

# Short-Termism and Capital Flows

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## Abstract

During the period 2007-2016, S&P 500 firms distributed to shareholders more than \$4.2 trillion via stock buybacks and \$2.8 trillion via dividends-\$7 trillion in total. These shareholder payouts amounted to over 96% of the firms' net income. Academics, corporate lawyers, asset managers, and politicians point to such shareholder-payout figures as compelling evidence that "short-termism" and "quarterly capitalism" are impairing firms' ability to invest, innovate, and provide good wages. We explain why S&P 500 shareholder-payout figures provide a misleadingly incomplete picture of corporate capital flows and the financial capacity of U.S. public firms. Most importantly, they fail to account for offsetting equity issuances by firms. In addition, S&P 500 firms are not representative of public firms generally as they tend to be older and return more cash to shareholders. We show that, taking into account issuances, net shareholder payouts by all U.S. public firms during the period 2007-2016 were in fact only about \$3.33 trillion, 41% of their net income. We also explain that net income is a poor proxy for the amount of capital potentially available for investment, as R&D and other future-oriented expenditures are already deducted in computing it. Our analysis and data can help explain why investment has been increasing and cash balances have been ballooning even though S&P 500 firms appear to be paying out all of their profits to shareholders. In short, S&P 500 shareholder-payout figures are not indicative of actual capital flows in public firms, and thus cannot provide much basis for the claim that short-termism is starving public firms of needed capital.

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Keywords: short-termism, quarterly capitalism, corporate governance, share buybacks, open market repurchases, dividends, equity issuances, seasoned equity offerings, equity compensation, acquisitions, payout policy, capital flows, capital distribution

JEL Classifications: G14, G32, K22

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# Short-Termism and Capital Flows\*

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## Abstract

During the period 2007-2016, S&P 500 firms distributed to shareholders more than \$4.2 trillion via stock buybacks and \$2.8 trillion via dividends—\$7 trillion in total. These shareholder payouts amounted to over 96% of the firms’ net income. Academics, corporate lawyers, asset managers, and politicians point to such shareholder-payout figures as compelling evidence that “short-termism” and “quarterly capitalism” are impairing firms’ ability to invest, innovate, and provide good wages.

We explain why S&P 500 shareholder-payout figures provide a misleadingly incomplete picture of corporate capital flows and the financial capacity of U.S. public firms. Most importantly, they fail to account for offsetting equity issuances by firms. In particular, we explain the importance of accounting for indirect equity issuances, which constitute the majority of total equity issuances in public firms. In addition, S&P 500 firms are not representative of public firms generally as they tend to be older and return more cash to shareholders. We show that, taking into account issuances, *net* shareholder payouts by all U.S. public firms during the period 2007-2016 were in fact only about \$3.33 trillion, 41% of their net income.

We also explain that net income is a poor proxy for the amount of capital potentially available for investment, as R&D and other future-oriented expenditures are already deducted in computing it. Our analysis and data can help explain why investment has been increasing and cash balances have been ballooning even though S&P 500 firms appear to be paying out all of their profits to shareholders. In short, S&P 500 shareholder-payout figures are not indicative of actual capital flows in public firms, and thus cannot provide much basis for the claim that short-termism is starving public firms of needed capital.

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The effects of the short-termist phenomenon are troubling... more and more corporate leaders have responded with actions that can deliver immediate returns to shareholders, such as buybacks or dividend increases, while underinvesting in innovation, skilled workforces or essential capital expenditures necessary to sustain long-term growth. In 2014, dividends and buybacks... [in S&P 500 firms] alone totaled more than \$900 billion... the highest level on record.

—Larry Fink, Chair and CEO of Blackrock (2015)

## 1 Introduction

A fierce debate has been raging over whether shareholder-driven “short-termism” (or “quarterly capitalism”) is a critical problem for U.S. public firms, their investors, and the nation’s economy. Academics (Bratton and Wachter, 2010; Coffee and Palia, 2015), corporate lawyers (Lipton, 2015), Delaware judges (Strine, 2010), and think tanks (Aspen Institute, 2009) contend that quarterly capitalism, exacerbated by the growing power of hedge funds, is substantially impairing firms’ ability to invest and innovate for the long term. Pushing back against this view, a number of academics have forcefully argued that hedge funds play a useful role in the market ecosystem (Bebchuk and Jackson, 2012; Gilson and Gordon, 2013; Kahan and Rock, 2007) and that concerns over short-termism are greatly exaggerated (Bebchuk, 2013; Roe, 2013; Kaplan, 2017; Roe, 2018).

The empirical evidence on shareholder activism and short-termism is, in fact, mixed. Market pressures can lead executives to act in ways that boost the short-term stock price at the expense of long-term value (Bushee, 1998; Dichev et al., 2013; Graham et al., 2006) and may undesirably reduce investment at public firms (Asker et al., 2015). But these costs must be weighed against the potential reduction in agency costs created by greater director accountability to shareholders. One prominent study finds evidence of such benefits, reporting that shareholder activism increases the stock price at targeted firms in both the short term and the long term (Bebchuk et al., 2015). Subsequent work, however, seeks to challenge these findings (Cremers et al., 2016).

Measuring the costs and benefits of shareholder activism and the resulting increased director accountability to shareholders is extremely difficult. The biggest challenge: these costs and benefits impact any firm that *might* be targeted by activist shareholders, not just those that are *actually* targeted.<sup>1</sup> In short, the search for more and better evidence about short-termism is likely to go on for some time.

As the debate over short-termism continues to intensify, market participants and policymakers have increasingly focused on what is seen as a major market-wide symptom of activism-induced short-termism: the distribution of large amounts of cash to shareholders through share repurchases and dividends. Much of the focus on shareholder payouts is due to the work of economist William Lazonick, who has repeatedly and forcefully argued that these shareholder payouts—and buybacks

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<sup>1</sup>For example, activists frequently demand that firms distribute more cash to shareholders through dividends and buybacks. Directors of Firm A may successfully avoid an activist intervention by distributing more cash to shareholders. Distributing the cash may be value-increasing or value-decreasing, depending on the projects (if any) that Firm A forgoes as a result. But Firm A will not show up in a dataset of firms targeted by activists, and thus the effect of its response to potential shareholder activism will go unmeasured.

in particular—impair firms’ ability to invest, innovate, and provide good wages. In the introduction to his most well-known work, an influential 2014 *Harvard Business Review* article entitled “Profits Without Prosperity,” Lazonick set out his main claim:

“Corporate profitability is not translating into widespread economic prosperity. The allocation of corporate profits to stock buy-backs deserves much of the blame. Consider the 449 companies in the S&P 500 index that were publicly listed from 2003 through 2012. During that period those companies used 54% of their net income—a total of \$2.4 trillion—to buy back their own stock, almost all through purchases on the open market. Dividends absorbed an additional 37% of their net income. That left very little for investments in productive capabilities or higher incomes for employees.” (Lazonick, 2014)

Since the publication of “Profits Without Prosperity,” Lazonick’s findings and similar shareholder-payout figures have been cited by economists at the Brookings Institution (Galston and Kamareck, 2015), prominent asset managers (Fink, 2015), leading corporate lawyers (Lipton, 2015), and senior politicians and policymakers (Baldwin, 2015; Stein, 2015; Biden, 2016) as evidence that short-term pressures generated by activist shareholders are depriving firms of the capital they need to invest for the long term and pay adequate wages. Financial economists (Kahle and Stulz, 2016) have also pointed to the magnitude of shareholder payouts as a percentage of net income as evidence for concern about US public firms’ opportunities (or incentives) to invest.

Do these shareholder payout figures actually provide definitive evidence—or, indeed, *any* evidence—of harmful short-termism? In short, the answer is no. S&P 500 shareholder payouts provide an incomplete and distorted picture of corporate capital flows and their impact on firms’ investment capacities, for three main reasons.

First, with respect to any set of public firms (including the S&P 500), shareholder payouts tell only half the story of capital movements between the firms and their shareholders. In particular, they fail to account for direct and indirect equity capital inflows through share issuances. U.S. firms issue considerable amounts of common stock to raise cash, pay employees, and acquire assets. We put forward and then implement a methodology for estimating *net* shareholder payouts (shareholder payouts, less equity issuances) in S&P 500 firms, which takes into account not only direct (i.e., cash-raising) but also indirect (e.g., employee-paying) equity issuances, which in fact constitute the majority of these firms’ total equity issuances. Using our measurement method, we find that there is a massive wedge between shareholder-payout figures (that are cited as evidence of short-termism) and net shareholder payouts (that measure actual capital movement between firms and shareholders). For example, during the period 2007-2016, S&P 500 firms distributed to shareholders more than \$4.2 trillion through stock buybacks and \$2.8 trillion through dividends.<sup>2</sup> These cash outflows, which totaled \$7 trillion, represented 96% of these firms’ net income during this period. But during this same period, S&P 500 firms absorbed, directly or indirectly, \$3.3 trillion of equity

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<sup>2</sup>Throughout this paper, we focus on the decade 2007-2016 so as to provide the most recent data. While most of the commentary on shareholder payouts has focused on 2014 and prior years, the data for 2005-2014 are very similar to the data for 2007-2016.

capital from shareholders through share issuances. After taking into account equity issuances, our estimates show that net shareholder payouts from S&P 500 firms during the years 2007-2016 were only about \$3.7 trillion, or 50% of these firms' net income over this period.

Second, a focus on S&P 500 firms—which generally have fewer growth opportunities than smaller and younger firms—creates a misleading picture of net shareholder payouts in the public markets as a whole. We show that while S&P 500 firms are net *exporters* of equity capital, public firms outside of the S&P 500 are net *importers* of equity capital. During the period 2007-2016, they absorbed \$406.8 billion of equity capital, or about 11% of the net shareholder payouts of S&P 500 companies. Across *all* public firms, net shareholder payouts during the years 2007-2016 were only \$3.3 trillion, about 41% of the net income of public firms over this period.

