, our results indicate that, on average over our sample period, over 82% of public firms that pay out capital also issue securities in the same year they pay out. Even if we focus only on firm-initiated security issues, this ratio remains as high as 42%. The amount of total payouts actively financed via these firm-initiated issues represents 32% of aggregate payouts; conversely, 34% of the proceeds of firm-initiated issues are paid out during the same year. The capital markets thus play an unexpectedly important role in financing payouts—and financing payouts appears to be a major function of the capital markets.

Dividends vs. repurchases

We next investigate the extent to which our findings are driven by dividends or share repurchases. It is well known that it is costlier for firms to cut dividends than to cut repurchases (e.g., Brav et al., 2005). As a result, firms may be inclined to maintain dividend payments, even if doing so

requires raising capital; by contrast, it would be more surprising if firms raised capital to finance repurchases, which are more flexible. To see whether firms are indeed more likely to finance dividends than repurchases, columns 6 and 7 in Table 1 show the same analysis as columns 4 and 5 but substituting total payout (*TP*) with dividend payout (*Div*); similarly, columns 8 and 9 substitute total payout with capital paid out via share repurchases (*Rep*).

The results in Panel A indicate that firms pay out the proceeds of security issues via dividends and share repurchases to almost the same extent. When we focus exclusively on firm-initiated issues (Panel B), we find analogous results: 21% of the proceeds of firm-initiated security issues are paid out via dividends and also 21% via repurchases.[8] If anything, a comparison of columns 7 and 9 indicates that in recent years, a larger share of the proceeds of firm-initiated issues has been paid out via repurchases than via dividends. Given that firms have little reason to pay smooth repurchases, maintaining repurchase levels is unlikely to be the motivation for such financed repurchases. These findings thus suggest that payout smoothing is not the primary motivation behind most firms' decision to finance their payouts by raising capital—a possibility we investigate further in Section 4.

A similar pattern emerges if we examine firm counts instead of dollar magnitudes: in untabulated results, we find that on average 45% of dividend payers and 41% of repurchasers initiate a security issue in the same year. (The gap between these two fractions has all but disappeared in recent years.)

2.2 Breaking down the role of debt and equity issues

Our findings so far show that simultaneous payouts and security issues represent a large fraction of both payout and capital raising activities. The motivations behind these findings may critically depend on the type of securities issued: payouts financed via equity or net debt issues have very different capital structure implications, and thus they could point to different motives for why firms raise and pay out capital at the same time. This section breaks down the role that debt and equity issues play in driving our results.

[8] The sum of columns 7 and 9 does not equal column 5. To illustrate why, consider the case of a firm that raises \$80 of debt, pays out \$50 in dividends and another \$50 via share repurchases. For this firm, $\min\{SI, TP\} = \$80 < \min\{SI, Div\} + \min\{SI, Rep\} = \$50 + \$50 = \$100$.

Table 2 examines the extent to which firms simultaneously pay out capital and issue net debt (Panel A), firm-initiated equity (Panel B), and employee-initiated equity (Panel C), following the same structure as Table 1. Three results stand out. First, debt appears to be the dominant form of payout financing: column 4 indicates that, in our average sample year, 30% of aggregate payouts are financed via simultaneous net debt issues (Panel A), while firm- and employee-initiated equity issues finance 3% (Panel B) and 11% (Panel C) of aggregate payouts, respectively. Columns 6 and 8 show that debt dominates the financing of both dividends and share repurchases.

Second, when examining firm counts, a somewhat different picture emerges: column 2 shows that the percentage of payout payers with simultaneous net debt issues is a substantial 38% (Panel A). That said, this fraction is smaller than the 69% of payers with simultaneous employee-initiated equity issues (Panel C), reflecting the large prevalence of firms with capital inflows from employee stock option exercises. On the other hand, simultaneous payouts and firm-initiated equity issues are rare: less than 8% of payout payers initiate equity issues during the same year (Panel B).[9]

Third, relative to the total amount of capital firms raise, column 5 shows that a remarkable 39% of the proceeds of net debt issues are paid out during the same year by the same issuers (Panel A); this represents $135 billion of the $350 billion of net debt raised by public U.S. firms in the average sample year. Panel B shows that a maybe even more remarkable 19% of the proceeds of firm-initiated equity issues are also simultaneously paid out. Therefore, while the fact that SEOs and private placements are relatively rare implies that firms finance only a small fraction of aggregate payouts with firm-initiated equity issues, when firms do initiate equity issues they pay out almost a fifth of the proceeds during the same year.

As for employee-initiated equity issues, as many as 79% of these proceeds are simultaneously paid out (Panel C). This finding is consistent with the notion that option exercises often provide unneeded capital that is a by-product of firms' compensation policies, and so it is not surprising that

[9] The fact that some firms simultaneously raise and pay out equity has been previously noted by Weld (2008) and Grullon et al. (2011).

firms pay the exercise proceeds back to their shareholders. At the same time, it is worth emphasizing that firms use employees as a source of capital to finance approximately a tenth of their payouts.

3. The Gap Between Payouts and Free Cash Flow

Section 2 shows that simultaneous payouts and security issues are widespread, representing a large fraction of the dollar amounts that firms pay out and that they raise. But to what extent is there a necessary relation between the decisions to raise and pay out capital? In order to shed light on this question, this section examines whether firms conducting simultaneous payouts and issues could have funded their payouts without the proceeds of these issues or whether, by contrast, the issues were necessary to fund firms' chosen payout levels.

3.1 Prevalence and magnitude of payout-funding gaps

In order to identify firms that would have been unable to fund their payouts without simultaneously raising capital, *all else equal*, we need to measure the gap between a firm's payout and its free cash flow. To define this gap, it is helpful to consider the following cash flow identity, which expresses firm *i*'s total payout in year *t* in terms of its potential sources and uses of cash:

$$\text{Total payout } (TP_{it}) = \text{Free cash flow } (FCF_{it}) - \text{Change in cash } (CC_{it}) + \text{Security issues } (SI_{it}) \qquad (1)$$

Free cash flow (FCF_{it}) is the sum of operating cash flow (OCF_{it}) and investment cash flow (ICF_{it}).[10] As in Section 2, total payout (TP_{it}) is the sum of dividends and share repurchases, while security issues (SI_{it}) is the sum of the proceeds of net debt and equity issues. In addition, we also define a firm's (positive) cash flow from cash reduction (CR_{it}) as minus its change in cash and short-term investments if this change is negative, and zero otherwise (i.e., $CR_{it} = -\min\{CC_{it}, 0\} \geq 0$).

It then immediately follows from equation (1) that whenever a firm's total payout exceeds the sum of its free cash flow and cash reduction (i.e., $TP_{it} > FCF_{it} + CR_{it}$), the firm needs to issue

[10] The two main components of investment cash flow are capital expenditures and cash acquisitions, both of which enter the definition of investment cash flow with a negative sign as they represent cash outlays to acquire assets. Stock-financed acquisitions are not part of investment cash flow because they have no direct cash impact. Our analysis is thus conservative: a stock acquisition is effectively the combination of an equity issue and a cash acquisition, and so free cash flow would be lower and payout gaps larger if stock acquisitions were recorded as such.

securities to finance at least part of its payout (i.e., $SI_{it} > 0$). We label such a firm as having a payout-funding gap, and define its payout gap as follows:

$$\text{Payout gap } (PG_{it}) \equiv \min\{\max\{TP_{it} - (FCF_{it} + CR_{it}), 0\}, TP_{it}\} \quad (2)$$

To illustrate our definition of payout gap, consider the following three situations. First, for a firm that pays out \$50, has free cash flow of \$25, and has no changes in cash, the payout gap is \$25. Second, for a firm that pays out \$50, has negative free cash flow of −\$100, and has no changes in cash, the payout gap is \$50 (our definition thus ensures that a firm's payout gap is never larger than the payout itself, even if free cash flow is negative). Third, consider a firm that pays out \$50, has free cash flow of \$50, and issues \$100 of net debt, which it uses to build up its cash reserves (i.e., $SI_{it} = CC_{it} = \$100$). This firm pays out and raises capital during the same year, and hence was captured as financing its entire \$50 payout in Section 2 ($\min\{TP_{it}, SI_{it}\} = \$50$). By contrast, according to our definition of payout gap, this firm does *not* have a gap because its free cash flow is sufficient to fund its payout ($PG_{it} = \min\{\max\{50 - (100 + 0), 0\}, 50\} = \$0$). This last example illustrates the complementary nature of our analyses in Sections 2 and 3.

The first four columns of Table 3, Panel A examine the prevalence of firms with a payout gap and the dollar magnitude of their gaps. Columns 1 and 2 show that, in the average sample year, 22% of all public firms—representing 46% of all firms that pay out capital—have a payout-funding gap and thus could not have funded their payout without the proceeds of security issues, all else equal.[11] Column 3 shows that, across firm-years with a payout gap, the ratio of the payout gap to total payout, PG_{it} / TP_{it}, averages 73% in the average year; thus, conditional on having a gap, payout gaps tend to be large. Importantly, the magnitude of payout gaps is also substantial at the aggregate level: column 4 shows that the annual ratio of the aggregate sum of payout gaps to the aggregate capital paid out by all public firms, $\sum_{i \in Pub_t} PG_{it} / \sum_{i \in Pub_t} TP_{it}$, averages 30% across our sample period.

[11] Analogously as in the previous tables, we require $PG_{it} > \$100{,}000$ to classify a firm as having a payout gap.

How do our findings change if we examine only payouts that could not have been funded without the proceeds of *firm-initiated* security issues? To investigate this, columns 5 through 8 in Table 3, Panel A perform an analysis analogous to that in columns 1 through 4 but focusing on what we call *active* payout gaps, which we define as follows:

$$\text{Active payout gap } (APG_{it}) \equiv \min\{\max\{TP_{it} - (FCF_{it} + CR_{it} + EE_{it}), 0\}, TP_{it}\} \quad (3)$$

where EE_{it} captures the proceeds of employee-initiated equity issues and all other variables are as in equation (2). By adding the proceeds of employee-initiated equity issues to the sum of free cash flow and cash reduction, we are able to identify firms that need to actively raise capital by initiating debt or equity issues to close their payout gaps, all else equal.[12] Columns 5 and 6 show that a remarkable 36% of all payers—or 17% of all public firms—set payout levels that they need to actively finance by raising external capital. Column 8 shows that the aggregate magnitude of active payout gaps represents 26% of the aggregate capital paid out by all public firms in the average sample year.

To better visualize time trends, Figure 4 shows the percentage of public firms and payout payers with an active payout gap (top figure), as well as the aggregate magnitude of active gaps (bottom figure). The figure shows that active gaps are highly procyclical, declining markedly around the three recessionary periods in our sample: the early 1990s recession, the early 2000s recession, and the 2008-2009 financial crisis. These dynamics suggest that in recessionary years, when it is hardest and costliest to raise capital (e.g., Campello, Graham, and Harvey, 2010; Erel et al., 2012), firms are reluctant to set payout levels that they need to finance by initiating security issues. Yet they seem to have few concerns doing so while the economy is (still) growing: in 2007, right before the onset of the financial crisis, almost 40% of all payers had active payout gaps; these firms raised a combined $190 billion through firm-initiated debt and equity issues to close their gaps.

[12] Indeed, it follows from equation (1) that whenever $TP_{it} > FCF_{it} + CR_{it} + EE_{it}$, then $AI_{it} > 0$ (where as in Section 2, AI_{it} captures capital that is actively raised through net debt or firm-initiated equity issues).

Summary

Table 4 combines Tables 1 and 3 to summarize our key findings regarding the prevalence and magnitude of financed payouts and payout gaps. Even by our most conservative standard that focuses only on actively financed payouts and active gaps (second row), a staggering 42% of all payers actively finance their payouts by initiating a debt or an equity issue in the same year. Most of them, 36% of all payers, could not have funded their payouts without the proceeds of these issues, all else equal. In terms of dollar magnitudes, the capital firms simultaneously pay out and actively raise in the capital markets represents 32% of aggregate total payouts—in fact, as many as 26% of aggregate payouts could not have been funded without the proceeds of these firm-initiated issues.

Similarly, Figure 5 combines Figures 3 and 4 to jointly visualize the time trends in the fraction of payers with actively financed payouts and with active payout gaps (top figure), as well as in the dollar magnitude of their actively financed payouts and active gaps (bottom figure). The figure highlights the procyclicality of both actively financed payouts and active gaps, consistent with our prior interpretation that it is primarily in expansionary years when firms set payout levels that they finance by actively raising capital. This finding is consistent with the evidence in Bliss, Cheng, and Denis (2015), who show that exogenous shocks to the supply of credit lead firms to reduce their payouts as a substitute form of financing. Indeed, our results show that reducing payouts allows firms not just to conserve internal funds, but also to reduce their external capital needs.

3.2 Are payout gaps the result of timing mismatches between free cash flow and payouts?

The prevalence and dollar magnitude of payout gaps raise an important question: are these gaps the result of timing mismatches between free cash flow and payouts? This question is particularly relevant given that it has long been known that firms tend to smooth their payouts relative to their earnings (Lintner, 1956). If, for example, firms set their payout level equal to their *average* free cash flow, our analysis could identify a payout gap every year that a firm has below-average free cash flow (say, once every two years). Crucially, if timing mismatches were driving payout gaps, the gaps

should disappear (or be greatly reduced) when we measure firms' sources and uses of cash over longer horizons.

In order to investigate whether payout gaps are the result of such timing mismatches, Table 3, Panel B reports the same analysis as Panel A but with payout gaps defined over four-year intervals:

$$PG_{it}^{t+3} \equiv \min\left\{\max\left\{\sum_{j=0}^{3} TP_{it+j} - \sum_{j=0}^{3}\left(FCF_{it+j} + CR_{it+j}\right), 0\right\}, \sum_{j=0}^{3} TP_{it+j}\right\} , \quad (4)$$

and analogously for active payout gaps. As it turns out, both payout gaps and active payout gaps are somewhat *more* prevalent and of similar magnitude when we define them over four-year intervals in Panel B than when we define them annually in Panel A.[13] Table IA.1 in the Internet Appendix shows that this finding is robust to defining gaps over eight-year intervals. (Of course, lengthening the accounting period that far introduces a non-trivial amount of survivorship bias.) Therefore, payout gaps and active payout gaps are persistent and we find no support for the notion that they are the result of timing mismatches between free cash flow and payouts.

In addition, and consistent with the persistence of active payout gaps, in untabulated analysis we find that 46% of all firms that actively finance their payouts by both paying out capital and initiating security issues in a given year also do so in the following year; 64% of them do so in at least one or the following two years; and 73% of them do so in at least one of the following three years.[14]

Are persistent payout gaps sustainable?

Our findings that active payout gaps are persistent and that firms rely mainly on net debt issues to close these gaps (see Table 2) may raise the concern that such a policy of debt-financing payouts is not sustainable because it would mechanically lead leverage to explode. In fact, this is not the case. To see why, consider the (stylized) case of a firm that initially has a 50% leverage ratio with $50 in

[13] This finding is in fact not surprising. Indeed, we expect firms that smooth their payouts relative to their free cash flow to use their cash holdings to do so. Our baseline definitions of payout gap and active payout gap add cash reductions to free cash flow (see equations (2) and (3)), and so we do not identify firms performing such intertemporal smoothing as having gaps.

[14] These findings are even more pronounced if we include employee-initiated equity issues as a source of payout financing: in this case, 78% of firms that finance their payouts in a given year also do so in the following year; 85% do so in at least one of the following two years; and 89% do so in at least one of the following three years.

long-term debt and $50 in equity. The firm generates $10 in profits that it uses to fund its capital expenditures, leaving $0 in free cash flow; it also pays out $5, giving rise to a $5 payout gap that it finances by issuing debt. At the end of the period, the firm has $55 in debt (the $50 it initially had plus the additional $5 it has issued); and also $55 in equity (the $50 it initially had plus the $5 of profits it has retained). Therefore, the firm's debt-financed payout has *not* led to a leverage increase.

It is important to note that the firm in this example does generate enough profits to fund its capital expenditures, so the firm does not need to raise capital to invest. But if the firm simply reinvested its profits and did not pay out any capital nor raise any debt, its leverage would fall. Alternatively, the firm could have kept its leverage stable without raising any debt by paying out $10 instead of $5. However, such a policy would not be sustainable for a firm like the one in the example that reinvests its profits, as the firm would need to use its cash reserves to funds its payout and thus it would end up running out of cash. Raising debt and paying out the proceeds is the only way this firm can keep both its leverage *and* its cash holdings stable.

The next section focuses on examining the motives that lead firms to finance their payouts. In particular, we will investigate the extent to which financed payouts are motivated by firms' desire to jointly manage their capital structure and their cash holdings.

4. Why Do Firms Finance Payouts?

The frequency, magnitude, and persistence of actively financed payouts run counter to the widespread assumption in the literature that payouts are first and foremost a vehicle to return free cash flow to investors (e.g., Grullon et al., 2002; DeAngelo et al., 2006). Our goal in this section is to shed further light on the motives driving this unexpected behavior by analyzing the characteristics of those firms that are more prone to financing their payouts in the capital markets. For the most part, our analysis is eminently descriptive, and so we stop short of drawing causal inferences.

Throughout the section, we focus only on firms that make a *proactive* decision to finance their payouts by simultaneously paying out capital and initiating debt or equity issues—that is, we ignore payouts financed via employee-initiated equity issues. Therefore, given our exclusive focus on what

in Sections 2 and 3 we have called *actively* financed payouts and *active* payout gaps, throughout this section we will refer to them simply as "financed payouts" and "payout gaps" to streamline the exposition. (The table headers maintain the qualifier 'active' to avoid any confusion.)

We first establish a benchmark for financed payouts by examining the characteristics of payout payers in general, whether or not their payouts are financed. Table 5 shows the results of a tobit model in which the dependent variable is the capital a firm pays out in the form of dividends (columns 1 and 2) or share repurchases (columns 3 and 4), scaled by the beginning-of-year market value of the firm's equity (columns 1 and 3) or beginning-of-year assets (columns 2 and 4).[15] All independent variables are measured as of the beginning of the fiscal year, except for operating cash flow and investment, which are scaled by beginning-of-year assets.

Consistent with prior literature (e.g., Dittmar, 2000; Grinstein and Michaely, 2005), we find that higher payouts (both dividends and share repurchases) are associated with firms that are more profitable (i.e., have higher operating cash flow); invest less; are larger and more likely to have an investment-grade credit rating; and have lower excess leverage (where excess leverage is defined as the difference between a firm's leverage and the leverage of the median firm in its industry). The correlation between excess cash (the difference between a firm's cash-to-assets ratio and that of the median firm in its industry) and dividends is weakly negative, while it is strongly positive for share repurchases; similarly, the correlation between the tax cost of repatriating foreign earnings and dividends is weakly negative while it is positive for repurchases.[16] A firm's share of institutional ownership is also associated with lower dividends but higher repurchases.

Firms whose stock returns are subject to high idiosyncratic volatility and thus that have higher demand for precautionary cash (Warusawitharana and Whited, 2014) pay out less. On the other hand, firms in industries where stock prices are highly sensitive to earnings news, as captured by their

[15] Table 5 reports the coefficient estimates of the tobit model, which capture the estimated marginal effect of each independent variable on the non-truncated latent dependent variable.

[16] Following the literature, we define the tax cost of repatriating foreign earnings by multiplying foreign earnings by the statutory U.S. tax rate and subtracting an estimate of the allowable foreign tax credit, scaled by total assets (see, e.g., Hanlon, Lester, and Verdi, 2015); as is customary, we set the tax cost to zero if that difference is negative.

earnings response coefficient (ERC), pay higher dividends; this finding is consistent with the notion that public firms in high-ERC industries are subject to more short-termist pressures, which lead them to prioritize dividends over investment (Asker et al., 2015).

Our next step is to examine the characteristics of firms that finance their payouts via simultaneous net debt or firm-initiated equity issues. For those firms that pay dividends or repurchase shares, Table 6 reports the results of estimating a fractional logit model in which the dependent variable is the fraction of dividends or of repurchases that is financed via net debt issues or via firm-initiated equity issues. Specifically, the dependent variable in column 1 is $\min\{\textit{Net debt issues}_{it}, \textit{Dividends}_{it}\}/\textit{Dividends}_{it}$. For a dividend payer that does not simultaneously issue net debt, this fraction equals 0; it equals 1 for a firm that raises at least as much capital via debt issues as it pays out via dividends; and it is a fraction in (0,1) for a firm that raises in debt a fraction of its dividend payout. Analogously, the dependent variable in column 2 is $\min\{\textit{Net debt issues}_{it}, \textit{Repurchases}_{it}\}/\textit{Repurchases}_{it}$, while in columns 3 and 4 it is $\min\{\textit{Firm-initiated equity issues}_{it}, P_{it}\}/P_{it}$, where P_{it} denotes dividends or repurchases. The choice of independent variables is the same as in Table 5.

For ease of interpretation, Table 6 reports the conditional marginal effects implied by the fractional logit model evaluated at the means of the independent variables. Before describing our findings, we note that Table IA.2, Panel A in the Internet Appendix shows the results of estimating the exact same models by OLS, effectively ignoring the fact that the dependent variables are fractions; all our conclusions are unchanged. Table IA.2, Panel B adds firm fixed effects to the OLS specifications, thus differencing away time-invariant firm unobservables; our conclusions are also largely unchanged.

4.1 Shocks to profitability and investment opportunities

Table 6 shows that a firm's operating profit is negatively associated with the fraction of its payout it finances by issuing net debt or equity. To illustrate, column 1 indicates that, for the average dividend payer, a marginal increase of one percentage point in the operating cash flow-to-assets ratio is associated with a 1.6 percentage point decrease in the fraction of the firm's dividend financed by

debt. (The interpretation of all other coefficients is analogous.) At the same time, we also find that firms with high investment (and thus low free cash flow) finance a higher fraction of their payout. These results are consistent with the finding in Table 4 that the vast majority of firms that finance their payouts by simultaneously initiating debt or equity issues have a payout-funding gap and thus do not generate enough free cash flow to fund their payouts.

The fact that firms with lower operating cash flow and higher investment are more prone to financing their payouts raises an important question: to what extent are financed payouts the result of firms that decide to maintain their payouts in the face of transitory shocks to their profits or investment opportunities? To shed light on this question, in Tables 7 and 8 we construct *counterfactual* payout gaps using firms' expected profits and investment, and we compare them to the firms' *actual* gaps based on the firms' actual profits and investment. If payout gaps are the result of temporary shocks, the gaps should all but disappear in the counterfactual scenario in which we assume that the shocks do not happen. (Of course, the question would still remain of why a firm that needs capital to cover a decrease in profits or an increase in investment chooses to continue paying out, thereby mechanically increasing its financing needs.) We next describe the findings of this counterfactual analysis before continuing our discussion of Table 6.

Counterfactual profitability

Table 7 reports the prevalence and aggregate magnitude of counterfactual payout gaps when we assume that no firm is less profitable than the median firm in its industry (columns 1 and 2) or than it was in the previous year (columns 3 and 4). For ease of comparison, columns 5 and 6 reproduce the actual payout gaps reported in Table 3. A comparison of columns 1 and 5 reveals that 79% (=28.6/36.1) of payers with a payout gap would still have a gap if they had been *at least* as profitable as the median firm in their industry. Comparing columns 2 and 6, we see that the aggregate dollar magnitude of such counterfactual gaps is 92% of the aggregate magnitude of actual gaps. We find similar results when we assume that all firms are at least as profitable as they were in the previous year. Therefore, the vast majority of payout gaps are *not* the result of transitory profitability shocks.

Table IA.3 in the Internet Appendix breaks downs the role that dividends and share repurchases play in driving the actual and counterfactual payout gaps identified in Table 7. Two results stand out. First, actual repurchase gaps have a similar prevalence and dollar magnitude as actual dividend gaps—if anything, in recent years repurchase gaps appear to be more common. Second, the vast majority of gaps that are dividend-driven are not the result of negative profitability shocks. Hence it follows that most firms that set a payout level above their free cash flow do not do so to avoid having to cut their dividend in the face of a negative profitability shock.

Counterfactual investment

The results in Table 7 suggest that transitory profitability shocks are not a major driver of payout gaps—and thus of firms' decision to finance their payouts with simultaneous security issues. What about transitory investment spikes? Table 8 performs an analysis analogous to Table 7, but in this case showing counterfactual payout gaps when we assume that no firm invests more than the median firm in its industry or than it did in the previous year. The table shows that investment surges play a more important role than profitability shocks in explaining payout gaps: a comparison of columns 1 and 5 shows that 61% (=22.1/36.1) of firms with a payout gap would still have a gap if they had invested no more than the median firm in their industry, while 71% would still have a gap if they had invested no more than they did in the previous year (column 3 vs. column 5). The aggregate dollar magnitudes of payout gaps in these counterfactual scenarios represent 60% and 69%, respectively, of the actual magnitude of payout gaps (columns 2 and 4 vs. column 6). Therefore, firms that decide to continue paying out capital when their investment increases can account for 30% to 40% of both the prevalence and aggregate dollar magnitude of payout gaps.

Analogously to Table IA.3, Table IA.4 in the Internet Appendix examines the extent to which dividend and repurchase gaps are explained by investment spikes. When we assume that firms invest in accordance to the median firm in their industry or to their own level in the previous year, the prevalence and economic magnitude of counterfactual dividend gaps tend to remain as high as in the case of repurchase gaps; therefore, the fractions of dividend and repurchase gaps that appear to be

explained by investment spikes are similar. This unexpected result echoes our analogous finding for profitability shocks, and it suggests that firms are as likely to continue paying dividends as they are to continue repurchasing shares when their free cash flow goes down due to a surge in investment.

Taken together, the results in Tables 7, 8, IA.3, and IA.4 indicate that while profitability shortfalls play a small role in driving payout gaps, the role of investment spikes is more important. Indeed, up to 40% of payout gaps correspond to firms that seem to make a conscious decision to continue paying out capital—both through dividends and repurchases—when their investment increases, even if their decision results in simultaneous payouts and security issues. While perhaps expected in the case of dividends, which are known to be costly to cut, this is a more surprising result in the case of repurchases, which are typically assumed to be easily adjusted in response to changes in free cash flow. And, of course, no less surprising is our finding that approximately half of the firms that set a payout level higher than their internal funds do so in years when they do not appear to be subject to transitory profitability or investment shocks.

Table IA.5 performs a similar counterfactual exercise as Tables 7 and 8 to examine the following question: are payout gaps driven by firms that increase their payouts, or would firms still have a gap if they had paid out no more than they did in the previous year? We find that total payout and repurchase increases play a limited role in explaining total payout and repurchase gaps, respectively—while dividend increases play virtually no role in explaining dividend gaps. These results are consistent with our finding in Table 3 that payout gaps tend to be persistent and thus are not the result of one-time payout increases. At the same time, Table IA.5 suggests that when payout gaps are temporary, they are usually the result of large, one-time share repurchases that need to be financed with simultaneous security issues.[17] We now return to our analysis of the characteristics of firms that finance their payouts to try to better understand why firms decide to rely on the capital markets to finance their (persistent or one-time) payout gaps.

[17] Indeed, a comparison of columns 5 and 6 reveals that while only 18% (=100%−81.8%) of repurchase gaps appear to be the result of repurchase increases, these likely one-time repurchase gaps tend to be large, accounting for up to 40% of the aggregate dollar magnitude of repurchase gaps.

4.2 Financing frictions and the costs of financed payouts

Before discussing the potential benefits associated with a policy of financing payouts, it is useful to go over the costs of such a policy. Key among these costs is the notion that firms face a wedge between their external and internal cost of funds. Indeed, direct flotation costs associated with raising external funds imply that external capital is more costly than internal capital for virtually all firms (e.g., Kaplan and Zingales, 1997). In addition, for firms facing financing frictions, "the cost of new debt and equity may differ substantially from the opportunity cost of internal finance generated through cash flow and retained earnings" (Fazzari, Hubbard, and Petersen, 1988; p. 142). As a result, in a 'pecking order world' (Myers and Majluf, 1984), firms are expected to cut their payouts before raising external capital.[18]

Of course, the wedge between a firm's external and internal cost of funds is not directly observable. That said, the literature often points to large firms or those with an investment-grade credit rating as being less likely to be subject to financing frictions (e.g., Whited, 1992; Hadlock and Pierce, 2010). We therefore expect such firms to be more prone to financing their payouts, as the cost of doing so should be lower for them.

The evidence in this regard is mixed. Table 6 shows that larger firms are indeed more likely to finance both their dividends and their share repurchases by issuing debt and equity. However, conditional on the other covariates, firms with an investment-grade rating appear to be no more likely to finance their payouts by issuing debt—and *less* likely to finance them by issuing equity—than those without such a rating. In fact, in untabulated analyses we find that less than a quarter of firms that choose to simultaneously pay out and raise debt or equity have an investment-grade rating, while only 47% of them are in the top public-firm size quartile.

Therefore, while larger firms are more prone to financing their payouts, it is still the case that the majority of firms that engage in this behavior are unrated or high-yield and not very large. Even in

[18] Taxes can be an additional cost of financed payouts, particularly in the case of financed dividends: if a firm raises \$1 of capital from investors and immediately pays it out as a dividend, shareholders will receive $\$(1 - \tau)$, where τ is the dividend tax.

expansionary years, when financed payouts are more common (Figure 5), we expect such firms to face a significant wedge between their external and internal cost of funds. In addition, these firms' decision to use the proceeds of their debt or equity issues to finance their payouts may come at the expense of financing profitable investment opportunities (Almeida, Fos, and Kronlund, 2014; Asker et al., 2015). Taken together, these findings suggest that many, if not all, of the firms that finance their payouts face non-trivial costs in doing so.

4.3 Using financed payouts to jointly manage a firm's capital structure and its cash holdings

For firms that choose to finance their payouts, standard economic theory suggests that there must be large enough benefits associated with this behavior to offset its costs. We now turn our attention to exploring these benefits.

Recall from Table 2 that the vast majority of financed payouts are financed with debt. Of course, such debt-financed payouts result in leverage increases, which suggests that firms may use them as an active tool to manage their capital structure. Consistent with the notion that capital structure considerations are an important driver of financed payouts, Table 6 shows that firms with high excess leverage are less likely to finance their payouts by issuing debt and more likely to finance them by issuing equity.

A natural question then follows: if a firm wishes to increase its leverage, why does it not simply pay out capital—instead of simultaneously raising debt (which is costly) and paying it out? Debt-financed payouts have two unique implications that cannot be replicated by a firm that funds its payouts internally. First, while each time a firm pays out its leverage increases, when payouts are financed with debt this effect is magnified. Second, combining payouts with debt issues allows firms to increase their leverage (and also their leverage net of cash) without depleting their cash reserves. In particular, as illustrated at the end of Section 3, debt-financed payouts allow high-investing firms to manage their capital structure without depleting their cash reserves—and recall that many payout-financing firms have high investment (Tables 6 and 8). Consistent with the importance of cash

considerations for firms that choose to debt-finance their payouts, Table 6 also shows that a firm's excess cash has a strong negative association with its propensity to finance its payout by issuing debt.

In fact, even when firms have excess cash, it can be costly for them to use this cash to fund payouts if the cash is held overseas and would be subject to repatriation taxes if transferred to the U.S. (e.g., Foley et al., 2007; Faulkender and Petersen, 2012). Debt-financed payouts allow such firms to increase their leverage without the tax costs they would face if they repatriated their foreign cash to fund payouts.[19] Consistent with this interpretation, Table 6 shows that the tax cost of repatriating foreign earnings is positively associated with a firm's fraction of payouts that is financed with debt (but not with equity).