Third, the focus on shareholder payouts as a percentage of net income is highly misleading; it wrongly implies that “net income” reflects the totality of a firm's resources that are generated from its business operations and are available for investment. In fact, net income is calculated by subtracting the many costs associated with future-oriented activities that can be expensed (such as R&D). These amounts are substantial. Firm spending on R&D is, on average, equal to about 25-30% of net income. In other words, much of the resources generated by a firm's business operations have already been used for long-term investment before net income is calculated. Indeed, a firm that spends more on R&D will, everything else equal, have a *lower* net income and a *higher* shareholder-payout ratio. At most, net income indicates the additional resources generated by a firm's business operations that are available for (a) investment activities whose cost must be capitalized rather than expensed and (b) *additional* R&D and other activities whose costs are expensed. Across all public firms, net shareholder payouts constituted only about 33% of R&D-adjusted net income

Our analysis indicates that public firms have, even after making apparently large shareholder payouts, generated considerable amount of investment capacity over the last decade: about \$6.6 trillion for all public firms. We provide data showing that this capacity was used for investment in R&D and CAPEX, which together have been rising over the last 10 years, as well as to build up about \$4.3 trillion in cash balances.

Looking beyond the public-firm data, offer two other observations about why shareholder payouts by public firms are unlikely to pose a problem for the U.S. economy. First, actual net shareholder payout data understates investment capacity because a public firm that needs more equity capital can simply issue more shares; there is no limit on additional equity issuances, as long as the firms secures any needed shareholder approval. Second, net shareholder payouts are not wasted from an investment or innovation perspective. Much of the net shareholder payouts by public firms provide capital for investment in private firms, including those backed by private equity and venture capital funds, that employ most of the nation's workforce and are responsible for a considerable amount of innovation and dynamism in our economy.

To be sure, we cannot rule out the possibility that short-termist pressures are causing some public firms to distribute too much cash to shareholders (or are generating other costs unrelated to capital flows). However, a close look at the data reveals that there is little reason to believe that

short-termism is, as is commonly believed, systematically stripping firms of the capital needed to invest, innovate, and pay higher wages, or causing harm to our economy as a whole.

Our work contributes to the academic and public debates over the magnitude of short-termism and its potential effects on public firms' investment capacity. The evidence and analysis we put forward suggests there is little empirical support for the hypothesis that short-term pressures have resulted in firms' excessive distribution of capital and undermined long-term investment. We also contribute to the corporate finance literature by illustrating the need to consider both direct (i.e., cash-raising) and indirect (i.e., employee-paying and acquisition-financing) equity issuances when computing the net capital flows between a public firm and its shareholders. In particular, we provide the first estimates on the relative importance of indirect issuances as a source of equity capital for public firms.

The remainder of this paper proceeds as follows. [Section 2](#) focuses on shareholder payouts from public firms: dividends plus repurchases. It shows that S&P 500 shareholder payouts are indeed extremely high as a fraction of firms' net income.

[Section 3](#) turns to equity issuances. It explains that, by dollar volume, equity issuances fall into one of three categories: cash-raising, acquisition-financing, and employee-paying. It also explains that any equity issuance, even an issuance in which the firm receives no cash, is functionally equivalent to a firm issuing stock to shareholders for cash, and then using that cash for various purposes (such as paying employees). Thus, equity issuances of any kind must be taken into account to understand how capital actually flows between public firms and shareholders.

[Section 4](#) re-examines equity capital flows between shareholders and S&P 500 firms, taking into account equity issuances.

[Section 5](#) considers net shareholder payouts for all public companies, both those in the S&P 500 and those outside of that index.

[Section 6](#) explains that net income is a poor measure of the amount available for investment as it excludes R&D expenses and other future-related expenditures that were actually incurred and subtracted from income before net income is determined. Using the better measure of R&D-adjusted net income (net income plus R&D expenses, net of tax effects), it determines how much firms actually had to invest after net shareholder payouts. It also provides data showing that actual investment rose during 2007-2016 and that cash balances increased substantially, giving firms ample resources for additional investment.

[Section 7](#) looks beyond the public-firm data to offer additional reasons why the amount of shareholder payouts by public firms is unlikely to harm the economy. A brief conclusion follows.

## 2 Shareholder Payouts: Dividends and Share Repurchases

Executives of publicly traded U.S. firms must continually decide how much cash to distribute to shareholders, through either dividends or share repurchases.<sup>3</sup> Dividends come in two flavors: “regular” (recurring payouts, e.g., \$0.25 per share every quarter) and “special” (one-off, usually large payouts) (DeAngelo et al., 2000). Like dividends, repurchases typically take one of two forms. The first is a “repurchase tender offer” (RTO), in which the firm offers to buy back its own stock directly from shareholders, usually at a premium over the market price (D’mello and Shroff, 2000; Fried, 2000). The second is an “open market repurchase” (OMR), in which the firm (or a bank acting on its behalf) purchases the firm’s shares in the open market (Fried, 2005; Stephens and Weisbach, 1998).

For a variety of reasons, executives often have an incentive to use repurchases rather than dividends to distribute cash and, when repurchasing shares, to use OMRs rather than RTOs (Fried, 2005).<sup>4</sup> By the early 2000s, in most years more cash was distributed through repurchases than through dividends; in fact, in some years the amount of cash distributed through repurchases was twice the amount distributed through dividends (Farre-Mensa et al., 2015). The overwhelming majority of these repurchases (by number and by dollar volume) have taken the form of OMRs (Banyi et al., 2008).

Fig. 1 depicts the time series of the dollar amounts of shareholder payouts—the sum of dividends and repurchases—by S&P 500 firms during the period 2007-2016. We estimate annual shareholder payouts using Compustat data. For dividends, we use data on dividends to common shares (i.e., Compustat variable *divc*). For repurchases, following Boudoukh et al. (2007), we use Compustat data on the dollar amounts spent to repurchase common and preferred shares (*prstk*) and remove the effect of preferred shares by deducting the decrease in the redemption value of preferred shares (*pstkrv*).<sup>5</sup>

Fig. 1 shows that during the period 2007-2016 S&P 500 firms distributed \$7 trillion of cash back to shareholders: \$4.2 trillion through repurchases and \$2.8 trillion through dividends. Three of the top cash-distributing firms over the period were ExxonMobil, Microsoft, and IBM, whose shareholder payouts over the decade totalled \$276 billion, \$188 billion, and \$151 billion, respectively.

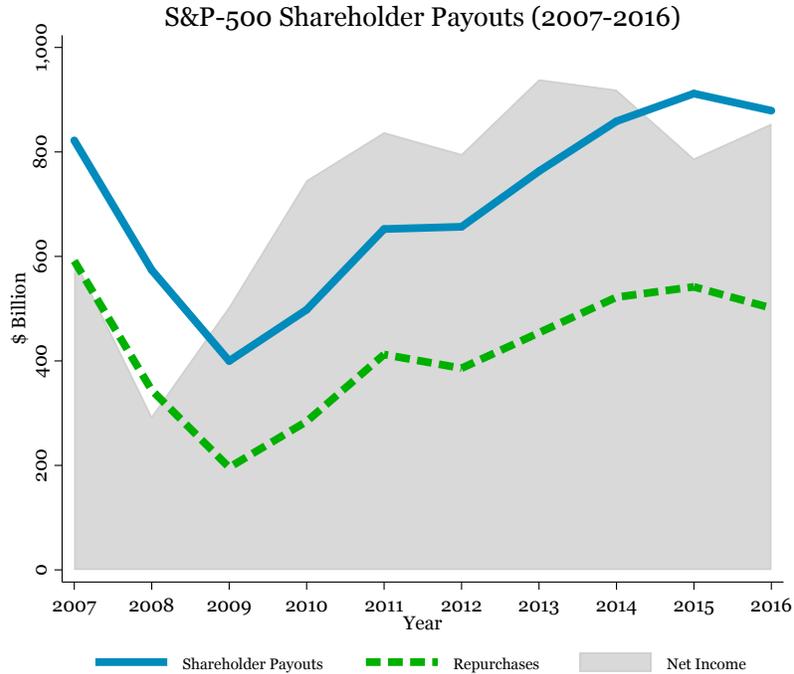
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<sup>3</sup>A share repurchase is equivalent to a three-step transaction in which (1) non-selling shareholders buy the shares of selling shareholders directly at the repurchase price, (2) the firm issues a dividend equal to the amount of the repurchase, and (3) the firm effects a reverse stock split (Fried, 2005). Because the third step has no economic significance, a repurchase is economically equivalent to a shareholder-level trade followed by a dividend to the remaining shareholders.

<sup>4</sup>Unfortunately, one of the reasons why executives have an incentive to use OMRs rather than dividends is that they tend to transfer value from public investors to executives, and do so in ways that might shrink the economic pie (Fried, 2005, 2014). These harmful effects are exacerbated by the SEC’s relatively lax disclosure requirement for repurchases (Fried, 2005, 2014), and the costs associated with repurchases would be substantially reduced by having firms disclose trading in their own shares within one or two days, as they are required to do in the U.K., Hong Kong, and elsewhere (Fried, 2014). This two-day disclosure proposal had been incorporated into Hillary Clinton’s economic platform (Clinton, 2015). Here, however, we abstract from the desirability of buybacks and how they should be regulated, and treat a dollar distributed by a dividend the same as a dollar distributed by a repurchase.

<sup>5</sup>While there is a Compustat measure for the purchase of common shares, it is not as consistently recorded as the measure for the purchase of common and preferred shares.

Figure 1: S&P 500 Shareholder Payouts (2007-2016)

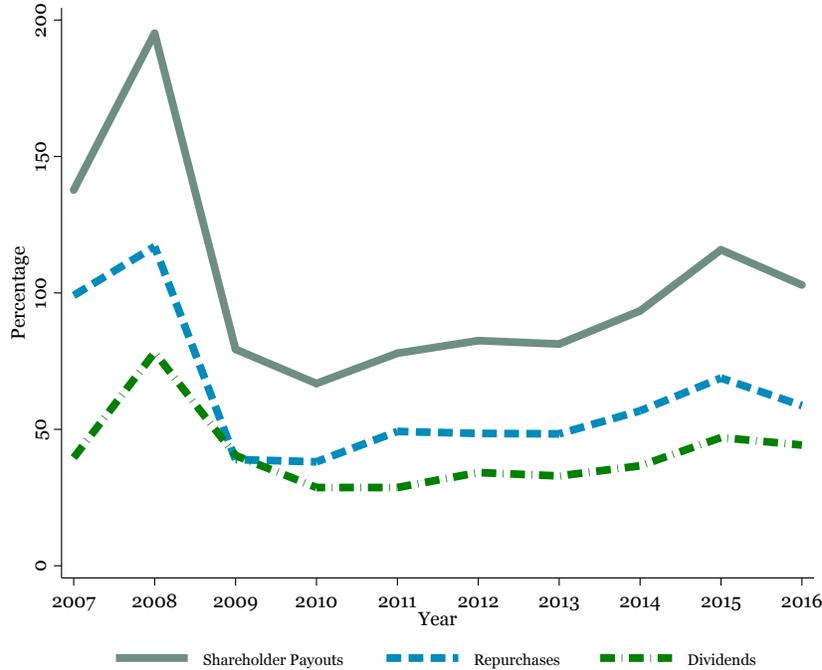


Repurchases of and dividends to common shares are from Compustat. Following [Boudoukh et al. \(2007\)](#), we define repurchases as the purchase of common and preferred shares less any decrease in the value of preferred stock. Market capitalization is the total, year-end market value computed using monthly CRSP data with share and price adjustments.