How big a role does the desire to avoid repatriation taxes play in explaining debt-financed payouts? Figure 6 aims to answer this question. For each firm that debt-finances its payout, we construct an upper bound of the dollar amount of debt-financed payouts that are motivated by the desire to avoid repatriation taxes as $\min\{ND, TP, \textit{Foreign earnings subject to repatriation taxes}\}$, where *ND* denotes the proceeds of net debt issues and *TP* is total payout. Then, for each year *t* in our sample period, Figure 6 plots the average of the ratio $\min\{ND_{it}, TP_{it}, \textit{Foreign earnings subject to repatriation taxes}_{it}\} / \min\{ND_{it}, TP_{it}\}$ across all firms *i* that debt-finance their payouts in year *t*. The figure shows that firms' desire to jointly manage their capital structure and their cash holdings while avoiding repatriation taxes plays an increasingly important role in motivating debt-financed payouts. Indeed, while during the 1990s this motive explained on average less than 15% of debt-financed payouts, in recent years over a third of debt-financed payouts could be driven by this motive.

The vast capital structure literature points to at least two key reasons why firms may find it optimal to actively manage their capital structure and cash holdings by debt-financing their payouts. First, issuing debt allows firms to minimize their tax bill because interest payments can be deducted

[19] Apple Inc. is a notable example of a company that has recently followed this strategy with a series of bond issues. On April 24, 2013, *The Wall Street Journal* reported that "despite its huge cash stockpile, Apple plans to issue debt to help fund dividend payments and stock buybacks in part because much of its cash is overseas. Raising money in the debt market would help Apple avoid the big tax bill that would come from bringing the cash back to the U.S."

from taxable income—a benefit recognized since at least Modigliani and Miller (1963). Paying out the debt issuance proceeds ensures that the tax savings are not offset by the new tax liability that would be created if firms were to retain the proceeds in taxable cash accounts.

Table 9 investigates whether firms are indeed more likely to debt-finance their payouts when the value of interest tax deductions increases exogenously. Following Heider and Ljungqvist (2015), we exploit staggered changes in state corporate income taxes as plausibly exogenous shocks to the value of interest tax deductions, following a difference-in-differences approach. We find that a firm's likelihood of simultaneously raising debt and paying out capital increases by 2.2 percentage points (p=0.045) following a tax increase in its headquarter state relative to firms not affected by a tax raise. This is a sizeable increase (the unconditional probability of simultaneously raising debt and paying out capital in the sample of public firms is 20%), and it is consistent with the notion that firms rely on debt-financed payouts to increase their net leverage when the value of interest tax deductions increases. As expected, we find no evidence that firms respond to tax increases by equity-financing their payouts. Nor do we find evidence that tax *decreases* affect firms' likelihood to finance their payouts by issuing debt (or equity), consistent with the dynamic tradeoff theory prediction that leverage should not respond to tax cuts (see Heider and Ljungqvist (2015) for details).

Second, debt can be used to mitigate the agency costs of free cash flow by reducing the cash flow available for spending at the discretion of mangers (Jensen, 1986). Indeed, as pointed out by Jensen, "debt creation, without retention of the proceeds of the issue, enables managers to effectively bond their promise to pay future cash flows (…) in a way that cannot be accomplished by simple dividend increases" (p. 324). The next section further investigates the extent to which firms use financed payouts to mitigate agency problems.

Taken together, our findings suggest that a first-order driver of debt-financed payouts is that they allow firms to jointly manage their capital structure and cash holdings in a way that would be impossible to replicate—or would lead to high tax repatriation costs—if payouts were funded internally. This finding has important implications: it points to a close link between firms' payout,

cash, and capital structure polices that goes beyond the mechanical effects that payouts have on cash holdings and leverage. In particular, this suggests that there can be important benefits in analyzing payout decisions jointly with cash and capital structure choices.

4.4 Other possible benefits of financed payouts

While net debt issues are the primary source of payout financing, Table 2 shows that 8% of payout payers initiate equity issues during the same year, the proceeds of which finance just over 3% of payouts. Perhaps more importantly, 19% of the proceeds of firm-initiated equity issues are simultaneously paid out by the same issuing firms. Needless to say, equity-financed payouts have no direct effect on a firm's capital structure, which indicates that other benefits in addition to the desire to adjust the capital structure may motivate financed payouts. We next explore these other potential benefits and relate them to well-known payout theories.

4.4.1 Mitigating the agency costs of free cash flow

Jensen (1986), Stulz (1990), LaPorta et al. (2000), and many others have argued that payouts allow firms to mitigate the agency costs of free cash flow. The usual interpretation of this literature, as captured in DeAngelo et al.'s (2008) review, is that "investors pressure managers to accelerate cash payouts because if they allow internal cash to build up unchecked, they give managers both the opportunity and the temptation to waste or otherwise misappropriate corporate resources" (p. 118). Thus, the standard view of agency motives has firms paying out their cash surplus and does not predict the simultaneous payouts and security issues we find in the data. Of course, this standard interpretation is still consistent with the roughly 60% of payouts that are funded with free cash flow.

As noted above, Jensen (1986) himself wrote that managers can use debt-financed payouts to bond their promise to pay out future free cash flows. In another classic paper, Easterbrook (1984) points to a second strategy through which financed payouts can be used to mitigate the agency costs of free cash flow. DeAngelo et al. (2008) describe this strategy as follows: "In the limit, investors might force managers to follow the extreme payout policy advocated by Easterbrook (1984), which is to pay such high ongoing dividends that the firm is frequently forced to raise outside capital [to

invest]. This outcome is, however, unlikely because this strategy forces firms to incur higher security valuation and flotation costs, personal taxes, etc. than they would otherwise bear" (p. 118).

Our findings suggest that Easterbrook's "extreme" policy may not be as unusual as it is typically assumed. Indeed, recall from Table 8 that up to 40% of firms with a payout-funding gap have above-average investment. The behavior of these firms is consistent with the strategy suggested by Easterbrook: they set high payout levels that they can fund internally when investment is routine but are "frequently forced to raise outside capital" every time they want to pursue new projects, thereby subjecting the new projects to the scrutiny of the capital markets. Importantly, this strategy can result in both debt- and equity-financed payouts.[20]

In order to shed further light on the role of agency considerations in firms' decision to finance their payouts in the capital markets, Table 6 investigates the relationship between financed payouts and a popular governance metric: the fraction of a firm's shares owned by institutional investors (e.g., Shleifer and Vishny, 1986; Harford et al., 2008).[21] We find that higher levels of institutional ownership tend to be associated with a lower tendency to finance payouts.[22] This evidence is consistent with Zwiebel's (1996) dynamic model in which entrenched managers use their payout and capital structure policies to voluntarily constrain their own future empire building, in the spirit of Easterbrook (1984) and Jensen (1986). By contrast, in firms with a strong institutional investor presence, we expect the board to be able to monitor investment decisions in 'real time'; our results suggest that such firms do not need to rely on financed payouts as a (costly) governance mechanism.

[20] Rampini and Viswanathan (2013) develop a dynamic agency-based capital structure model in which firms' debt capacity is subject to collateral constraints due to limited enforcement. In a similar spirit to Easterbrook (1984) and Jensen (1986), in Rampini and Viswanathan's model firms with a positive and persistent productivity shock finance new investments partially with debt while continuing to rely on payouts to help alleviate managerial agency costs.

[21] Other popular governance measures, such as a firm's fraction of insider ownership or the G and E indices (Gompers et al. (2003) and Bebchuk et al. (2009), respectively), are only available for a fraction of the firms in our sample and lead to noisy estimates.

[22] Except in the case of debt-financed dividends, which are not significantly associated with institutional ownership. That said, recall from Table 5 that firms with high institutional ownership pay lower dividends in the first place.

4.4.2 Market timing

Managers' desire to engage in market timing could be another reason behind financed payouts, and especially equity-financed payouts. Indeed, there are at least two market-timing strategies that can result in firms paying out and issuing equity during the same year. First, managers can issue shares when their firm is overvalued and pay dividends throughout; such a policy can make existing shareholders better off, and it results in equity-financed dividends. Second, managers can issue equity when their firm is overvalued and repurchase shares when the firm is undervalued; when the cycles of over- and undervaluation takes place during the same year, this strategy naturally results in equity-financed repurchases.[23]

The higher the idiosyncratic volatility of a firm's equity, the more frequent and pronounced are its manager's opportunities to exploit the firm's misvaluation by engaging in market timing (e.g., Warusawitharana and Whited, 2014). Consistent with this prediction, Table 6 shows that firms with higher idiosyncratic volatility of monthly stock returns are more likely to issue equity and repurchase shares during the same year. In addition, the results are also consistent with such firms using the proceeds of issuing overvalued shares to finance their dividends. While this evidence is far from conclusive, it suggests that the desire to time the market may help explain why 19% of the proceeds of firm-initiated equity issues are paid out by the same firms during the same year.[24]

4.4.3 Using debt-financed repurchases to increase earnings-per-share

There is ample evidence in the literature that at least some public-firm managers are concerned about meeting or beating analysts' earnings forecasts (see, e.g., Graham et al. (2005) for survey evidence, and Bartov et al. (2002) and Bhojraj et al. (2009) for empirical evidence). These forecasts are typically expressed in terms of earnings-per-share (EPS). EPS can be increased in the short-term

[23] Evidence on managers' ability to time the market and the extent to which market timing benefits existing shareholders is mixed (see, e.g., Babenko et al. (2014) and Dittmar and Field (2015)). However, irrespective of managers' actual market-timing abilities, the survey evidence in Brav et al. (2005) leaves little doubt that managers themselves do believe in their ability to successfully time the market and behave accordingly.

[24] Table 6 also shows a negative association between idiosyncratic volatility and a firm's propensity to debt-finance its payouts. This finding is consistent with the notion that firms with highly volatile equity attempt to preserve their cash and debt capacity to be able to better time their equity issues (Warusawitharana and Whited, 2014).

by repurchasing shares, and Hribar, Jenkins, and Johnson (2006) find that firms do indeed use repurchases to meet or beat EPS forecasts.

Firms can use share repurchases financed with debt (but not equity) to increase their EPS without depleting their cash reserves. We thus expect firms for which short-termist pressures to meet or beat analysts' forecasts are higher, such as those in industries where stock prices are highly sensitive to earnings news (Asker et al., 2015), to be more prone to financing their repurchases by raising debt—but not equity.[25] The evidence in Table 6 is consistent with this prediction.

Cheng, Harford, and Zhang (2015) show that when a CEO's bonus is directly tied to EPS and EPS is right below the bonus award threshold, her company is more likely to conduct a share repurchase. To further investigate whether debt-financed repurchases are motivated by managers' desire to boost EPS, we re-estimate the same model as in column 2 of Table 6 adding an indicator that captures whether the CEO's bonus is directly tied to EPS. Using data provided by Cheng et al., we find that firms whose CEOs have EPS benchmarks in their bonuses debt-finance a fraction of their repurchases that is 2.8 percentage points higher than those whose CEOs do not have EPS benchmarks (p=0.094)—a sizeable increase given that the average firm debt-finances 31.3% of its repurchases.[26] By contrast, as expected, we find no relation between EPS benchmarks and firms' propensity to finance their repurchases by initiating equity issues (p=0.500).

Taken together, these findings suggest that the desire to increase EPS may lead some firms to go as far as raising debt to finance their EPS-boosting share repurchases.

4.4.4 Signaling

Can financed payouts be explained by signaling motives? The large and widespread payout-financing behavior we document is *not* a natural prediction of the Miller and Rock (1985) class of signaling models. Intuitively, in Miller and Rock's model, dividends are only costly to the extent that

[25] To the extent that in industries where stock prices are highly sensitive to earnings misses they are also more sensitive to dividend cuts, we also expect firms in such industries to be more prone to debt-financing their dividends.
[26] The CEO bonus data are only available for 19% of the observations in Table 6. This is why we do not include this control in Table 6, and it likely explains why this result is somewhat noisily estimated.

firms need to cut investment to be able to fund them, and thus investors focus on the dividend *net* of the proceeds of security issues as signal. As a result, if investors observe that dividends are being financed in the capital markets, this effectively dilutes the value of the dividend signal, which is why Miller and Rock view financed payouts as "uneconomic as well as pointless."

A more promising signaling framework to accommodate financed payouts is Bhattacharya (1979). In this model, firms commit to a dividend level that they expect to fund using their free cash flow. Dividends provide a valuable signal of a firm's expected profitability because firms that suffer a negative shock and end up being unable to fund their dividends internally have to raise costly capital to meet their committed dividend level. Hence, in Bhattacharya's model, financed dividends can arise in the low-probability event that a firm is hit by an unexpected profitability shock.[27]

However, recall that Tables 7 and IA.3 show that transitory profitability shocks explain well under a fifth of aggregate payout and dividend gaps. Therefore, the vast majority of financed payouts we observe in the data do *not* conform to Bhattacharya's prediction of firms that have to finance their committed payout (or dividend) level after suffering a negative profitability shock. In addition, Table 6 shows that large firms, which are typically thought to suffer from less information asymmetry (e.g., Chae, 2005) and thus have less need to signal, are *more* prone to engaging in payout financing than smaller firms.

In sum, the widespread and persistent use of external funds to finance payouts in general and dividends in particular appear inconsistent with the notion that firms finance their payouts as a means to signal their quality to investors.

5. Conclusions

This paper is the first to systematically study the extent to which industrial public firms in the U.S. rely on the capital markets to finance their payouts. We find that, in the average sample year, 42% of payout payers initiate a net debt or equity issue the same year they pay out; the vast majority

[27] The original Bhattacharya model focuses on dividends; however, one could in principle extend it to share repurchases. The same is true for Miller and Rock's model.

of them, 36% of all payers, could not have funded their payouts without the proceeds of these issues, all else equal. Payout payers simultaneously raise 32% of aggregate payouts in the capital markets, predominantly by issuing debt; moreover, they raise an additional 9% of aggregate payouts through employee stock option exercises.

We show that financed payouts are procyclical, take the form of both dividends and share repurchases, and are persistent in time—in fact, the gap between firms' payouts and their internal funds remains virtually unchanged if we measure firms' sources and uses of funds over four- or eight-year intervals. Our results thus paint a very different picture from the widespread assumption that payouts are first and foremost a vehicle to return free cash flow to investors (e.g., Grullon, Michaely, and Swaminathan, 2002; DeAngelo, DeAngelo, and Stulz, 2006).

At first glance, financed payouts may appear an "extreme payout policy" (DeAngelo, DeAngelo, and Skinner, 2008) that is "uneconomic as well as pointless" (Miller and Rock, 1985). We show however that financed payouts are in fact consistent with several motivations. We find most support for the notion that firms use financed payouts to adjust their capital structure—for tax or agency reasons—without altering their cash reserves or triggering repatriation taxes. In particular, we show that firms use debt-financed payouts to increase their net leverage when the value of interest tax deductions increases exogenously due to an increase in state corporate income taxes. We also find suggestive evidence that equity-financed repurchases could be the result of firms' attempts to engage in market timing, while the desire to increase earnings-per-share may lead some firms to finance their repurchases by simultaneously raising debt. By contrast, signaling considerations or the desire to avoid costly dividend cuts do not appear to be first-order drivers of financed payouts.

While these motivations are not qualitatively new to the literature, the pervasiveness and economic magnitude of payout-financing behavior indicate that the benefits associated with financed payouts are more important than prior work has recognized. At the same time, our findings suggest that, relative to these benefits, the external financing costs associated with simultaneous payouts and

security issues might be less important than it is often assumed in the literature (see, e.g., DeAngelo et al.'s (2008) review).

At a more fundamental level, our paper implies that firms' liquidity, capital structure, and payout decisions are tightly related, and thus much can be gained by studying them jointly as interdependent elements of the financial ecosystem.

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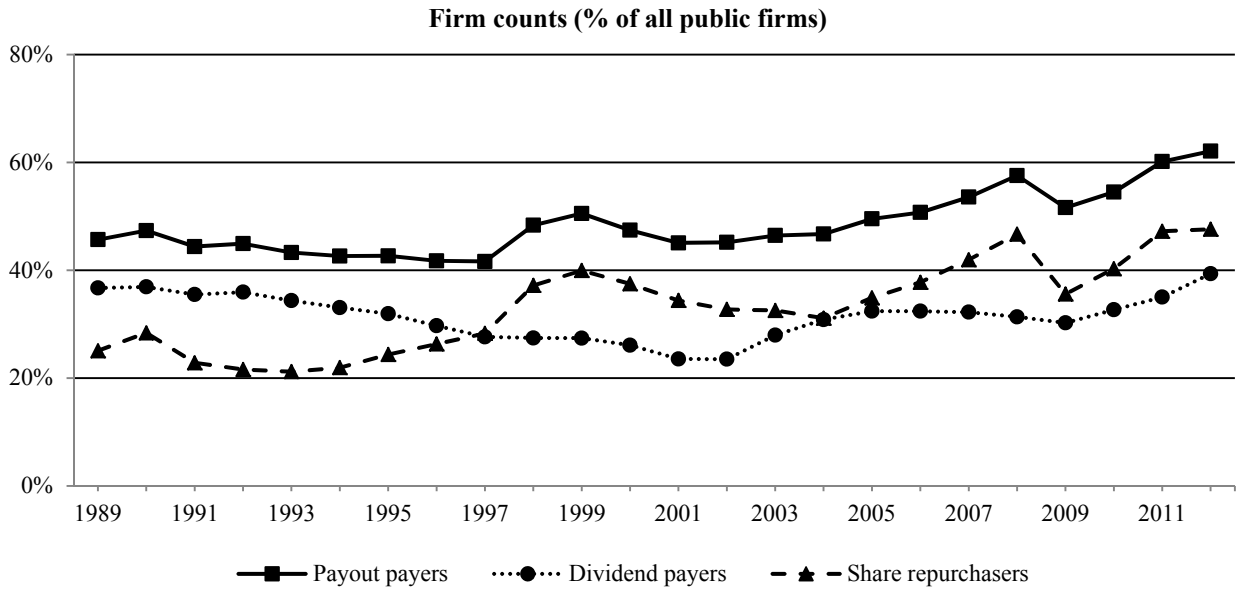
Figure 1. Aggregate payout activity.
For each year from 1989 to 2012, the top graph shows the percentage of public U.S. firms that are payout payers (i.e., pay dividends or repurchase shares), pay a dividend, or repurchase shares. The bottom graph shows the aggregate total payout (the sum of dividends and share repurchases) paid by public U.S. firms each year, as well as aggregate dividends and share repurchases. Dollar magnitudes are in billions of dollars of 2012 purchasing power.



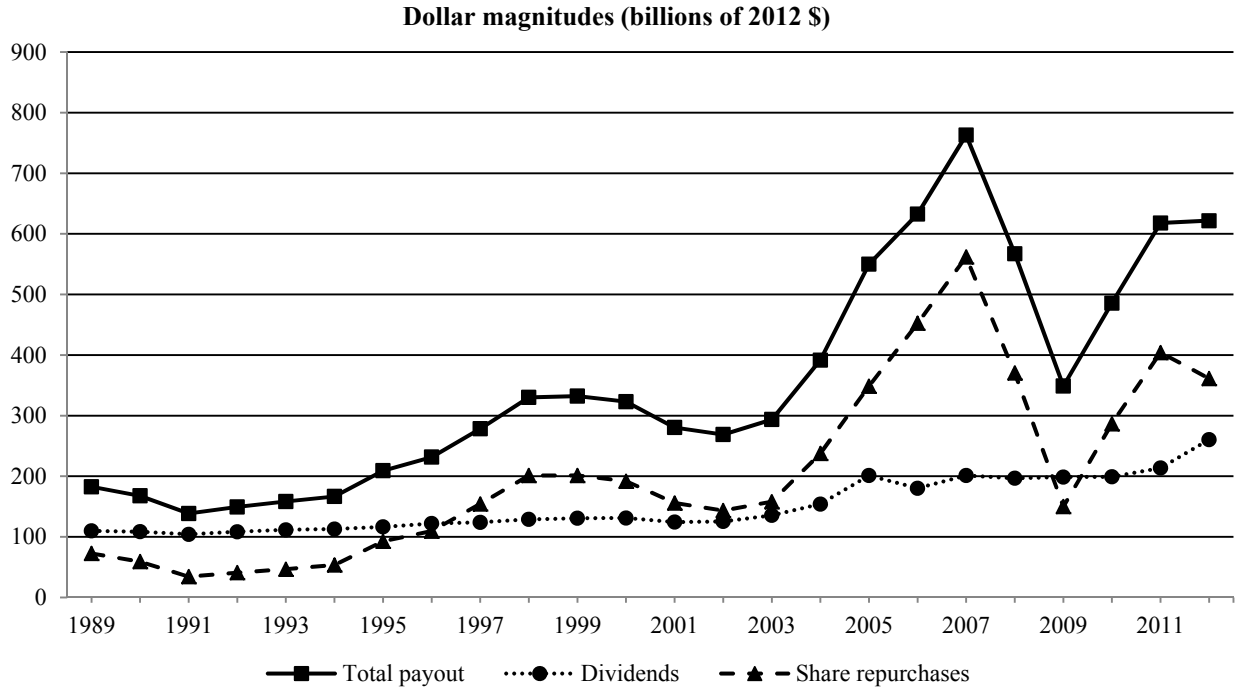
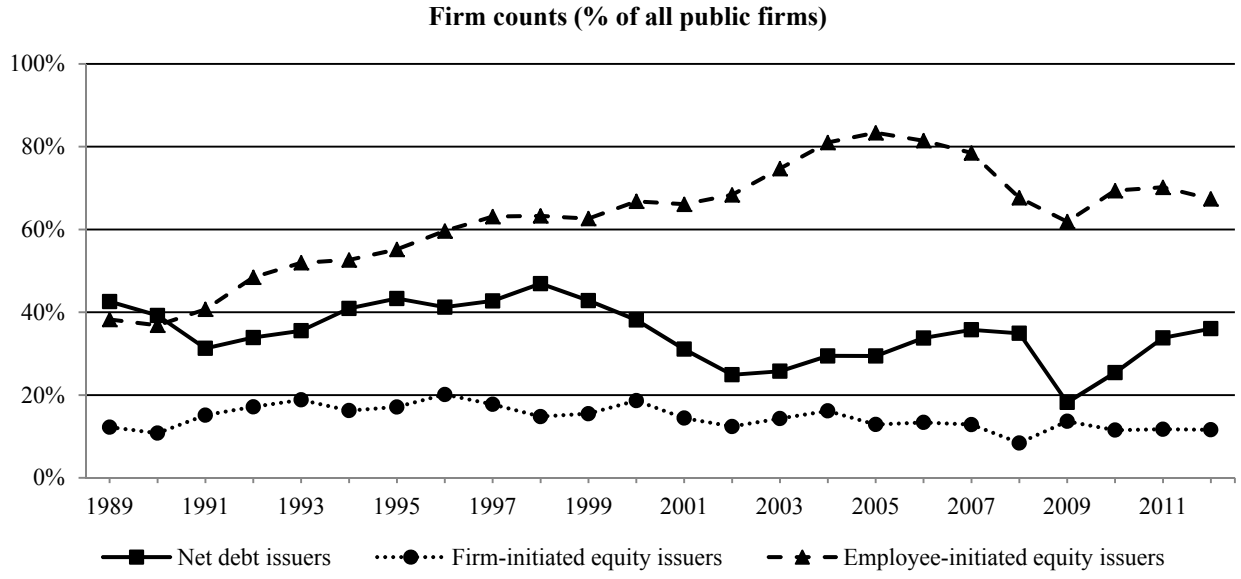


Figure 2. Aggregate capital raising activity.
For each year from 1989 to 2012, the top graph shows the percentage of public U.S. firms with positive net debt issues (defined as debt issues net of debt repurchases if this difference is positive, and zero otherwise), firm-initiated equity issues, and employee-initiated equity issues. The distinction between firm-initiated and employee-initiated equity issues follows McKeon (2015). The bottom graph shows the aggregate dollar amount raised via net debt issues, firm-initiated equity issues, and employee-initiated equity issues by public U.S. firms each year. Dollar magnitudes are in billions of dollars of 2012 purchasing power.



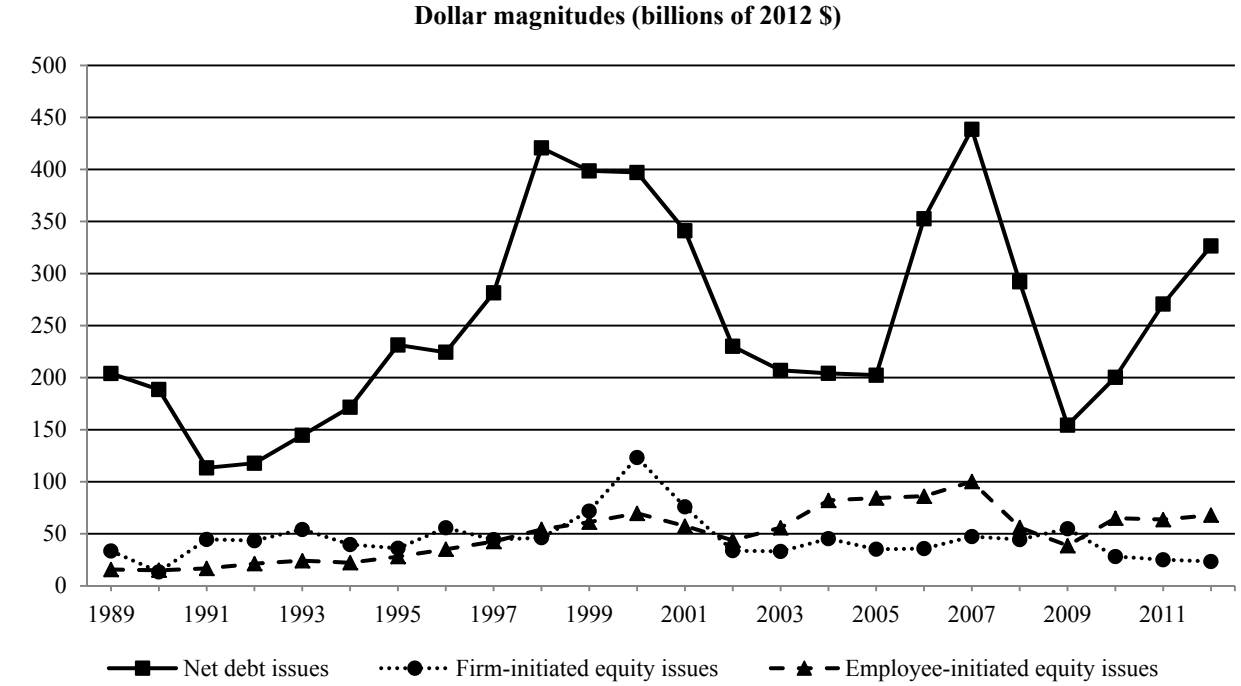
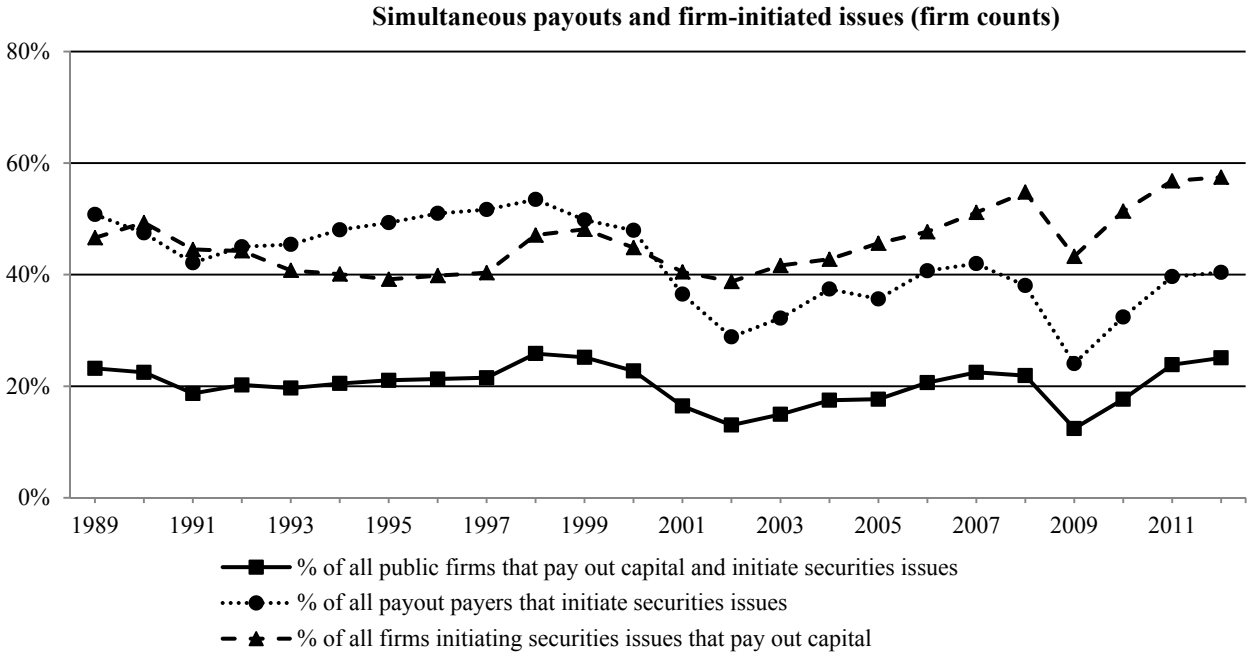


Figure 3. Simultaneous payouts and firm-initiated security issues.
For each year from 1989 to 2012, the solid line in the top graph plots the percentage of all public firms that pay out capital and initiate security issues during the same year; the dotted line plots the percentage of all payout payers that initiate security issues during the same year; and the dashed line plots the percentage of all firms initiating security issues that pay out capital during the same year. The bottom graph plots, for each year *t*, the aggregate magnitude of simultaneous payouts and firm-initiated security issues aggregated over all public U.S. firms (i.e., the sum of $\min\{AI_{it}, TP_{it}\}$ across all public firms, where *AI* captures the proceeds of firm-initiated security issues (net debt and equity) and *TP* is total payout). Dollar magnitudes are in billions of dollars of 2012 purchasing power.