Over the last few years, the volume of dividends and repurchases has raised concerns that short-termist companies are “eating themselves” and underinvesting for the long term. Economist William Lazonick was one of the first to argue that these shareholder payouts—which are substantial relative to firms’ net income—impair firms’ ability to invest, innovate, and provide good wages ([Lazonick and O’Sullivan, 2000](#)).

Indeed, shareholder payouts represent a substantial percentage of firm net income. Fig. 2 shows that, among the S&P 500 firms, annual total shareholder payouts averaged 103% of annual total net income during the period 2007-2016 (with a median of 93%). These firms distributed more than 80% of their aggregate net income through shareholder payouts in 7 of the 10 years during the 2007-2016 period. During this decade, 96% of cumulative net income was distributed to shareholders through dividends and repurchases.

**Figure 2: S&P 500 Shareholder Payouts as a Percentage of Net Income (2007-2016)**



Repurchases of and dividends to common shares are from Compustat. Following [Boudoukh et al. \(2007\)](#), we define repurchases as the purchase of common and preferred shares less any decrease in the value of preferred stock. Market capitalization is the total, year-end market value computed using monthly CRSP data with share and price adjustments. Net Income is from Compustat variable *ni*.

### 3 The Need to Account for Direct and Indirect Equity Issuances

The problem with using only share repurchases and dividends to capture capital flows between firms and shareholders is that it reflects a flawed assumption: that capital only moves *from* the corporations *to* shareholders. But firms issue considerable amounts of shares to shareholders, even when they are buying back shares. Equity capital thus flows both ways. To understand net shareholder payouts to shareholders, one must take into account not only dividends and share buybacks but also equity issuances.

Firms that have conducted an initial public offering (IPO) subsequently issue (common) shares through a variety of transactions, including: (1) seasoned equity offerings (SEOs), (2) private placements, (3) rights offerings, (4) the conversion of convertible securities (debt and preferred stock), (5) warrant exercises, (6) acquisition transactions, (7) dividend reinvestment and direct purchase plans, and (8) employee stock grants and the exercise of employee stock options grants.

Measuring cash flows from these equity issuances is tricky. Financial economists wishing to measure cash flows from shareholders to firms via equity issuances often limit their attention to the amount of cash that firms directly receive from equity issuances, and try to exclude the dollar value of equity issuances in which cash does not flow directly to the firm (such as restricted stock issued to employees) (e.g., [McKeon, 2015](#); [Banyi et al., 2008](#); [Boudoukh et al., 2007](#); [Lee et al., 2016](#); [Gutiérrez and Philippon, 2018](#)). However, as we explain in more detail below, any equity issuance, including one in which the firm does not directly receive cash, is economically equivalent to a two-part transaction in which the firm (1) sells shares for cash to public investors (a “cash-raising issuance”) and (2) uses that cash for a particular purpose (such as funding internal investment, compensating employees, paying off debt, or acquiring assets). Thus, any equity issuance effectively moves capital from public investors to the firm, offsetting the capital-moving effects of repurchases and dividends. The dollar value of that equity issuance must, accordingly, be taken into account in determining net shareholder payouts.

To illustrate the economic equivalence of all equity issuances, we describe the three types of equity issuances that account for the overwhelming majority of shares issued by public companies: (1) cash-raising ([Section 3.1](#)), (2) employee-paying ([Section 3.2](#)) and (3) acquisition-financing ([Section 3.3](#)). Employee-paying issuances are the most important, accounting for almost 50% of equity issuances by public companies, followed by cash-raising (which account for about 33%). But we start with cash-raising issuances, as they are the simplest.

### 3.1 Cash-Raising Issuances

After going public through an IPO, companies often continue to issue equity to public investors to raise cash for operations or other business needs. In such cash-raising equity issuances, it is particularly easy to see how equity capital flows from public investors to the firm. We calculate that, during the decade 2007-2016, public firms raised about \$1.6 trillion via cash-raising issuances, accounting for about one-third of total issuances by public firms during this period.

Cash-raising issuances take the form of seasoned equity offerings (“SEOs”), rights offerings, private placements, dividend reinvestment plans, and direct purchase plans. More cash is raised by SEOs than any other type of cash-raising issuance ([Fama and French, 2005](#)) and, perhaps, than all other types of cash-raising issuances combined.<sup>6</sup>

Traditionally, SEOs have been “firm commitments”: the firm arranges to sell a specified number of shares at a fixed price through an underwriter that guarantees to sell the shares at that price and then offers the shares to investors ([Eckbo et al., 2007](#)). During the period 2008-2015, there were approximately 3,200 firm-commitment SEOs by U.S. firms, raising about \$1 trillion ([Billett et al., 2015](#)).

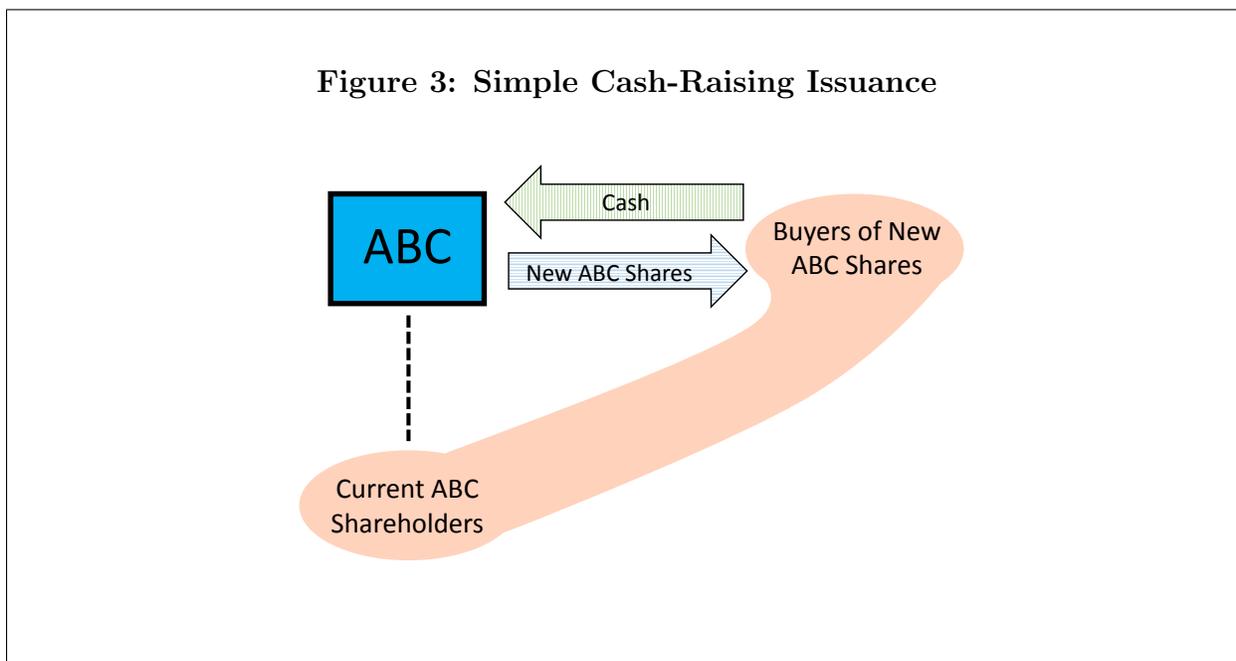
Over the last decade, firms have increasingly been using “at-the-market” issuances (ATMs) instead of firm-commitment SEOs. In an ATM, the firm sells shares directly (and quietly) on the

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<sup>6</sup>Unfortunately, the SEC does not require firms to clearly disclose the details of equity issuances. Thus, it is difficult to determine precisely how much equity is issued via any given mechanism.

market through a sales agent (Billett et al., 2015; Small et al., 2009). Firms are not required by the SEC to announce ATM transactions as they take place; investors will not learn of a sale until months afterwards (Fried, 2014).<sup>7</sup> The dollar volume of ATMs is now approximately 40% of the dollar volume of firm-commitment SEOs (Billett et al., 2015). Together, firm-commitment SEOs and ATMs appear to generate considerable amount of cash for public companies.<sup>8</sup>

Figure 3 illustrates a cash-raising issuance. ABC Corporation issues shares to buyers in exchange for cash. As we will see below, all other types of equity issuance (employee-paying and acquisition-financing) take different and more complex forms but are functionally equivalent to the cash-raising issuance depicted in Figure 3.



### 3.2 Employee-Paying Issuances

The second main type of equity issuances are those issuances connected to employee compensation. Employees are frequently given restricted shares or stock options, both of which are typically subject to vesting requirements. When restricted stock vests, employees may sell the stock on the market. When options vest, employees can exercise the options by paying the option strike price to the firm; the stock received via exercise of the option can then be sold on the market. In other work (Fried, Ma, and Wang, 2018), we use data from Equilar to estimate that during 2007-2016

<sup>7</sup>One of us has suggested that firms be required to disclose ATM issuances (as well as OMR transactions) within one or two days (Fried, 2014).

<sup>8</sup>McLean (2011) finds that the cash generated by issuances exceeds that generated internally through operations, and is about 60% of the cash generated by debt issuances. However, this amount would include not only the proceeds of cash-raising issuances, but also cash inflows from direct purchases by employees of stock at a discounted price, as well as proceeds of employee option exercises (McKeon, 2015), both of which we discuss below.



sells the shares to public investors. On the right-hand panel ([Panel 4B](#)), ABC conducts a cash-raising issuance, then uses the cash to pay Employee. At the end of both transactions, ABC's cash position is identical, Employee has the same amount of cash in her pocket, and public investors have acquired new ABC shares for cash.