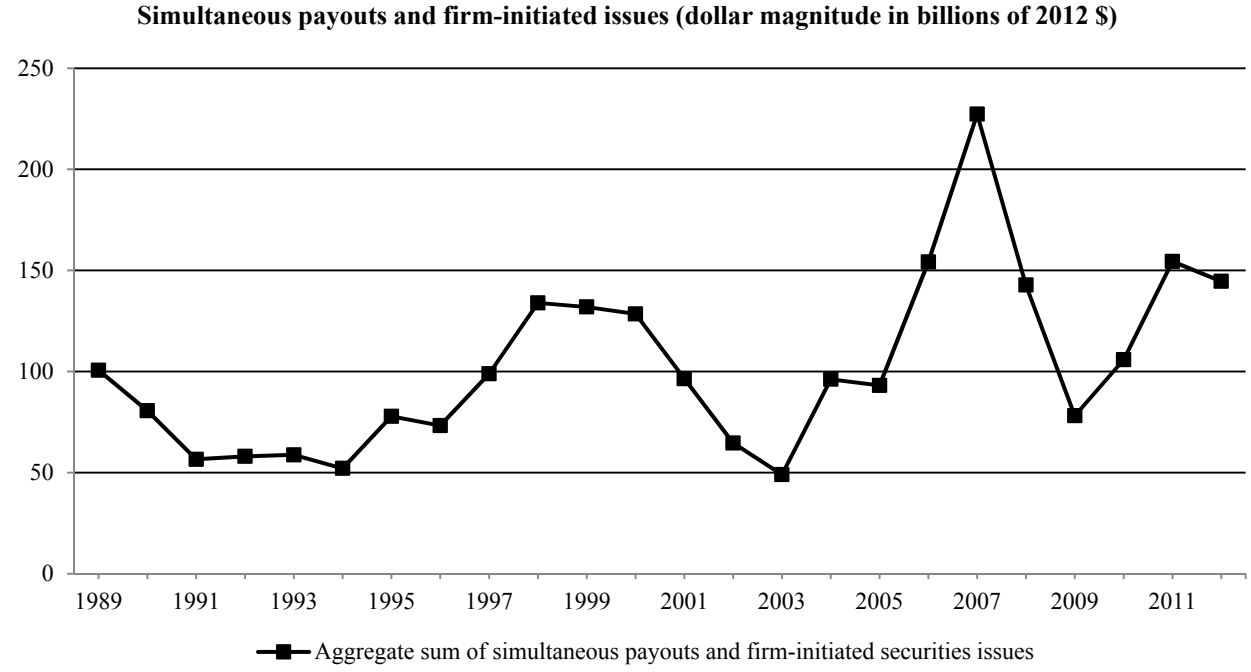
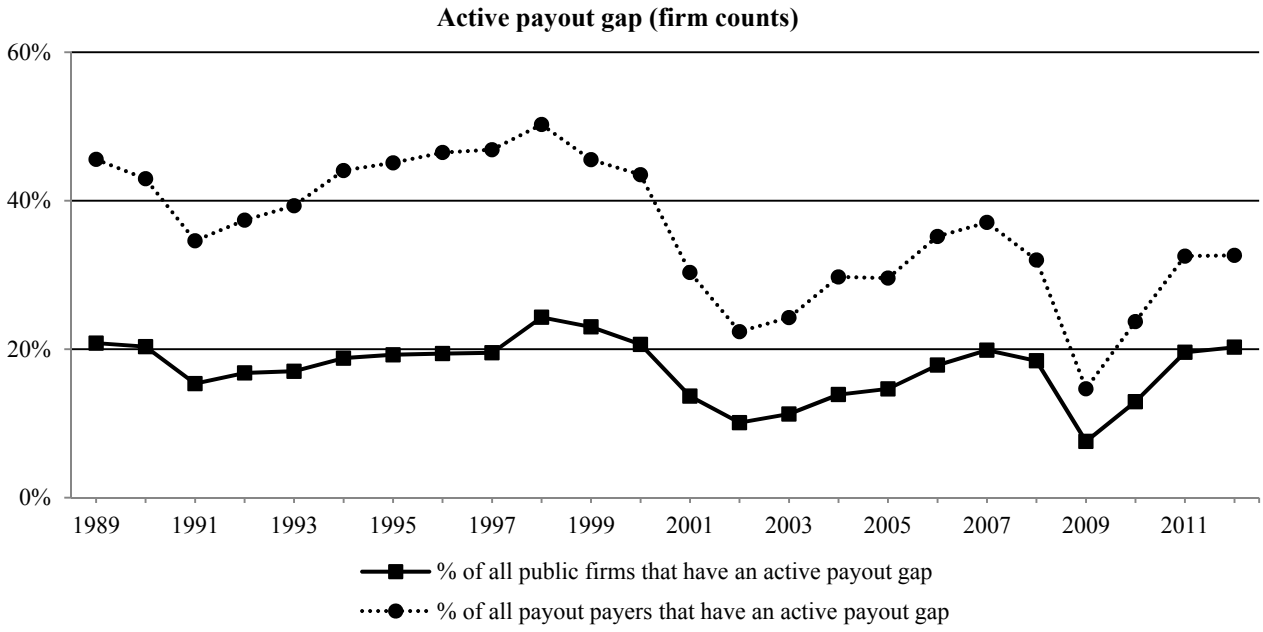


Figure 4. Can firms fund their payouts without actively raising capital?
For each year from 1989 to 2012, the solid line in the top graph plots the percentage of all public firms that have an active payout gap, i.e., firms with $APG_{it} \equiv \min\{\max\{TP_{it} - (FCF_{it} + CR_{it} + EE_{it}), 0\}, TP_{it}\} > \$100{,}000$; these firms need the proceeds of firm-initiated security issues to fund their payouts, all else equal. (*TP* is total payout; *FCF* is free cash flow, the sum of operating cash flow and investment cash flow; *CR* is cash reduction; and *EE* captures the proceeds of employee-initiated equity issues.) The dotted line in the top graph plots the percentage of payout payers that have an active payout gap. The bottom graph plots, for each year *t*, the aggregate magnitude of active payout gaps aggregated over all public U.S. firms (i.e., the sum of APG_{it} across all public firms). Dollar magnitudes are in billions of dollars of 2012 purchasing power.



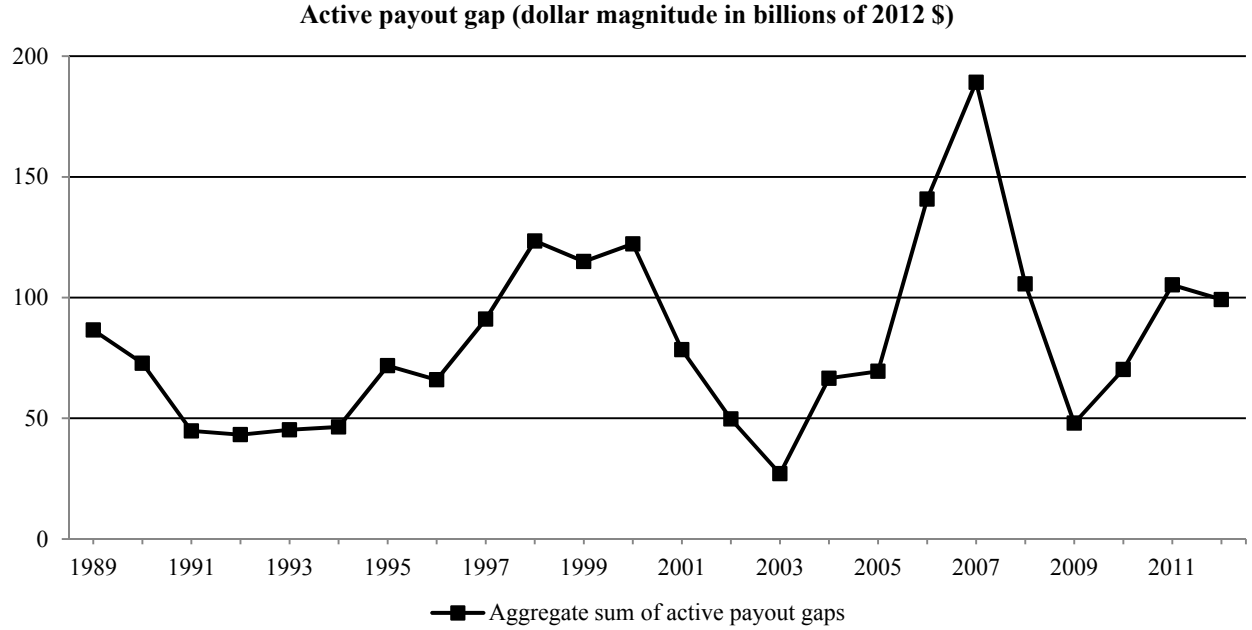
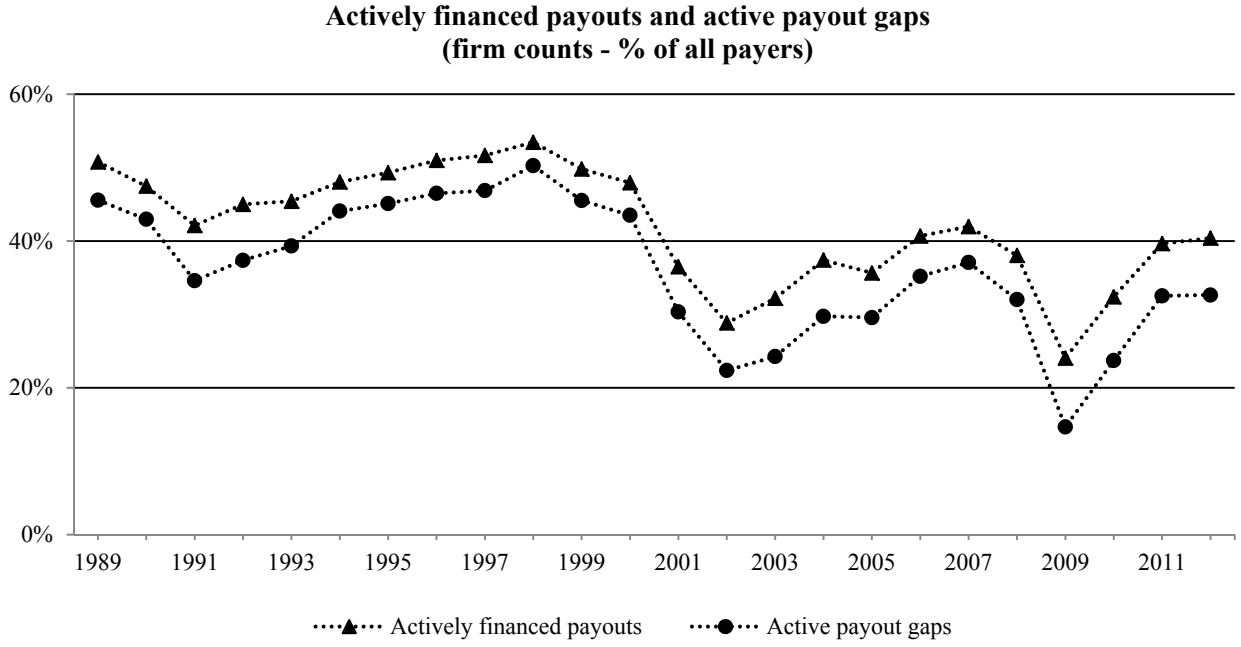


Figure 5. Actively financed payouts and active payout gaps over time.
For each year from 1989 to 2012, the top graph plots the percentage of payout payers with actively financed payouts (top line) and active payout gaps (bottom line). The bottom graph plots the aggregate magnitude of actively financed payouts (top line) and active payouts gaps (bottom line) aggregated over all public U.S. firms. Dollar magnitudes are in billions of dollars of 2012 purchasing power.



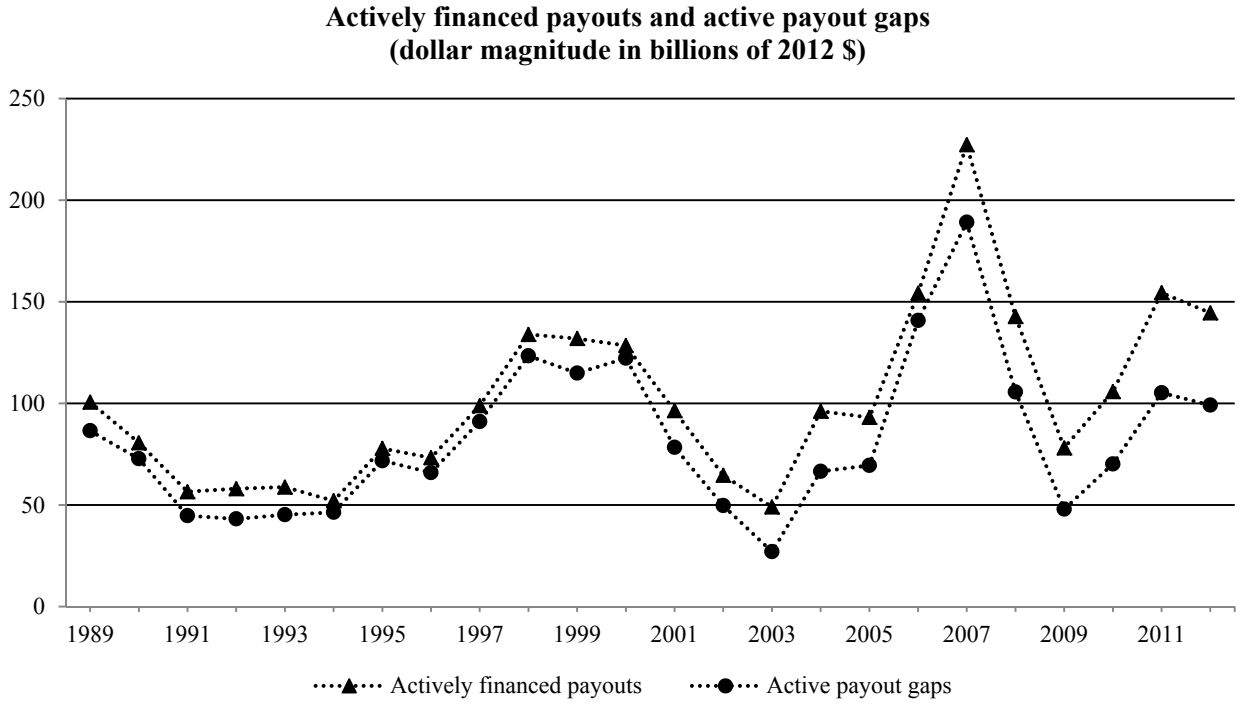


Figure 6. To what extent are debt-financed payouts motivated by the desire to avoid repatriation taxes?

This figure investigates the extent to which debt-financed payouts are motivated by firms' desire to avoid repatriation taxes. For each firm-year that debt-finances its payout, we construct an upper bound for the dollar amount of debt-financed payouts that are motivated by the desire to avoid repatriation taxes as min{*ND*, *TP*, *Foreign earnings subject to repatriation taxes*}, where *ND* denotes the proceeds of net debt issues and *TP* is total payout. We measure foreign earnings subject to repatriation taxes as a firm's total foreign earnings if the product of these foreign earnings times the statutory U.S. tax rate of 35% minus the foreign taxes paid by the firm is positive, and zero otherwise (see, e.g., Hanlon, Lester, and Verdi (2015) for a related approach). For each year *t* from 1989 to 2012, the graph plots the average of the ratio min{ND_{it}, TP_{it}, *Foreign earnings subject to repatriation taxes*$_{it}$}/ min{ND_{it}, TP_{it}} across all firms *i* that debt-finance their payouts in year *t* (i.e., across all firms with min{ND_{it}, TP_{it}}>>0).

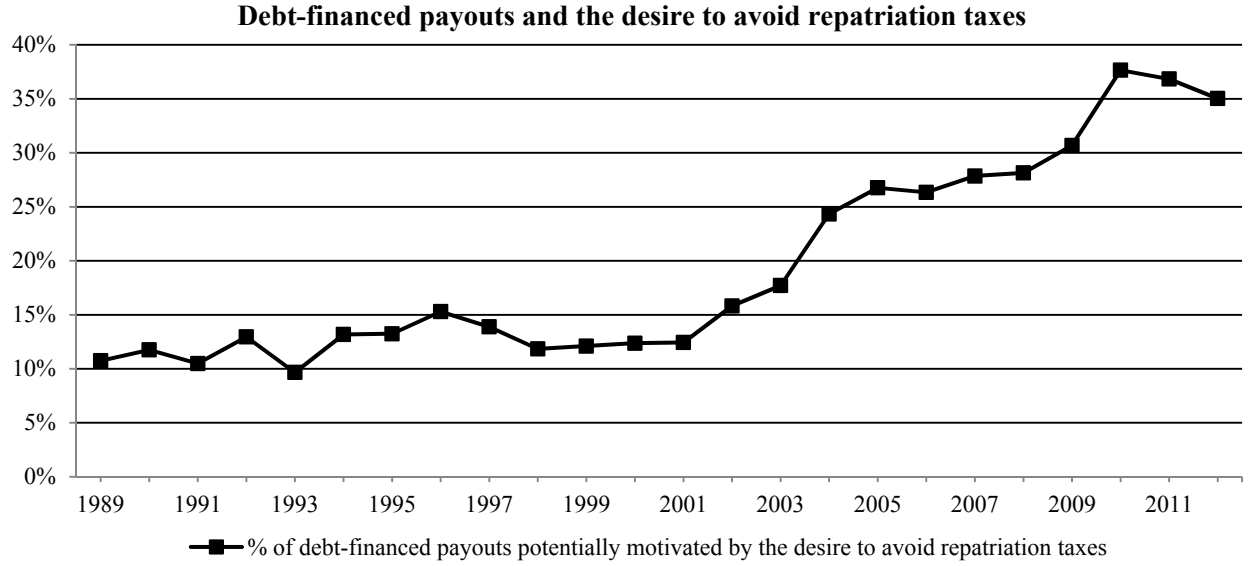


Table 1. Simultaneous payouts and security issues.
This table examines the extent to which firms simultaneously pay out and raise capital during the same fiscal year. In Panel A, we consider all security issues; specifically, *SI* is the sum of the proceeds of net debt issues (i.e., max{debt issued – debt repurchased, 0}), firm-initiated equity issues, and employee-initiated equity issues. In Panel B, we focus only on instances in which firms actively raise capital by considering only firm-initiated security issues; *AI* is thus defined as the sum of the proceeds of net debt issues and firm-initiated equity issues. On the payout side, columns 1 through 5 examine total payout (*TP*) without distinguishing between dividends and share repurchases; columns 6 and 7 focus on dividends only (*Div*); and columns 8 and 9 focus on share repurchases only (*Rep* denotes the dollar amount of shares repurchased).

Panel A. All security issues.

	Firm counts			**Dollar magnitudes**					
	% public firms that raise & pay out capital	% payout payers that also raise capital	% firms raising capital that also pay out capital	Aggregate sum of min{*SI, TP*} over …		Aggregate sum of min{*SI, Div*} over …		Aggregate sum of min{*SI, Rep*} over …	
Annual figures averaged over …				aggregate sum of *TP*	aggregate sum of *SI*	aggregate sum of *Div*	aggregate sum of *SI*	aggregate sum of *Rep*	aggregate sum of *SI*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1989-1992	32.9%	72.2%	49.5%	51.4%	39.7%	56.6%	29.8%	62.5%	15.6%
1993-1996	33.7%	79.2%	43.3%	41.8%	29.9%	48.4%	21.3%	49.6%	13.7%
1997-2000	39.4%	83.8%	47.4%	48.5%	30.9%	62.3%	16.2%	53.9%	20.4%
2001-2004	39.3%	85.7%	47.1%	36.3%	32.2%	50.8%	19.9%	40.4%	20.3%
2005-2008	47.6%	90.2%	54.2%	33.9%	48.5%	51.9%	23.3%	39.6%	38.9%
2009-2012	47.5%	83.1%	59.4%	31.8%	50.0%	44.3%	29.6%	40.8%	36.9%
all years	40.1%	82.4%	50.1%	40.6%	38.5%	52.4%	23.3%	47.8%	24.3%

Panel B. Only firm-initiated security issues (net debt and firm-initiated equity issues).

	Firm counts			**Dollar magnitudes**					
	% public firms that actively raise & pay out capital	% payout payers that also actively raise capital	% firms actively raising capital that also pay out capital	Aggregate sum of min{*AI, TP*} over …		Aggregate sum of min{*AI, Div*} over …		Aggregate sum of min{*AI, Rep*} over …	
Annual figures averaged over …				aggregate sum of *TP*	aggregate sum of A*I*	aggregate sum of *Div*	aggregate sum of A*I*	aggregate sum of *Rep*	aggregate sum of A*I*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1989-1992	21.1%	46.3%	46.2%	45.7%	38.5%	50.5%	29.0%	53.2%	14.6%
1993-1996	20.6%	48.4%	40.0%	34.3%	27.4%	39.1%	19.2%	39.0%	12.0%
1997-2000	23.8%	50.7%	45.1%	38.9%	27.9%	51.1%	14.9%	41.3%	17.6%
2001-2004	15.5%	33.7%	40.9%	24.9%	26.6%	35.8%	16.8%	24.1%	14.6%
2005-2008	20.7%	39.1%	49.8%	24.1%	42.0%	36.1%	19.8%	26.7%	32.2%
2009-2012	19.8%	34.1%	52.2%	23.1%	44.3%	32.5%	26.4%	28.7%	32.2%
all years	20.2%	42.1%	45.7%	31.8%	34.5%	40.9%	21.0%	35.5%	20.5%

Table 2. Simultaneous payouts and security issues – the role of debt and equity.
This table examines which securities firms issue when they simultaneously pay out and raise capital during the same year. Panel A focuses on net debt issues, with *ND* denoting the proceeds of net debt issues (i.e., max{debt issued – debt repurchased, 0}); Panel B examines firm-initiated equity issues (denoted *FE*); and Panel C focuses on employee-initiated equity issues (denoted *EE*). Columns 1 through 5 focus on total payout (*TP*) without distinguishing between dividends and share repurchases; columns 6 and 7 focus on dividends (*Div*); and columns 8 and 9 focus on share repurchases (*Rep*).

Panel A. Net debt issues.

	Firm counts			**Dollar magnitudes**					
	% public firms that issue net debt & pay out capital	% payout payers that also issue net debt	% firms issuing net debt that also pay out capital	Aggregate sum of min{*ND, TP*} over …		Aggregate sum of min{*ND, Div*} over …		Aggregate sum of min{*ND, Rep*} over …	
Annual figures averaged over ...				aggregate sum of *TP*	aggregate sum of *ND*	aggregate sum of *Div*	aggregate sum of *ND*	aggregate sum of *Rep*	aggregate sum of *ND*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1989-1992	18.6%	40.7%	50.5%	39.5%	41.0%	44.2%	31.4%	46.8%	15.5%
1993-1996	18.3%	43.0%	45.5%	31.6%	31.6%	36.7%	22.5%	36.2%	13.8%
1997-2000	21.5%	45.7%	50.4%	38.1%	32.4%	50.7%	17.5%	40.2%	20.3%
2001-2004	13.4%	29.2%	48.1%	22.6%	28.9%	33.1%	18.7%	21.8%	15.8%
2005-2008	19.3%	36.4%	57.4%	23.7%	46.9%	35.8%	22.3%	26.3%	36.0%
2009-2012	17.9%	30.8%	61.8%	22.7%	50.4%	31.8%	30.3%	28.4%	36.2%
all years	18.2%	37.6%	52.3%	29.7%	38.5%	38.7%	23.8%	33.3%	22.9%

Panel B. Firm-initiated equity issues.

	Firm counts			**Dollar magnitudes**					
	% public firms that issue firm-init. equity & pay out capital	% payout payers that also issue firm-initiated equity	% firms issuing firm-initiated equity that also pay out capital	Aggregate sum of min{*FE, TP*} over …		Aggregate sum of min{*FE, Div*} over …		Aggregate sum of min{*FE, Rep*} over …	
Annual figures averaged over ...				aggregate sum of *TP*	aggregate sum of *FE*	aggregate sum of *Div*	aggregate sum of *FE*	aggregate sum of *Rep*	aggregate sum of *FE*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1989-1992	4.3%	9.4%	30.7%	8.2%	40.6%	8.7%	28.6%	10.0%	18.7%
1993-1996	4.2%	9.8%	22.9%	3.6%	14.2%	3.9%	9.7%	3.4%	5.9%
1997-2000	4.2%	9.0%	25.4%	2.2%	10.1%	2.5%	4.2%	2.3%	6.8%
2001-2004	3.3%	7.3%	23.4%	3.1%	18.2%	3.3%	8.7%	3.2%	10.6%
2005-2008	2.6%	4.9%	22.1%	1.3%	18.2%	2.7%	12.1%	0.6%	6.3%
2009-2012	2.9%	5.2%	24.0%	0.7%	11.0%	1.2%	8.7%	0.4%	5.2%
all years	3.6%	7.6%	24.7%	3.2%	18.7%	3.7%	12.0%	3.3%	9.0%

Panel C. Employee-initiated equity issues.

	Firm counts			Dollar magnitudes					
	% public firms that issue emp.-init. equity & pay out capital	% payout payers that also issue employee-initiated equity	% firms issuing employee-initiated equity that also pay out capital	Aggregate sum of min{*EE, TP*} over …		Aggregate sum of min{*EE, Div*} over …		Aggregate sum of min{*EE, Rep*} over …	
Annual figures averaged over ...				aggregate sum of *TP*	aggregate sum of *EE*	aggregate sum of *Div*	aggregate sum of *EE*	aggregate sum of *Rep*	aggregate sum of *EE*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1989-1992	22.9%	50.4%	56.1%	9.1%	83.5%	11.7%	74.1%	16.5%	48.2%
1993-1996	25.8%	60.7%	47.2%	11.0%	76.6%	15.4%	65.6%	16.5%	43.6%
1997-2000	31.6%	67.4%	49.5%	12.1%	68.1%	18.7%	43.2%	16.8%	56.1%
2001-2004	35.7%	77.9%	49.3%	13.9%	72.7%	20.6%	46.5%	19.2%	56.2%
2005-2008	43.8%	83.0%	56.7%	11.1%	85.9%	23.2%	55.4%	15.0%	79.7%
2009-2012	42.3%	74.1%	62.9%	9.8%	85.9%	17.3%	64.3%	15.2%	74.6%
all years	33.7%	68.9%	53.6%	11.2%	78.8%	17.8%	58.2%	16.6%	59.7%

Table 3. Can firms fund their payouts without raising capital?

This table examines whether firms with simultaneous payouts and security issues could have funded their payouts without the proceeds of these issues, all else equal. Columns 1 and 2 show the prevalence of firms with a payout gap, i.e., firms with $PG_{it} \equiv \min\{\max\{TP_{it} - (FCF_{it} + CR_{it}), 0\}, TP_{it}\} > \$100{,}000$ (denoted $PG_{it} >> 0$), while columns 3 and 4 show the dollar magnitude of these gaps relative to total payouts. Columns 5 and 6 show the prevalence of firms with an *active* payout gap, i.e., firms with $APG_{it} \equiv \min\{\max\{TP_{it} - (FCF_{it} + CR_{it} + EE_{it}), 0\}, TP_{it}\} >> 0$, while columns 7 and 8 show the dollar magnitude of these active gaps relative to total payouts. (*TP* is total payout; *FCF* is free cash flow, the sum of operating cash flow and investment cash flow; *CR* is cash reduction; and *EE* captures the proceeds of employee-initiated equity issues.) In Panel A, *PG* and *APG* are defined annually and, as in Tables 1 and 2, we report annual counts or dollar magnitudes averaged over four years to conserve space. By contrast, in Panel B all sources and uses of funds are aggregated over four-year intervals, and we define payout gaps as follows: $PG_{it}^{t+3} \equiv \min\left\{\max\left\{\sum_{j=0}^{3} TP_{it+j} - \sum_{j=0}^{3}\left(FCF_{it+j} + CR_{it+j}\right), 0\right\}, \sum_{j=0}^{3} TP_{it+j}\right\}$ (and analogously for active payout gaps).

	Payout gaps (*PG*) (i.e., firms that cannot fund their payout without raising capital)				**Active payout gaps (*APG*)** (i.e., firms that cannot fund their payout without actively raising capital)			
	Firm counts		*Dollar magnitudes*		*Firm counts*		*Dollar magnitudes*	
	% of public firms with a payout gap	% of payout payers with a payout gap	Average of the ratio *PG* /*TP* across all firms with a gap	Aggregate sum of *PG* over aggregate sum of *TP* paid by all public firms	% of public firms with an active payout gap	% of payout payers with an active payout gap	Average of the ratio *APG* /*TP* across all firms with an active gap	Aggregate sum of *APG* over aggregate sum of *TP* paid by all public firms
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A. Gap defined annually (we report annual figures averaged over four-year intervals)								
1989-1992	20.3%	44.6%	80.7%	41.0%	18.3%	40.1%	83.5%	38.0%
1993-1996	21.4%	50.4%	81.3%	32.7%	18.6%	43.7%	85.0%	29.8%
1997-2000	26.1%	55.6%	80.0%	40.5%	21.9%	46.5%	84.3%	35.6%
2001-2004	17.9%	39.1%	71.1%	22.2%	12.2%	26.7%	81.2%	18.2%
2005-2008	25.9%	49.0%	62.3%	24.6%	17.7%	33.5%	74.1%	19.6%
2009-2012	21.6%	37.2%	61.5%	19.6%	15.1%	25.9%	73.6%	15.3%
average of all years	22.2%	46.0%	72.8%	30.1%	17.3%	36.1%	80.3%	26.1%
Panel B. Gap defined over four-year intervals (sources and uses of capital aggregated over four years)								
1989-1992	36.2%	52.6%	78.3%	41.0%	32.8%	47.6%	80.0%	36.3%
1993-1996	40.8%	62.3%	82.4%	33.2%	36.6%	55.9%	83.4%	28.0%
1997-2000	52.7%	71.6%	82.4%	43.2%	46.4%	63.0%	83.9%	37.0%
2001-2004	33.0%	47.4%	77.4%	19.9%	25.1%	36.1%	79.6%	15.1%
2005-2008	46.3%	62.1%	66.0%	28.2%	36.6%	49.1%	68.6%	20.6%
2009-2012	35.7%	47.4%	64.3%	20.5%	27.5%	36.5%	71.7%	14.5%
average of all four-year intervals	40.8%	57.2%	75.1%	31.0%	34.2%	48.0%	77.9%	25.3%

Table 4. Prevalence and aggregate magnitude of financed payouts: summary table.
This table succinctly summarizes our findings regarding the prevalence and magnitude of (actively) financed payouts and (active) payout gaps. To do so, the table combines the results of Table 1 (columns 2 and 4 in Panels A and B) and Table 3 (columns 2, 4, 6, and 8 in Panel A). The first and second rows differ in their treatment of the proceeds of employee-initiated equity issues. In the first row, firms that finance their payouts include those that finance their payouts with the proceeds of employee-initiated equity issues; analogously, our definition of payout gap in the first row includes those firms that can close their gaps with the proceeds of employee-initiated equity issues. By contrast, the second row focuses only on firms that actively finance their payouts by initiating simultaneous debt or equity issues, and on active payout gaps that can only be closed with firm-initiated issues, all else equal. The table shows annual figures averaged over all years in our sample period.

	Firm counts		*Dollar magnitudes*	
	% of payers that finance their payouts by simultaneously raising capital	% of payers with payout gaps	% of aggregate total payouts financed by simultaneously raising capital	% of aggregate total payouts that give rise to payout gaps
	(1)	(2)	(3)	(4)
Financed payouts and payout gaps	82.4%	46.0%	40.6%	30.1%
Only actively financed payouts and active payout gaps	42.1%	36.1%	31.8%	26.1%

Table 5. Characteristics of payout payers.

This table examines the characteristics of firms that pay dividends and repurchase shares. The table shows the results of a tobit model in which the dependent variable is the capital a firm pays out in the form of dividends (columns 1 and 2) or share repurchases (columns 3 and 4), scaled by the beginning-of-year market value of the firm's equity (columns 1 and 3) or beginning-of-year assets (columns 2 and 4). Control variables are measured as of the beginning of the fiscal year, except for operating cash flow and investment, which are scaled by beginning-of-year assets. All regressions include year fixed effects. Robust standard errors clustered at the firm level are shown in italics beneath the coefficient estimates. To maximize the number of informative digits shown, all coefficients and standard errors are multiplied by 100 (except for those corresponding to the variable 'tax cost of repatriating foreign earnings', which is itself multiplied by 100). We use ***, **, and * to denote significance at the 1%, 5%, and 10% level (two-sided) respectively.