Recall the concern that repurchases give shareholders capital while leaving “very little for... higher incomes for employees” ([Lazonick, 2014](#)). However, one of the most important reasons firms repurchase stock is to acquire shares to pay employees ([Kahle, 2002](#); [Bens et al., 2003](#)).<sup>11</sup> For such compensation-driven repurchases, the cash that flows out to public shareholders in the repurchase leg of the transaction finds its way to employees when they get the repurchased shares and sell them back to public shareholders. When commentators focus solely on the first leg of this transaction (the repurchase of shares from public investors), and ignore the second leg (the sale of the repurchased shares by employees to shareholders), they see cash move *from the corporation to shareholders*, potentially compromising the firm's ability to pay employees higher wages. In fact, the effect of these two legs of the transaction, taken together, is to move cash *from the corporation to employees*. And, like any type of compensation paid by the firm, the cost of this compensation is borne indirectly by the firm's shareholders, reducing their returns. Thus, when repurchases and equity issuances are used to provide stock-based compensation, a blinkered view that includes repurchases but excludes equity issuances can lead observers to erroneously conclude that value is moving from employees to shareholders when, in fact, the movement of value is in the opposite direction.

### 3.3 Acquisition-Financing Issuances

Public companies frequently use cash to acquire the shares (and, indirectly, the assets) of target companies, both public and private.<sup>12</sup> However, an acquirer can use its own equity in lieu of cash for such an acquisition ([Fama and French, 2005](#)). In a sample of approximately 5,000 M&A transactions during the period 1980-2008 that involved a U.S. domiciled target and a U.S. domiciled publicly traded bidder, 31% of the acquisitions were financed entirely by the issuance of acquirer stock and 40% were financed by a mix of cash and stock ([Eckbo et al., 2016](#)). We estimate that during 2017-2016 public firms used approximately \$1 trillion of their equity (approximately 23% of their total issuances) to acquire other firms, and about 20% of these acquisition-financing issuances were used to acquire other public firms.

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<sup>11</sup>Repurchases are not necessary to provide shares for employee stock compensation arrangements. In principle, a firm could use only newly issued shares to pay employees and, when it reaches the share-authorization limit in its corporate charter, seek shareholder approval to increase that limit ([Fried, 2005](#)). However, for a variety of reasons, firms will often use repurchases to acquire at least some of the shares given to employees.

<sup>12</sup>In some cases, target assets are purchased directly by the acquirer from the target.

Figure 5: Acquisition-Financing Issuance

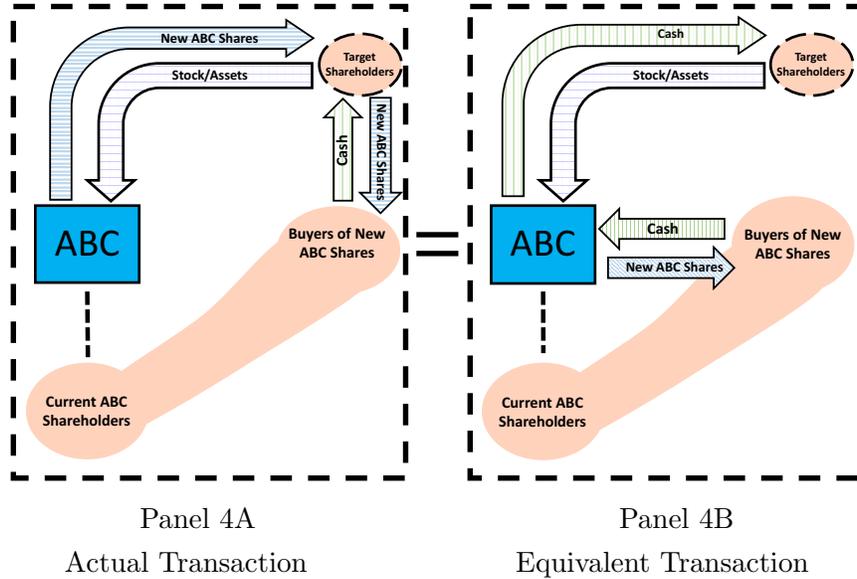


Figure 5 illustrates how an acquisition-financing issuance is economically equivalent to (1) a cash-raising issuance followed by (2) the use of that cash to acquire the stock (and, indirectly, assets) of the target firm. On the left-hand panel (Panel 4A) is the actual acquisition-financing issuance: ABC issues its own shares to Target shareholders in exchange for Target stock (and, indirectly, Target assets). Target shareholders then sell their new ABC shares for cash to Buyers of new ABC Shares.<sup>13</sup> On the right-hand panel (Panel 4B), ABC conducts a cash-raising issuance, then uses the cash to acquire Target stock (and, indirectly, Target assets) from Target shareholders. At the end of both sets of transactions (those in Panel 4A and those in Panel 4B), ABC is in the same position: it owns Target assets, holds the same amount of cash, and has more shares outstanding.

Equity issuances used for acquisitions might appear different from cash-raising and employee-paying issuances, as they do not necessarily involve the movement of any cash, directly or indirectly, from shareholders to corporations. Rather, they could merely change the “tickets” held by shareholders. If so, one might claim, they do not offset capital outflows from public corporations arising from dividends and repurchases.

To put this claim in its best possible light, suppose that ABC and Target are both publicly traded firms, and their shareholders are identical. When ABC acquires Target for ABC shares, ABC shareholders surrender their Target shares and receive additional ABC shares. If this acquisition were reconceptualized as a cash-raising issuance by ABC followed by ABC’s use of the cash to acquire Target stock, ABC shareholders would contribute cash to ABC but then receive every

<sup>13</sup>Target shareholders could retain their new ABC shares, in which case they would be considered Buyers of New ABC Shares who have bought these shares, but with assets rather than with cash.

dollar back when surrendering their Target shares. And they would end up indirectly owning the same ABC and Target assets as before. It would appear that nothing has changed.

However, this claim would be mistaken. From the perspective of ABC and its shareholders, ABC's acquisition of Target does shift capital from ABC's shareholders to ABC. To see why, observe that there is no difference among the following three transactions: (1) ABC shareholders pay \$100 in cash for additional ABC shares; (2) ABC shareholders contribute \$100 in assets for additional ABC shares; and (3) ABC shareholders exchange additional ABC shares for shares in a corporation (e.g., Target) that holds \$100 in assets. Each of these transactions moves \$100 in capital from ABC shareholders to ABC. It should not make any difference what form this capital takes.<sup>14</sup>

## 4 Net Shareholder Payouts of the S&P 500 (2007-2016)

Having explained that any equity issuance is economically equivalent to the firm (1) issuing equity to public investors for cash and (2) then using the proceeds for various purposes (such as paying employees), we now take into account equity issuances to determine net shareholder payouts from S&P 500 firms. As [Section 2](#) reported, shareholder payouts (dividends plus repurchases) from S&P 500 firms for the decade 2007-2016 were \$7 trillion. As this Section explains, direct and indirect equity issuances for these firms during this period totalled approximately \$3.3 trillion. Taking into account these equity issuances, S&P 500 net shareholder payouts for the same period are thus only about \$3.7 trillion.

### 4.1 Methodology and Data

We define net shareholder payouts for a publicly traded firm as

$$\begin{aligned}\text{Net Shareholder Payouts} &= \text{Dividends} + \text{Equity Repurchases} - \text{Equity Issuances} \\ &= \text{Dividends} - \text{Net Equity Issuances}\end{aligned}\tag{1}$$

where net equity issuances is defined as the dollar amount of direct and indirect share issuances minus the dollar amount of share repurchases.

We compute both dividends and net equity issuances on a monthly basis using CRSP. Monthly dividends paid by a firm is estimated using the available fields in the monthly stock file as follows:

$$\text{Dividends}_t = \text{Dividend Yield}_t \times \text{Stock Price}_{t-1} \times \text{Shares Outstanding}_t,\tag{2}$$

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<sup>14</sup>Another possible issue with the use of acquisition-financing issuances is that they make it difficult to track the amount of capital flowing between public shareholders in aggregate and public firms in aggregate. We address this issue in the methodology section.

where  $t$  is an index for time, incrementing by month. Dividend yield is given by the difference between a stock’s monthly total return (the CRSP field  $ret$ ) and a stock’s return from capital gains (the CRSP field  $retx$ ). To make prices and shares outstanding comparable over time, we follow the standard practice of adjusting them using CRSP’s cumulative adjustment factors.<sup>15</sup> We note that the dividend estimates obtained using this method are consistent with the numbers reported by Compustat. For example, among S&P 500 firms during the period 2007-2016, the average aggregate annual dividend paid estimated using CRSP is \$273 billion and \$279 billion using Compustat; moreover, the aggregate annual dividends paid over this period estimated using the two approaches are 99% correlated. The CRSP approach allows us to compute dividends at monthly frequencies and over standardized time horizons (e.g., over a calendar year) across firms; Compustat reports information only by fiscal year, which is not uniformly defined.

Net equity issued by a firm is estimated using the available fields in the monthly and daily stock file from CRSP as follows:

$$\text{Net Equity Issuances}_t = (\text{Shares Outstanding}_t - \text{Shares Outstanding}_{t-1}) \times \text{Average Stock Price}_t. \quad (3)$$

This method for estimating the dollar volume of net equity issuances—which combines the net change in shares outstanding with a measure of the stock price—can be called the “share-count” method. It is similar to the methodology used in the asset-pricing literature to study the correlation between net shareholder payouts (or net equity issuances) and future stock prices (Boudoukh et al., 2007; Welch and Goyal, 2008). The main difference in our methodology is the assumed price at which the net equity issuance occurs. Whereas Boudoukh et al. (2007) uses the average of the beginning and end-of-month prices and Welch and Goyal (2008) uses end of month prices, our approach uses the average of daily prices over the calendar month.<sup>16</sup> Because repurchases and equity issuances take place throughout the entire month, the average daily price is likely to better reflect the price at which these transactions take place than a measure using price information from only one or two days during the month.

The share-count method is more appropriate than relying on realized cash flows from direct equity issuances and repurchases (e.g., Lee et al., 2016), because the latter does not take into account the effect of *indirect* equity issuances. As we explained above, indirect equity issuances have become a significant source of capital for firms: 50% of total equity issued by public companies over the 2007-2016 decade are in connection with equity pay plans. Ignoring these transactions, therefore, can paint a misleading picture of the capital flows between public firms and their shareholders.

Finally, our share-count approach can be expected to *over*-estimate net shareholder payouts. In particular, our approach assumes that equity issuances and repurchases that take place within the same calendar month occur at the same prices (i.e., the average closing daily stock price). In fact, repurchases generally take place at below-average prices (e.g., Simkovic, 2009) and equity issuances

<sup>15</sup>Shares outstanding is computed as  $shrout_t \times cfacshr_t$ , and lagged stock price is given by  $\frac{prc_{t-1}}{cfacpr_{t-1}}$ .

<sup>16</sup>Again, to make shares outstanding comparable over time, we follow the standard practice of adjusting them using CRSP’s cumulative adjustment factors.

generally place at above-average prices (e.g., [Baker and Wurgler, 2002](#)). Thus our approach will under-estimate the dollar volume of net equity issuances, leading to an upward bias in net shareholder payouts. Accordingly, actual net shareholder payouts are likely to be even lower than the ones we report; our estimates are therefore conservative.

Our empirical analysis focuses on public firms that have data in both CRSP and Compustat over a given calendar year (i.e., 12 months of returns and an annual financial report) during the period 2007–2016. Thus, for any firm entering the public market (through an IPO) or exiting the public market (through a going-private transaction, bankruptcy, or other delisting), we exclude equity-capital flows in the calendar year of such entrance or exit event. We include only observations with CRSP share code of 10 or 11 (i.e., we do not include certificates, ADRs, shares of beneficial of interest, units, companies incorporated outside the United States, Americus Trust components, closed-end funds, and REITs). Finally, we perform our analyses on those firms in and outside the S&P 500 sample, where S&P 500 membership identification comes from Compustat. To be included in our S&P 500 sample in a calendar year, a firm must be a member of the index at the fiscal-period end occurring in that calendar year.

Our methodology might generate results that are higher or lower than net shareholder payouts from public firms (in the aggregate) to public shareholders (in the aggregate) via the public markets in any given year. We ignore capital inflows from the IPO of a firm’s shares (and secondary offerings that same year) and ignore firm-shareholder capital movement in the year a firm exits the market, as the source of terminating payouts to shareholders is often difficult to trace and some shareholders of publicly-traded shares continue to own shares after exit (e.g., a controlling shareholder in a go-private transaction).

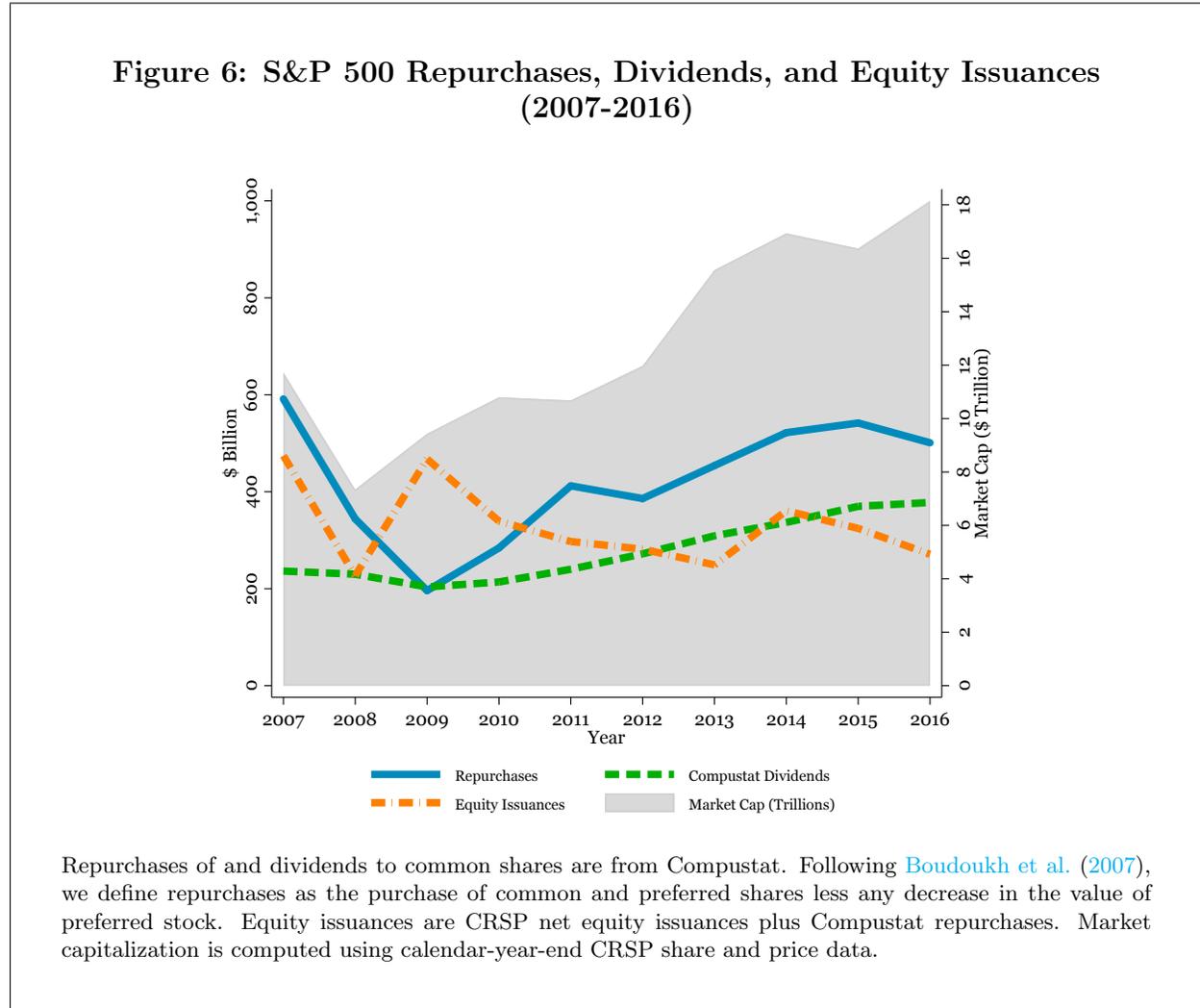
We also ignore payments from one public firm to the shareholders of another. We thus ignore the cash paid by one public firm to acquire the shares of another public firm, and treat equity issued by a public firm to acquire another public firm as a capital inflow to the acquiring firm. The picture would not change materially if such cross-firm capital flows were taken into account. For example, using M&A transaction data obtained from the SDC, we estimate that during 2007-2016 public firms spent only \$175 billion in cash to acquire the shares of other firms (vs. over \$7 trillion spent on dividends and share repurchases that flowed to their own shareholders) and used only 4% of their issuances to acquire shares of other public firms.

In any event, both because of the practical difficulties of tracking capital flows as firms and shareholders cross the public/private boundary, and our desire to align our methodology with the prior literature (e.g., [Lazonick \(2014\)](#)), we limit our sample to firms that remain in the public market for the entire calendar year.

## 4.2 Dollar Volume of Equity Issuances

We first report the annual dollar volume of equity issuances by S&P 500 firms during the decade 2007-2016. We obtain yearly issuance volume by adding repurchases (from Compustat) to

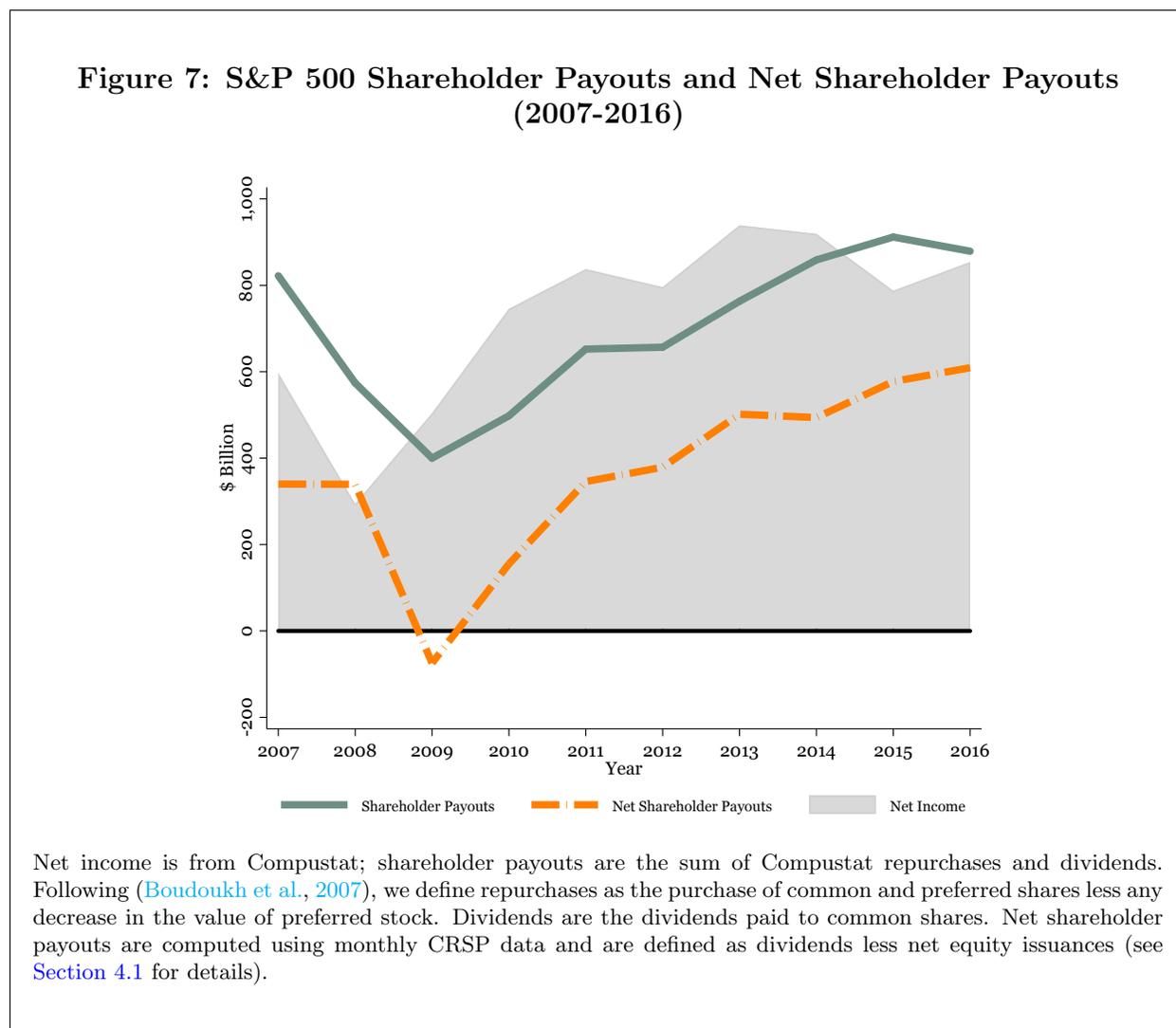
net equity issuances (estimated from CRSP via equation 3). Figure 6 shows issuance volumes for each year during the decade 2007-2016, alongside repurchases and dividends. The dollar volume of equity issuances was in fact higher than the dollar volume of repurchases in 2009 and 2010. Over the entire decade, the total volume of equity issuances totaled about \$3.35 trillion, 21% less than the \$4.2 trillion in repurchases over the same period.