	Dividends		**Repurchases**	
Dependent variable:	dividends / mkt. val. equity	dividends / assets	repurchases / mkt. val. equity	repurchases / assets
	(1)	(2)	(3)	(4)
Operating profit	2.604***	3.906***	7.215***	11.130***
	0.262	*0.319*	*0.347*	*0.508*
Investment (capex + acquisitions)	-1.108***	-1.211***	-4.207***	-5.678***
	0.165	*0.191*	*0.275*	*0.373*
Market-to-book	-0.223***	0.143***	-0.263***	0.394***
	0.028	*0.028*	*0.029*	*0.043*
Size	0.480***	0.420***	0.381***	0.382***
	0.029	*0.031*	*0.037*	*0.048*
Investment-grade credit rating	0.996***	1.170***	0.813***	1.191***
	0.098	*0.110*	*0.155*	*0.211*
Excess leverage	-1.971***	-2.774***	-2.455***	-3.894***
	0.194	*0.214*	*0.252*	*0.323*
Excess cash	-0.242	-0.514**	2.440***	2.885***
	0.209	*0.257*	*0.265*	*0.366*
Tax cost of repatriating foreign earnings	-0.375***	-0.159	0.464***	1.196***
	0.084	*0.107*	*0.103*	*0.169*
Share of institutional investors	-1.462***	-1.457***	2.007***	3.211***
	0.171	*0.188*	*0.212*	*0.285*
Idiosyncratic volatility	-17.459***	-20.836***	-15.499***	-20.428***
	0.780	*0.933*	*0.774*	*0.976*
Sensitivity of stock prices to earnings news	0.391***	0.474***	-0.010	-0.014
	0.053	*0.062*	*0.070*	*0.093*
F test: all coefficients = 0	100.7***	68.1***	113.3***	93.7***
No. observations	80,162	80,162	80,162	80,162
No. firms	9,741	9,741	9,741	9,741

Table 6. Characteristics of firms that actively finance their payouts.

This table examines the characteristics of firms that actively finance their payouts through net debt or firm-initiated equity issues. The table reports the results of estimating a fractional logit model (i.e., a generalized linear model using the logit link function and the binomial distribution family (Papke and Wooldridge, 1996)) in which the dependent variable is the fraction of dividends or the fraction of share repurchases that is financed through net debt issues (columns 1 and 2) or firm-initiated equity issues (columns 3 and 4). (Only firms that pay dividends (columns 1 and 3) or repurchase shares (columns 2 and 4) are included in the analysis.) Specifically, the dependent variable in columns 1 and 2 is $\min\{Net\ debt\ issues_{it}, P_{it}\}/P_{it}$, where P denotes dividends (column 1) or share repurchases (column 2); analogously, the dependent variable in columns 3 and 4 is $\min\{Firm\text{-}initiated\ equity\ issues_{it}, P_{it}\}/P_{it}$. For ease of interpretation, the table reports conditional marginal effects evaluated at the means of the independent variables (the independent variables are the same as in Table 5). All regressions include year fixed effects. Robust standard errors clustered at the firm level are shown in italics beneath the coefficient estimates. We use ***, **, and * to denote significance at the 1%, 5%, and 10% level (two-sided) respectively.

	Debt-financed payouts		**Equity-financed payouts**	
Dependent variable:	% dividends financed by debt	% repurchases financed by debt	% dividends financed by equity	% repurchases financed by equity
	(1)	(2)	(3)	(4)
Operating profit	-1.650***	-1.193***	-0.213***	-0.136***
	0.089	*0.050*	*0.012*	*0.009*
Investment (capex + acquisitions)	2.715***	2.248***	0.179***	0.132***
	0.101	*0.069*	*0.008*	*0.006*
Market-to-book	-0.050***	-0.047***	0.003***	0.003***
	0.007	*0.004*	*0.001*	*0.001*
Size	0.028***	0.029***	0.005***	0.003***
	0.004	*0.003*	*0.001*	*0.001*
Investment-grade credit rating	-0.005	-0.002	-0.011***	-0.011***
	0.012	*0.011*	*0.004*	*0.004*
Excess leverage	-0.106***	-0.087***	0.094***	0.052***
	0.031	*0.026*	*0.008*	*0.006*
Excess cash	-0.794***	-0.705***	-0.024**	-0.035***
	0.049	*0.032*	*0.010*	*0.006*
Tax cost of repatriating foreign earnings	0.057***	0.021**	-0.013**	-0.011***
	0.014	*0.009*	*0.005*	*0.004*
Share of institutional investors	0.030	-0.051***	-0.026***	-0.024***
	0.023	*0.019*	*0.008*	*0.006*
Idiosyncratic volatility	-0.694***	-0.618***	0.332***	0.184***
	0.113	*0.083*	*0.024*	*0.016*
Sensitivity of stock prices to earnings news	0.040***	0.051***	-0.012***	-0.008***
	0.007	*0.006*	*0.003*	*0.003*
χ^2 test: all coefficients = 0	1,420.5***	2,040.7***	1,619.8***	1,655.4***
No. observations	25,147	26,247	25,147	26,247
No. firms	3,377	5,380	3,377	5,380

Table 7. The role of negative profitability shocks in explaining active payout gaps.

This table examines the extent to which the active payout gaps identified in Table 3 are the result of negative profitability shocks. Specifically, the table replicates the analysis shown in columns 6 and 8 of Table 3, Panel A but using two modified definitions of active payout gap. In columns 1 and 2, we assume that no firm is less profitable than the median firm in its industry, thus defining a firm's counterfactual active payout gap as follows: $APG_{it}^{IndOcf} \equiv \min\{\max\{TP_{it} - (\max\{OCF_{it}, \textit{Industry median } OCF_{it}\} + ICF_{it} + CR_{it} + EE_{it}), 0\}, TP_{it}\}$, where *Industry median* OCF_{it} is the median ratio of operating cash flow/lagged assets in the firm's industry-year multiplied by the firm's lagged assets. (*TP* is total payout; *ICF* is investment cash flow; *CR* is cash reduction; and *EE* captures the proceeds of employee-initiated equity issues. Industry is defined at the 2-digit SIC level.) Note that if a firm is more profitable than the median firm in its industry, its counterfactual gap equals its actual gap as defined in equation (3). Analogously, in columns 3 and 4 we assume that no firm is less profitable than it was in the previous year; the counterfactual active payout gap is then: $APG_{it}^{LagOcf} \equiv \min\{\max\{TP_{it} - (\max\{OCF_{it}, OCF_{it-1}\} + ICF_{it} + CR_{it} + EE_{it}), 0\}, TP_{it}\}$. For ease of comparison, columns 5 and 6 reproduce the actual active payout gap results from columns 6 and 8 of Table 3, Panel A, which are based on a firm's actual operating cash flow.

	Active payout gaps					
	We assume that no firm is less profitable than ...				Actual level of profitability	
	... the median firm in its industry		... that same firm was in the previous year			
Annual figures averaged over ...	% of payout payers with a counterfactual active payout gap	Aggregate sum of APG^{IndOcf} over aggregate sum of *TP*	% of payout payers with a counterfactual active payout gap	Aggregate sum of APG^{LagOcf} over aggregate sum of *TP*	% of payout payers with an active payout gap	Aggregate sum of *APG* over aggregate sum of *TP*
	(1)	(2)	(3)	(4)	(5)	(6)
1989-1992	31.8%	34.4%	31.3%	30.9%	40.1%	38.0%
1993-1996	35.5%	26.8%	35.1%	25.2%	43.7%	29.8%
1997-2000	38.7%	33.6%	38.3%	30.4%	46.5%	35.6%
2001-2004	19.2%	16.7%	19.8%	15.8%	26.7%	18.2%
2005-2008	26.3%	17.8%	27.1%	17.0%	33.5%	19.6%
2009-2012	19.9%	13.9%	20.0%	12.4%	25.9%	15.3%
all years	28.6%	23.9%	28.6%	22.0%	36.1%	26.1%
counterfactual over actual	79.2%	91.5%	79.3%	84.2%		

Table 8. The role of investment spikes in explaining active payout gaps.

This table examines the extent to which the active payout gaps identified in Table 3 are the result of firms with unusually high levels of investment. Analogously as Table 7, the table replicates the analysis shown in columns 6 and 8 of Table 3, Panel A but using two modified definitions of active payout gap. In columns 1 and 2, we assume that no firm invests more than the median firm in its industry, thus defining a firm's counterfactual active payout gap as follows: $APG_{it}^{IndInv} \equiv \min\{\max\{TP_{it} - (OCF_{it} + \max\{ICF_{it}, \textit{Industry median } ICF_{it}\} + CR_{it} + EE_{it}), 0\}, TP_{it}\}$, where in *Industry median* ICF_{it} we substitute CAPEX and acquisitions (both of which enter the definition of investment cash flow, *ICF*, with a negative sign) by the median ratio of (CAPEX + acquisitions)/lagged assets in the firm's industry-year multiplied by the firm's lagged assets. (*TP* is total payout; *OCF* is operating cash flow; *CR* is cash reduction; and *EE* captures the proceeds of employee-initiated equity issues. Industry is defined at the 2-digit SIC level.) Analogously, in columns 3 and 4 we assume that no firm invests more than it did in the previous year; the counterfactual active payout gap is then: $APG_{it}^{LagInv} \equiv \min\{\max\{TP_{it} - (OCF_{it} + \max\{ICF_{it}, \textit{Lagged } ICF_{it}\} + CR_{it} + EE_{it}), 0\}, TP_{it}\}$, where in *Lagged* ICF_{it} we substitute CAPEX and acquisitions by their lagged values. For ease of comparison, columns 5 and 6 reproduce the actual active payout gap results from columns 6 and 8 of Table 3, Panel A, which are based on a firm's actual level of investment.

	Active payout gaps					
	We assume that no firm invests more than ...					
	... the median firm in its industry		... that same firm did in the previous year		Actual level of investment	
Annual figures averaged over ...	% of payout payers with a counterfactual active payout gap	Aggregate sum of APG^{IndInv} over aggregate sum of *TP*	% of payout payers with a counterfactual active payout gap	Aggregate sum of APG^{IndInv} over aggregate sum of *TP*	% of payout payers with an active payout gap	Aggregate sum of *APG* over aggregate sum of *TP*
	(1)	(2)	(3)	(4)	(5)	(6)
1989-1992	24.8%	21.9%	30.6%	28.4%	40.1%	38.0%
1993-1996	28.5%	19.4%	31.0%	20.4%	43.7%	29.8%
1997-2000	30.8%	22.2%	34.7%	24.6%	46.5%	35.6%
2001-2004	14.8%	9.6%	17.8%	11.8%	26.7%	18.2%
2005-2008	19.5%	12.4%	22.6%	13.5%	33.5%	19.6%
2009-2012	14.2%	7.9%	16.5%	9.5%	25.9%	15.3%
all years	22.1%	15.5%	25.5%	18.0%	36.1%	26.1%
counterfactual over actual	61.3%	59.6%	70.8%	69.2%		

Table 9. Do firms use debt-financed payouts to increase their leverage in response to state-level tax increases?

This table examines whether firms use debt-financed payouts to increase their leverage in response to exogenous increases in state corporate income taxes in their headquarter state. We follow a difference-in-differences approach that exploits the staggered nature of corporate income tax changes, using as controls firms that have not been affected by a tax change in their headquarter state. In column 1, the dependent variable is an indicator that captures whether the firm had a simultaneous payout and net debt issue (defined as in Table 2); in column 2, it is an indicator that captures whether the firm had a simultaneous payout and firm-initiated equity issue (also defined as in Table 2). In both columns, we estimate probit models with year fixed effects; results are similar if we estimate linear probability models. The variable 'corporate tax increase at $t-1$' is an indicator that captures whether the state where the firm is headquartered increased its corporate income tax in year $t-1$ (following Heider and Ljungqvist (2015), we allow firms to respond to tax changes with a one year lag); and analogously for the variable 'corporate tax decrease at $t-1$'. For the complete list of corporate income tax changes, see Heider and Ljungqvist (2015). We screen out firms with a zero after-interest marginal tax rate in $t-1$ (according to John Graham's estimates; see http://faculty.fuqua.duke.edu/~jgraham/taxform.html), as only firms with profits to shield from tax have an incentive to increase debt as taxes increase. For ease of interpretation, we report average marginal effects instead of the probit coefficient estimates. Standard errors for the marginal effects (shown in italics beneath the estimates of the marginal effects) are computed using the delta method and are block-bootstrapped using 200 repetitions to account for the non-linearity of the model. We use ***, **, and * to denote significance at the 1%, 5%, and 10% level (two-sided), respectively.

Dependent variable:	Simultaneous payout and **debt** issue?	Simultaneous payout and **equity** issue?
	(1)	(2)
Corporate tax increase at $t-1$	0.022**	-0.006
	0.011	*0.005*
Corporate tax decrease at $t-1$	-0.005	-0.002
	0.007	*0.003*
Excess leverage	-0.184***	0.047***
	0.012	*0.005*
Excess cash	-0.379***	-0.011**
	0.014	*0.005*
χ^2 test: all coefficients = 0	1,883.8***	354.8***
No. observations	71,745	71,745
No. firms	8,770	8,770

INTERNET APPENDIX

(NOT INTENDED FOR PUBLICATION)

Table IA.1. Can firms fund their payouts without raising capital? Eight-year panels.

This table examines whether firms with simultaneous payouts and security issues could have funded their payouts without the proceeds of these issues, all else equal. The table complements the analysis shown in Table 3 by aggregating sources and uses of funds over eight-year intervals. Specifically, in this table payout gaps are defined as follows: $PG_{it}^{t+7} \equiv \min\left\{\max\left\{\sum_{j=0}^{7} TP_{it+j} - \sum_{j=0}^{7}\left(FCF_{it+j} + CR_{it+j}\right), 0\right\}, \sum_{j=0}^{7} TP_{it+j}\right\}$, and analogously for active payout gaps. (*TP* is total payout; *FCF* is free cash flow, the sum of operating cash flow and investment cash flow; and *CR* is cash reduction.) As in Table 3, columns 1 and 2 show the prevalence of firms with a payout gap, while columns 3 and 4 show the dollar magnitude of these gaps relative to total payouts (also aggregated over eight-year intervals). Columns 5 and 6 show the prevalence of firms with an *active* payout gap, while columns 7 and 8 show the dollar magnitude of these active gaps relative to total payouts.

	Payout gaps (*PG*) (i.e., firms that cannot fund their payout without raising capital)				**Active payout gaps (*APG*)** (i.e., firms that cannot fund their payout without actively raising capital)			
	Firm counts		*Dollar magnitudes*		*Firm counts*		*Dollar magnitudes*	
	% of public firms with a payout gap	% of payout payers with a payout gap	Average of the ratio *PG* /*TP* across all firms with a gap	Aggregate sum of *PG* over aggregate sum of *TP* paid by all public firms	% of public firms with an active payout gap	% of payout payers with an active payout gap	Average of the ratio *APG* /*TP* across all firms with an active gap	Aggregate sum of *APG* over aggregate sum of *TP* paid by all public firms
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Gap defined over eight-year intervals (sources and uses of capital aggregated over eight years)								
1989-1996	52.8%	63.7%	78.5%	35.5%	48.0%	57.9%	77.9%	29.5%
1997-2004	55.1%	64.0%	74.9%	27.1%	45.0%	52.2%	76.7%	20.1%
2005-2012	53.2%	61.2%	60.3%	20.9%	41.6%	47.8%	63.1%	13.2%
average of all eight-year intervals	53.7%	63.0%	71.2%	27.8%	44.8%	52.6%	72.6%	20.9%

Table IA.2. Characteristics of firms that actively finance their payouts – alternative specifications.

This table complements the analysis in Table 6 of the characteristics of firms that actively finance their payouts through net debt or firm-initiated equity issues. In each column, the dependent variable is the same as in Table 6: the fraction of dividends or the fraction of repurchases that is financed through net debt issues (columns 1 and 2) or firm-initiated equity issues (columns 3 and 4). (Only firms that pay dividends (columns 1 and 3) or repurchase shares (columns 2 and 4) are included in the analysis.) Specifically, the dependent variable in columns 1 and 2 is $\min\{\textit{Net debt issues}_{it}, P_{it}\}/P_{it}$, where P denotes dividends (column 1) or share repurchases (column 2); analogously, the dependent variable in columns 3 and 4 is $\min\{\textit{Firm-initiated equity issues}_{it}, P_{it}\}/P_{it}$. The independent variables are also the same as in Table 6. The table differs from Table 6 in that instead of estimating fractional logit models, we estimate standard OLS regressions without firm fixed effects (in Panel A) and with firm fixed effects (in Panel B). All regressions include year fixed effects. Robust standard errors clustered at the firm level are shown in italics beneath the coefficient estimates. We use ***, **, and * to denote significance at the 1%, 5%, and 10% level (two-sided) respectively.