### 4.3 Shareholder Payouts and Net Shareholder Payouts

Because the dollar volume of equity issuances is so large, net shareholder payouts are much lower than shareholder payouts. Figure 7 shows annual shareholder payouts and net shareholder payouts in S&P 500 firms during the decade 2007-2016, against a backdrop of net income. Net shareholder payouts in the S&P 500 are on average 48% of shareholder payouts, and in one year (2009) were negative: public equity investors provided public S&P 500 with more capital than

they took out. Over the 2007-2016 period, cumulative net shareholder payouts were approximately 52.3% of cumulative shareholder payouts.



Among the three firms with the highest shareholder payouts, net shareholder payouts are substantially lower than shareholder payouts. For ExxonMobil, net shareholder payouts during the period 2007-2016 are 12% lower than shareholder payouts (\$244 billion vs. \$276 billion). For Microsoft, they are 26% lower (\$139 billion rather than \$188 billion). And for IBM, they are 21% lower (\$119 billion instead of \$151 billion).

## 5 Net Shareholder Payouts from All Public Firms (2007-2016)

In Section 4, we focused on the first problem with using shareholder payouts (dividends and repurchases) by S&P 500 firms as a measure of capital flows between public firms and their share-

holders: these payout figures fail to take into account offsetting equity issuances, both direct and indirect. Taking into account equity issuances, net shareholder payouts by S&P 500 firms during the decade 2007-2016 are substantially smaller.

We now turn to consider the second problem with this measurement: S&P 500 firms, as larger and more mature firms, are not representative of public firms in the aggregate. For example, the average age of S&P 500 firms over our sample period is slightly over 31 years; the average age of non-S&P 500 public firms is 12 years.<sup>17</sup> We would expect older, more mature firms to distribute more capital to shareholders than younger, faster growing firms. In fact, that is what we find. Non-S&P 500 firms are actually net importers of equity capital, absorbing much of the net shareholder payouts of S&P 500 firms. Looking across all public firms, both those in the S&P 500 and those outside of it, net shareholder payouts to public shareholders are significantly smaller, in absolute terms and as a percentage of net income, than net shareholder payouts from S&P 500 firms. We first look at non-S&P 500 firms during the period 2007-2016, and then integrate these firms with the S&P 500 firms to provide a complete picture of public firms and their shareholders in the aggregate.

### 5.1 Non-S&P 500 Firms (2007-2016)

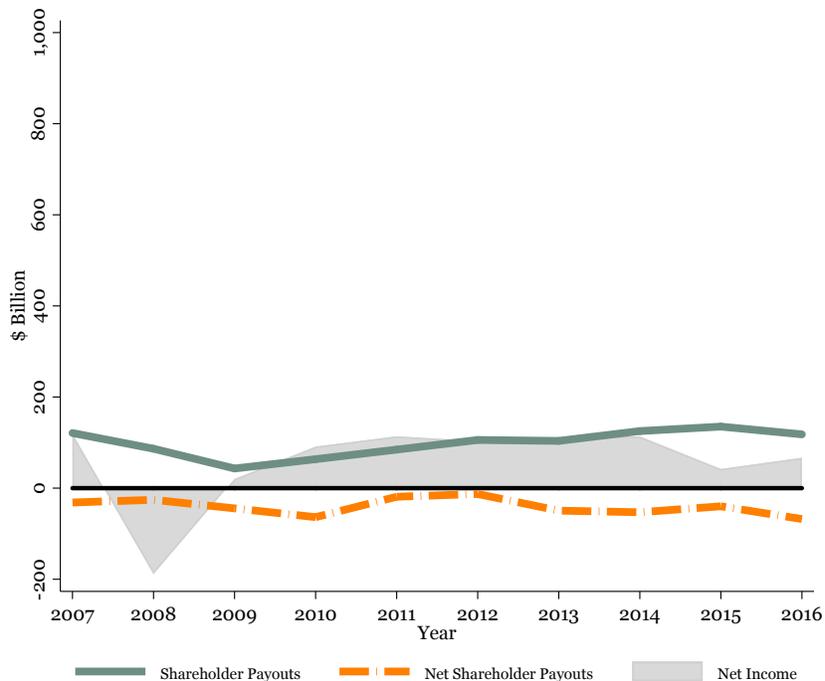
Our sample of non-S&P 500 firms consists of all firm observations in our dataset that are not included in the S&P 500 sample. All variable definitions are the same as above.

Focusing on public firms outside the S&P 500, we again find that net shareholder payouts are much lower than shareholder payouts. Indeed, net shareholder payouts are *negative* in each year, meaning that direct and indirect cash flows from public equity investors to these firms are positive. Figure 8 displays, for non-S&P 500 firms during the decade 2007-2016, annual shareholder payouts and annual net shareholder payouts, both against the backdrop of net income. Over the decade, these firms absorbed—directly or indirectly—a substantial portion (about 11%) of the net shareholder payouts of S&P 500 firms.

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<sup>17</sup>We estimate firm age based on the number of years since the first trading date on CRSP.

**Figure 8: Non-S&P 500 Shareholder Payouts and Net Shareholder Payouts (2007-2016)**

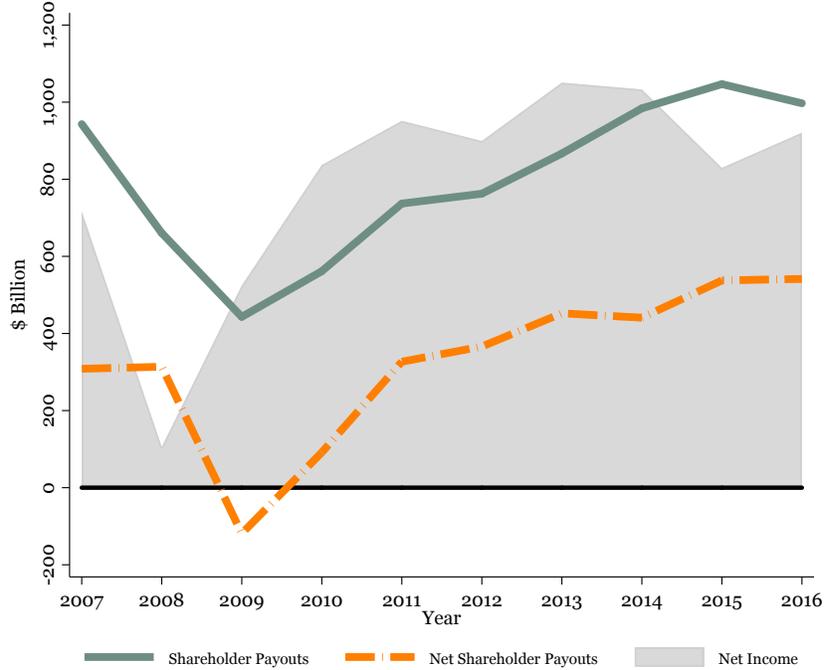


Net income is from Compustat; shareholder payouts are the sum of Compustat repurchases and dividends. Following (Boudoukh et al., 2007), we define repurchases as the purchase of common and preferred shares less any decrease in the value of preferred stock. Dividends are the dividends paid to common shares. Net shareholder payouts are computed using monthly CRSP data and are defined as dividends less net equity issuances (see Section 4.1 for details).

## 5.2 All Public Firms (2007-2016)

Integrating the results for S&P 500 firms and non-S&P 500 firms during the decade 2007-2016, Figure 9 shows annual shareholder payouts and net shareholder payouts for all public firms. Direct and indirect issuances by public firms in this period totaled approximately \$4.6 trillion, so that net shareholder payouts, at \$3.3 trillion, are a relatively small fraction of shareholder payouts, at about \$8 trillion. In fact, net shareholder payouts are actually negative in one year: 2009.

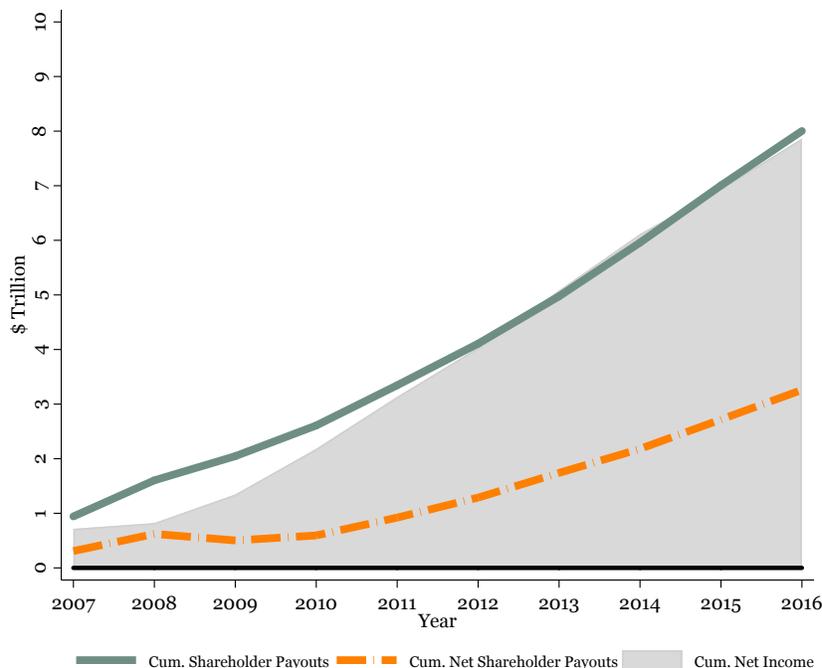
**Figure 9: Public-Firm Shareholder Payouts and Net Shareholder Payouts (2007-2016)**



Net income is from Compustat; shareholder payouts are the sum of Compustat repurchases and dividends. Following (Boudoukh et al., 2007), we define repurchases as the purchase of common and preferred shares less any decrease in the value of preferred stock. Dividends are the dividends paid to common shares. Net shareholder payouts are computed using monthly CRSP data and are defined as dividends less net equity issuances (see Section 4.1 for details).