Panel A. OLS results without firm fixed effects.

	Debt-financed payouts		**Equity-financed payouts**	
Dependent variable:	% dividends financed by debt	% repurchases financed by debt	% dividends financed by equity	% repurchases financed by equity
	(1)	(2)	(3)	(4)
Operating profit	-0.924***	-0.752***	-0.530***	-0.402***
	0.042	*0.030*	*0.022*	*0.019*
Investment (capex + acquisitions)	1.430***	1.451***	0.451***	0.365***
	0.028	*0.026*	*0.023*	*0.020*
Market-to-book	-0.021***	-0.020***	0.018***	0.015***
	0.003	*0.002*	*0.002*	*0.001*
Size	0.021***	0.024***	0.005***	0.002
	0.003	*0.003*	*0.002*	*0.001*
Investment-grade credit rating	0.004	0.005	-0.007	-0.004
	0.010	*0.010*	*0.005*	*0.004*
Excess leverage	-0.063***	-0.044**	0.162***	0.086***
	0.023	*0.020*	*0.014*	*0.011*
Excess cash	-0.471***	-0.439***	-0.009	-0.059***
	0.027	*0.019*	*0.015*	*0.010*
Tax cost of repatriating foreign earnings	0.038***	0.013*	-0.011***	-0.008***
	0.010	*0.007*	*0.004*	*0.003*
Share of institutional investors	0.025	-0.045***	-0.048***	-0.036***
	0.017	*0.015*	*0.010*	*0.008*
Idiosyncratic volatility	-0.364***	-0.398***	0.839***	0.450***
	0.070	*0.056*	*0.055*	*0.038*
Sensitivity of stock prices to earnings news	0.023***	0.038***	-0.011***	-0.005**
	0.006	*0.006*	*0.002*	*0.002*
R^2	23.8%	25.9%	18.0%	13.7%
No. observations	25,147	26,247	25,147	26,247
No. firms	3,377	5,380	3,377	5,380

Panel B. OLS results with firm fixed effects.

	Debt-financed payouts		Equity-financed payouts	
Dependent variable:	% dividends financed by debt	% repurchases financed by debt	% dividends financed by equity	% repurchases financed by equity
	(1)	(2)	(3)	(4)
Operating profit	-1.340***	-0.970***	-0.309***	-0.215***
	0.055	*0.047*	*0.028*	*0.026*
Investment (capex + acquisitions)	1.572***	1.560***	0.323***	0.242***
	0.033	*0.033*	*0.024*	*0.021*
Market-to-book	0.013***	0.001	0.009***	0.012***
	0.005	*0.003*	*0.003*	*0.002*
Size	0.010	0.007	-0.013***	-0.022***
	0.008	*0.008*	*0.005*	*0.005*
Investment-grade credit rating	0.028*	0.035**	-0.008	0.010
	0.016	*0.017*	*0.009*	*0.007*
Excess leverage	-0.534***	-0.384***	0.236***	0.145***
	0.033	*0.030*	*0.020*	*0.018*
Excess cash	-0.746***	-0.650***	-0.124***	-0.115***
	0.044	*0.031*	*0.022*	*0.019*
Tax cost of repatriating foreign earnings	0.038***	0.025***	-0.012**	0.000
	0.011	*0.009*	*0.005*	*0.004*
Share of institutional investors	0.076***	0.044*	-0.099***	-0.085***
	0.030	*0.025*	*0.018*	*0.017*
Idiosyncratic volatility	-0.297***	-0.257***	0.345***	0.307***
	0.093	*0.079*	*0.067*	*0.052*
Sensitivity of stock prices to earnings news	0.007	0.016**	-0.002	-0.002
	0.006	*0.007*	*0.003*	*0.003*
R^2 (within)	23.5%	22.8%	6.0%	5.3%
No. observations	25,147	26,247	25,147	26,247
No. firms	3,377	5,380	3,377	5,380

Table IA.3. The role of negative profitability shocks in explaining active dividend and repurchase gaps.

This table breaks down the role that dividends and share repurchases play in explaining the actual and counterfactual active payout gaps identified in Table 7. To do this, we define a firm's active dividend gap analogously as its active payout gap, $ADivG_{it} \equiv \min\{\max\{Div_{it} - (FCF_{it} + CR_{it} + EE_{it}), 0\}, Div_{it}\}$, while a firm's active repurchase gap is $ARepG_{it} \equiv \min\{\max\{Rep_{it} - (FCF_{it} + CR_{it} + EE_{it}), 0\}, Rep_{it}\}$. (*Div* and *Rep* are the dollar amount paid out via dividends and share repurchases; *FCF* is free cash flow; *CR* is cash reduction; and *EE* captures the proceeds of employee-initiated equity issues.) The table follows a similar structure as Table 7. Specifically, columns 1 through 4 show counterfactual active dividend and repurchase gaps assuming that no firm is less profitable than the median firm in its industry (e.g., $ADivG_{it}^{IndOcf} \equiv \min\{\max\{Div_{it} - (\max\{OCF_{it}, \textit{Industry median } OCF_{it}\} + ICF_{it} + CR_{it} + EE_{it}), 0\}, Div_{it}\}$). (Columns 1 and 2 show the percentage of all payout payers with counterfactual dividend and repurchase gaps, while columns 3 and 4 show the aggregate sum of counterfactual dividend and repurchase gaps over the aggregate sum of total payouts (*TP*).) In columns 5 through 8, we define counterfactual active dividend and repurchase gaps assuming that no firm is less profitable than it was in the previous year. Columns 9 through 12 show the actual active dividend and repurchase gaps, $ADivG_{it}$ and $ARepG_{it}$, which are based on a firm's actual operating cash flow.

	Active dividend and repurchase gaps											
	We assume that no firm is less profitable than ...								Actual level of profitability			
	... the median firm in its industry				... that same firm was in the previous year							
Annual figures averaged over ...	% of payout payers with a counter-factual active dividend gap	% of payout payers with a counter-factual active repurchase gap	Aggregate sum of $ADivG^{IndOcf}$ over aggregate sum of *TP*	Aggregate sum of $ARepG^{IndOcf}$ over aggregate sum of *TP*	% of payout payers with a counter-factual active dividend gap	% of payout payers with a counter-factual active repurchase gap	Aggregate sum of $ADivG^{LagOcf}$ over aggregate sum of *TP*	Aggregate sum of $ARepG^{LagOcf}$ over aggregate sum of *TP*	% of payout payers with an active dividend gap	% of payout payers with an active repurchase gap	Aggregate sum of *ADivG* over aggregate sum of *TP*	Aggregate sum of *ARepG* over aggregate sum of *TP*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1989-1992	22.6%	14.1%	19.8%	9.5%	22.5%	13.7%	18.0%	8.0%	28.7%	17.9%	22.5%	10.2%
1993-1996	24.2%	15.6%	13.7%	8.1%	24.3%	14.8%	13.6%	7.6%	30.1%	19.3%	16.1%	8.8%
1997-2000	19.1%	26.3%	12.1%	15.9%	18.9%	25.8%	10.9%	14.2%	23.3%	31.5%	13.2%	16.9%
2001-2004	9.1%	12.5%	6.9%	6.6%	9.3%	12.8%	6.6%	6.2%	13.0%	16.9%	7.5%	7.3%
2005-2008	11.3%	16.9%	3.8%	9.8%	12.0%	17.2%	3.8%	9.2%	15.1%	21.3%	4.3%	10.8%
2009-2012	8.7%	12.4%	4.0%	5.5%	8.8%	12.6%	3.7%	5.0%	11.6%	16.1%	4.4%	6.1%
all years	15.8%	16.3%	10.1%	9.2%	16.0%	16.1%	9.4%	8.4%	20.3%	20.5%	11.4%	10.0%
counterfactual over actual	77.8%	79.5%	88.6%	92.3%	78.5%	78.7%	83.0%	83.6%				

Table IA.4. The role of investment spikes in explaining active dividend and repurchase gaps.

This table breaks down the role that dividends and share repurchases play in explaining the actual and counterfactual active payout gaps identified in Table 8. To do this, we define a firm's active dividend and repurchase gaps as in Table IA.3: $ADivG_{it} \equiv \min\{\max\{Div_{it} - (FCF_{it} + CR_{it} + EE_{it}), 0\}, Div_{it}\}$ and $ARepG_{it} \equiv \min\{\max\{Rep_{it} - (FCF_{it} + CR_{it} + EE_{it}), 0\}, Rep_{it}\}$. (*Div* and *Rep* are the dollar amount paid out via dividends and share repurchases; *FCF* is free cash flow; *CR* is cash reduction; and *EE* captures the proceeds of employee-initiated equity issues.) The table follows a similar structure as Table 8. Specifically, columns 1 through 4 show counterfactual active dividend and repurchase gaps assuming that no firm invests more than the median firm in its industry (e.g., $ADivG_{it}^{IndInv} \equiv \min\{\max\{Div_{it} - (OCF_{it} + \max\{ICF_{it}, \textit{Industry median } ICF_{it}\} + CR_{it} + EE_{it}), 0\}, Div_{it}\}$). (Columns 1 and 2 show the percentage of all payout payers with counterfactual dividend and repurchase gaps, while columns 3 and 4 show the aggregate sum of counterfactual dividend and repurchase gaps over the aggregate sum of total payouts (*TP*).) In columns 5 through 8, we define counterfactual active dividend and repurchase gaps assuming that no firm invests more than it did in the previous year. Columns 9 through 12 show the actual active dividend and repurchase gaps, $ADivG_{it}$ and $ARepG_{it}$, which are based on a firm's actual level of investment.

	Active dividend and repurchase gaps											
	We assume that no firm invests more than ...								Actual level of investment			
	... the median firm in its industry				... that same firm did in the previous year							
Annual figures averaged over ...	% of payout payers with a counter-factual active dividend gap	% of payout payers with a counter-factual active repurchase gap	Aggregate sum of $ADivG^{IndInv}$ over aggregate sum of *TP*	Aggregate sum of $ARepG^{IndInv}$ over aggregate sum of *TP*	% of payout payers with a counter-factual active dividend gap	% of payout payers with a counter-factual active repurchase gap	Aggregate sum of $ADivG^{LagInv}$ over aggregate sum of *TP*	Aggregate sum of $ARepG^{LagInv}$ over aggregate sum of *TP*	% of payout payers with an active dividend gap	% of payout payers with an active repurchase gap	Aggregate sum of *ADivG* over aggregate sum of *TP*	Aggregate sum of *ARepG* over aggregate sum of *TP*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1989-1992	16.3%	10.9%	12.0%	5.9%	13.7%	13.3%	8.0%	7.0%	28.7%	17.9%	22.5%	10.2%
1993-1996	18.2%	12.1%	10.3%	6.0%	14.8%	13.3%	7.6%	6.4%	30.1%	19.3%	16.1%	8.8%
1997-2000	13.7%	20.2%	8.0%	10.2%	25.8%	22.9%	14.2%	11.6%	23.3%	31.5%	13.2%	16.9%
2001-2004	6.3%	9.3%	3.9%	4.1%	12.8%	10.9%	6.2%	4.4%	13.0%	16.9%	7.5%	7.3%
2005-2008	7.5%	12.5%	2.5%	7.3%	17.2%	14.4%	9.2%	7.7%	15.1%	21.3%	4.3%	10.8%
2009-2012	5.7%	8.2%	1.9%	3.0%	12.6%	9.7%	5.0%	3.6%	11.6%	16.1%	4.4%	6.1%
all years	11.3%	12.2%	6.4%	6.1%	16.1%	14.1%	8.4%	6.8%	20.3%	20.5%	11.4%	10.0%
counterfactual over actual	55.6%	59.7%	56.6%	60.7%	79.4%	68.7%	73.7%	67.6%				

Table IA.5. The role of payout increases in explaining active payout, dividend, and repurchase gaps.

This panel examines the extent to which the active payout gaps identified in Table 3 are the result of payout increases. To shed light on this question, columns 1 and 2 show the prevalence and economic magnitude of counterfactual active payout gaps under the assumption that firms pay out no more than they did in the prior year. Specifically, we define a firm's counterfactual active payout gap as follows: $APG_{it}^{LagTP} \equiv \min\{\max\{\min\{TP_{it}, RegDiv_{it\text{-}1} + Rep_{it\text{-}1}\} - (FCF_{it} + CR_{it} + EE_{it}), 0\}, TP_{it}\}$, where $RegDiv_{it\text{-}1}$ is the firm's regular dividend (its total dividend minus any special dividend) per share in year t-1 multiplied by the number of shares in year t. (*TP* is total payout; *FCF* is free cash flow; *CR* is cash reduction; *EE* captures the proceeds of employee-initiated equity issues; and *Rep* is the dollar amount paid out via share repurchases.) Analogously, columns 3 and 4 report the prevalence and economic magnitude of counterfactual active dividend gaps under the assumption that no firm pays a dividend that is higher than the regular dividend-per-share it paid in the previous year, and columns 5 and 6 do the same for counterfactual active repurchase gaps under the assumption that no firm pays out more via share repurchases than it did in the previous year. For ease of comparison, columns 7 through 12 show actual active payout gaps, dividend gaps, and repurchase gaps, which are based on a firm's actual level of total payout, dividend, and repurchases, respectively.

	We assume that no firm ...											
	... has higher **total payout** than it did in the previous year		... pays higher **regular dividends per share** than it did in the previous year		... has higher **repurchases** than it did in the previous year		Actual level of **total payout**		Actual level of **dividends**		Actual level of **repurchases**	
Annual figures averaged over ...	% of payers with a counter-factual active payout gap	Aggregate sum of APG^{LagTP} over aggregate sum of *TP*	% of payers with a counter-factual active dividend gap	Aggregate sum of $ADivG^{LaDiv}$ over aggregate sum of *TP*	% of payers with a counter-factual active repurchase gap	Aggregate sum of $ARepG^{LaRep}$ over aggregate sum of *TP*	% of payers with an active payout gap	Aggregate sum of *APG* over aggregate sum of *TP*	% of payers with an active dividend gap	Aggregate sum of *ADivG* over aggregate sum of *TP*	% of payers with an active repurchase gap	Aggregate sum of *ARepG* over aggregate sum of *TP*
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1989-1992	35.3%	29.1%	27.6%	20.9%	15.2%	6.6%	40.1%	38.0%	28.7%	22.5%	17.9%	10.2%
1993-1996	38.3%	22.0%	29.3%	15.4%	16.2%	5.1%	43.7%	29.8%	30.1%	16.1%	19.3%	8.8%
1997-2000	39.7%	26.7%	22.8%	12.7%	26.6%	11.0%	46.5%	35.6%	23.3%	13.2%	31.5%	16.9%
2001-2004	21.9%	12.9%	12.5%	7.1%	13.7%	4.5%	26.7%	18.2%	13.0%	7.5%	16.9%	7.3%
2005-2008	26.0%	11.2%	14.3%	3.6%	16.3%	5.8%	33.5%	19.6%	15.1%	4.3%	21.3%	10.8%
2009-2012	20.0%	8.7%	10.5%	3.3%	12.6%	3.1%	25.9%	15.3%	11.6%	4.4%	16.1%	6.1%
all years	30.2%	18.4%	19.5%	10.5%	16.8%	6.0%	36.1%	26.1%	20.3%	11.4%	20.5%	10.0%
counterfactual over actual	83.7%	70.6%	96.0%	92.7%	81.8%	60.0%						