Figure 10 shows cumulative shareholder payouts, cumulative net shareholder payouts, and cumulative net income for all public companies during the decade 2007-2016. While cumulative shareholder payouts track cumulative net income, cumulative net shareholder payouts are much lower and account for a smaller proportion of cumulative net income: they represent only 40.7% of cumulative shareholder payouts and 41.4% of cumulative net income.

**Figure 10: Public-Firm Cumulative Shareholder Payouts and Cumulative Net Shareholder Payouts (2007-2016)**



Net income is from Compustat; shareholder payouts are the sum of Compustat repurchases and dividends. Following (Boudoukh et al., 2007), we define repurchases as the purchase of common and preferred shares less any decrease in the value of preferred stock. Dividends are the dividends paid to common shares. Net shareholder payouts are computed using monthly CRSP data and are defined as dividends less net equity issuances (see Section 4.1 for details).

## 6 Examining Net Shareholder Payouts and Investment Capacity

We have thus far shown that, after accounting for direct and indirect equity issuances, net shareholder payouts are substantially smaller than shareholder payouts. Among S&P 500 firms during the period 2007-2016, the \$3.7 trillion in cumulative net shareholder payouts amounts to about 52% of cumulative shareholder payouts; among all public firms, the \$3.3 trillion in cumulative net shareholder payouts amounts to about 41% of shareholder payouts.

We now proceed to analyze whether these net shareholder payouts could significantly drain public firms of capital necessary for investment and innovation, as critics of shareholder payouts claim. Our analyses below suggest that the answer is decidedly no.

We first examine the ratio of net shareholder payouts to a measure of investment-available income, and show that net shareholder payouts are a relatively small fraction of that measure. We then examine evidence on public firms’ investment intensity, and show that there’s no evidence of a collapse in R&D and capital expenditures over the last decade. In fact, investment has been rising and is near peak levels last seen in the late 1990s. Meanwhile, cash reserves are growing substantially, leaving plenty of dry powder available for additional investment. Together, these data make it clear that public firms are not being drained of capital needed for investment. Rather, they are consistent with public firms having more capital than they need for the investment opportunities available.<sup>18</sup>

## 6.1 R&D-Adjusted Net Income

Critics of buybacks often compare the magnitude of shareholder payouts to net income, and conclude that public firms are depriving themselves of the resources necessary to grow (Lazonick, 2014). However, not only is shareholder payouts an incorrect measure of shareholder-firm capital flows, but net income is a poor measure of income available for investment: it assumes that the expenses deducted to arrive at net income are entirely unrelated to future-oriented investment. But net income is computed after deducting the substantial expenses associated with R&D, which is by definition future-oriented. During the period 2007-2016, for example, total R&D expenditures for S&P 500 companies equalled about 28% of total net income. Therefore, net income at best is a measure of the amount available for CAPEX and *additional* R&D.

A better measure of the income available for investment is what we call “R&D-adjusted net income”, which adds a firm’s R&D expenses (net of its effective tax rate) back to its net income. Net shareholder payouts as percentage of R&D-adjusted net income appear quite low. From 2007 to 2016, net shareholder payouts by S&P 500 firms constituted only 41.5% of R&D-adjusted net income. That would have left these firms with \$5.2 trillion available for CAPEX, R&D, and other investment by the end of 2016, even if they had started the period with zero cash balances. Across all public firms, net shareholder payouts constituted only 33% of R&D-adjusted net income, leaving them with \$6.6 trillion available for investment by the end of 2016 (again, assuming they started the period with no cash on hand).

Accounting for equity issuances and R&D dramatically changes the picture on how much income is available for investment after shareholder payouts. Figure 11 shows that if investment-available income is measured as the difference between net income and shareholder payouts, public firms

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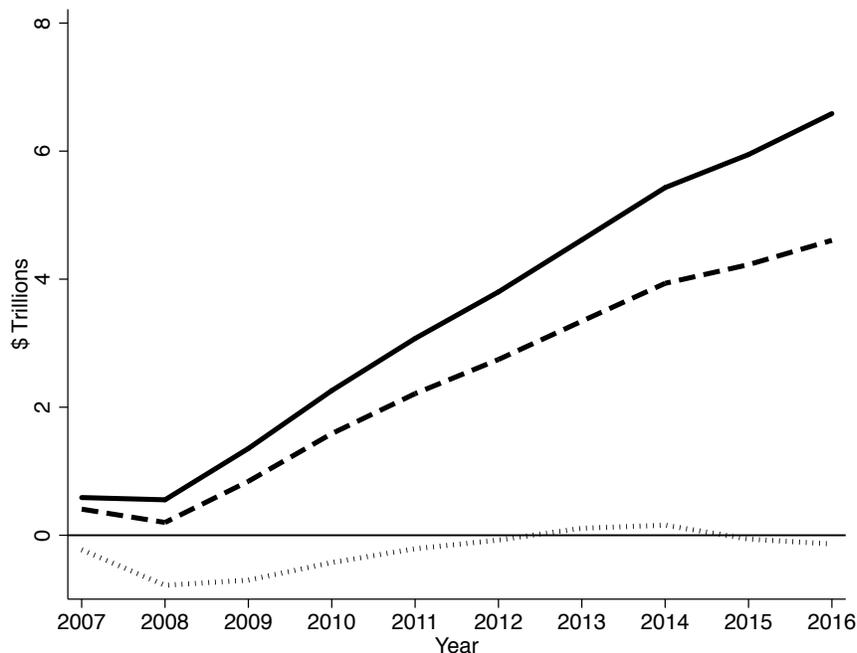
<sup>18</sup>To fully trace the sources and uses of capital flows in public firms, one would need to track not only shareholder-firm capital flows but also creditor-firm capital flows. Although such tracing is beyond the scope of this project, we have developed rough estimates of capital flows between public firms and their creditors. According to our estimates, total marginal debt capital inflows (net borrowing proceeds less after-tax interest payments on incremental net borrowing) for public firms equalled about one-third of net shareholder payouts during recent decades. Because of the coarseness of our estimates, and because debt imposes constraints on the firm’s future activities that equity does not, we choose to focus solely on equity capital flows, ignoring debt capital flows. However, it is worth mentioning that debt capital flows are likely to help explain public firms’ ability to increase investment and accumulate cash while also engaging in substantial net shareholder payouts.

failed to generate any such income during the 2007-2016 decade. In fact, they accumulated a \$136 billion deficit.

This picture changes dramatically when we take into account equity issuances. Using the difference between net income and net shareholder payouts as a metric for investment-available income, Figure 11 shows that public firms accumulated a significant amount of such income during the 2007-2016 decade—\$4.6 trillion.

This picture changes yet again when we take into account R&D expenses. Using the difference between R&D-adjusted net income and net shareholder payouts as a metric for investment-available income, Figure 11 shows that public firms accumulated \$6.5 trillion in excess profits during the 2007-2016 decade. These data show quite clearly that shareholder payouts are not starving public companies of the ability to invest, but rather leave firms with substantial amounts of capital for R&D, capital expenditures, and other investments.

**Figure 11: Public-Firm Cumulative Excess Income Available for Investment (2007-2016)**

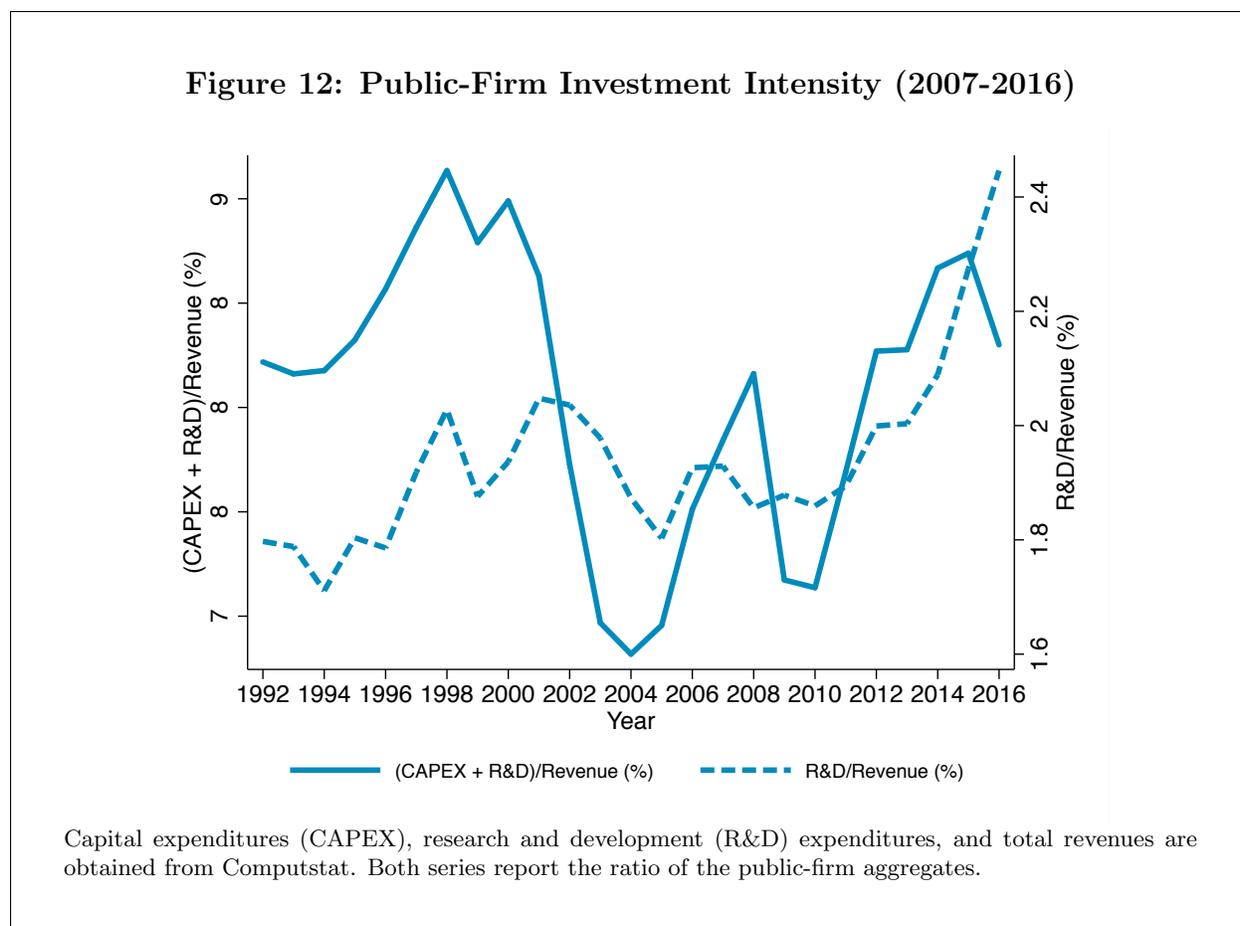


..... Cum. Net Income - Cum. Shareholder Payouts  
 - - - - Cum. Net Income - Cum. Net Shareholder Payouts  
 ——— Cum. R&D-Adjusted Net Income - Cum. Net Shareholder Payouts

Net income is from Compustat; shareholder payouts are the sum of Compustat repurchases and dividends. Following (Boudoukh et al., 2007), we define repurchases as the purchase of common and preferred shares less any decrease in the value of preferred stock. Dividends are the dividends paid to common shares. Net shareholder payouts are computed using monthly CRSP data and are defined as dividends less net equity issuances (see Section 4.1 for details). R&D-adjusted net income is net income plus R&D expense (net of effective tax rate).

## 6.2 Investment Intensity and Cash Balances

We now consider what public firms have done with the considerable investment capacity they have been generating. Figure 12 plots total investment intensity (the ratio of CAPEX and R&D over sales) and R&D intensity over the 25-year period from 1992 to 2016. While total investment intensity for public firms is volatile on a year-to-year basis, it has been rising over the past decade, and is now near peak levels not seen since the late 1990s.



One might argue investment intensity would have been even higher if firms did not distribute so much capital to shareholders. Although it is difficult to observe the counterfactual, we note that corporate cash stockpiles are huge and have been growing.

Figure 13 reports the aggregate cash (and cash-equivalent short-term investments) on public firms' balance sheets over the 2007-2016 decade. In 2007, public firms held \$3.3 trillion in cash. By 2016, this stash had grown by nearly 50% to \$4.9 trillion.

Figure 13: Public-Firm Cash Balances (2007-2016)



Cash and short-term investments and total assets are obtained from Compustat. The dashed series reports the ratio of the public-firm aggregated cash and short-term investment to aggregated total assets.

To be sure, some of this cash was held abroad and would have been taxed if repatriated for investment in the United States. But even if we were to assume that all of the public firms' available cash were held abroad and would have been taxed on repatriation at the highest possible rate in 2016 (35%), that would have left approximately \$3.2 trillion available to public firms in 2016 for internal investment.

In fact, much of the cash is held domestically. Although not all firms report how much of their cash is held domestically, it is possible to estimate a lower bound on the cash held domestically and determine whether there was a drying up of domestic cash. To do so, we analyzed hand-collected data from a sample of about 1000 firms during the period 2012-2016 whose domestic-foreign cash split could be inferred. This sample included 552 firms whose cash we can safely infer is all state-side: they have no foreign income, no foreign taxes, and no deferred foreign taxes ever recorded in Compustat. This sample also included 540 firms with foreign operations as of 2012 (i.e., with non-missing values in Compustat for foreign income, foreign taxes, or deferred foreign taxes) and which voluntarily disclosed the domestic-foreign allocation of their cash during the period 2012-

2016.<sup>19</sup> Together, this sample of 1,092 firms account for \$10.6 trillion in market capitalization in 2016 (about half the size of the sample of all public firms we analyze in [Section 5](#)). Their total cash stockpile went from \$985 billion in 2012 to \$1.26 trillion in 2016, and their domestic cash grew, albeit more slowly, from \$354 billion to \$368 billion. As a percentage of these firms’ total assets, their total domestic cash declined slightly from 5.5% to 5%.

These data indicate that public firms in aggregate had considerable domestic cash reserves and these reserves were not drying up during recent years. In sum, it is unlikely that investment intensity in public firms was restrained because firms lacked cash. Rather it appears that there were not enough investment opportunities to absorb all of the available cash, even after firms had engaged in share repurchases and dividends.

## 7 Looking Beyond the Public-Firm Data

We close by offering two reasons why the amount of net shareholder payouts, investment, and cash buildups by public firms—even if they looked much more alarming than the actual data—could not by themselves demonstrate that public firms and the economy as a whole were being harmed by excessive capital flows to shareholders.

### 7.1 Public Firms Can Always Issue More Equity

Even if a firm’s net shareholder payouts were very high relative to R&D-adjusted net income, this would not mean the firm lacked the capacity to innovate and expand, as it could always choose to issue more stock. The amount of equity issued by any given public firm in any given year does not represent a cap; the firm could have chosen to issue even more stock to raise cash, acquire assets, or pay employees.<sup>20</sup> Thus, if that firm has a valuable investment opportunity, but little cash, the firm should generally be able to use equity financing to exploit the opportunity.<sup>21</sup> As long as a firm can issue more shares, shareholder payouts should not meaningfully impair the firm’s subsequent ability to pursue valuable projects.<sup>22</sup>

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<sup>19</sup>We thank Siko Sikochi for generously providing this data.

<sup>20</sup>A firm that has reached the share-authorization ceiling under its charter would need both board and shareholder approval to increase that ceiling. In a firm with a controlling shareholder, that shareholder has the power to lift the ceiling. If there is no controlling shareholder and the board wishes to lift the ceiling, it could presumably obtain shareholders approval if it could make the case that shareholders would thereby benefit.

<sup>21</sup>Of course, if the firm’s stock is underpriced, executives serving current shareholders will not wish to issue additional stock unless the opportunity is particularly attractive. In fact, when the stock is sufficiently underpriced, executives serving long-term shareholders may under-invest in valuable opportunities inside the firm to free up funds to buy discounted shares ([Fried, 2015](#)). And executives may also have compensation-related reasons for disfavoring a large increase in the share count. But if the opportunity is attractive enough, both current shareholders and executives can benefit from the firm issuing more shares.

<sup>22</sup>Obviously, short-termist pressures could cause management to refrain from pursuing these valuable projects, notwithstanding the availability of equity financing. But then the failure to pursue the valuable projects would not be due to a lack of capital, but rather other constraints.

## 7.2 Net Shareholder Payouts by Public Firms Can Flow to Private Firms

The concern about the volume of shareholder payouts appears to be based, in part, on an implicit assumption that there is no economic benefit to putting cash in the hands of public shareholders. But net shareholder payouts from public companies do not disappear down the economic drain. Just as much of the net shareholder payouts from S&P 500 firms flow to smaller public firms outside the S&P 500, much of the net shareholder payouts from public companies in the aggregate are likely to be invested in firms raising capital through an IPO, or in non-public businesses backed by private equity or venture capital.

While tracing capital flows into such companies is difficult, we do know that VC and PE funds are now raising more than \$200 billion per year—a substantial fraction of the net shareholder payouts generated by all public firms—for investment in private firms (Prequin, 2018). These firms are vital to the U.S. economy. They account for more than 50% of non-residential fixed investment, employ almost 70% of U.S. workers, and generate nearly half of business profit (Asker et al., 2015). And, historically, private firms funded by VC and PE funds, including Silicon Valley start-ups, have generated tremendous innovation and job growth in the United States. Indeed, much of the critical innovation in our economy—including breakthroughs in pharmaceuticals and information technology—takes place in small private firms (Roe, 2013).

Even in the more “blue collar” field of energy, the most valuable and transformative innovations over the past decade have come out of small firms funded by private equity and VC investors, not out of publicly traded firms, and have created millions of high-paying jobs. Consider hydraulic fracturing and horizontal drilling (“fracking”), which has been described by Michael Porter and co-authors as “the largest single opportunity to change America’s competitiveness and economic trajectory, as well as our geopolitical standing” (Porter et al., 2015). Among other things, fracking has turned the U.S. into an energy superpower, generated 2.7 million high-paying new jobs, provided a much needed boost to the manufacturing sector, and revived struggling regions of the country (Porter et al., 2015). Fracking was not developed by large publicly-traded energy firms such as ExxonMobil, but rather by entrepreneurs and small firms financed with private equity capital (Touryalai, 2012).

Thus, even if net shareholder payouts were to reduce public firms’ ability to invest, innovate, and provide higher wages, some of these funds will find their way to private firms and enable *these* firms to invest, innovate, and provide higher wages. In short, any economic costs borne by stakeholders of public firms as a result of net shareholder payouts must be weighed against the economic benefits generated by the investment of at least some of those funds in private firms.

## 8 Conclusion

During the decade 2007-2016, shareholders of S&P 500 firms received \$7 trillion in shareholder payouts (dividends and repurchases). These payouts represented over 96% of the firms’ net income during this period. Such shareholder-payout figures are widely relied on by academics, corporate

lawyers, asset managers, and politicians as evidence that “short-termism” and “quarterly capitalism” are impairing public firms’ ability to invest, innovate and provide good wages. But, properly measured, public-firm capital outflows are far lower at approximately 41% of net income, and even lower percentage of the income available for investment.

These widely-cited shareholder-payout figures tell us little about corporate capital flows and public firms’ financial capacity, for several reasons. First, shareholder payouts are partially offset by direct and indirect capital inflows from shareholders to firms through equity issuances. We put forward and implemented a methodology for quantifying the dollar volume of capital inflows from public investors. Using this methodology, we found that, in S&P 500 firms during the decade 2007-2016, net shareholder payouts (shareholder payouts less equity issuances) are about 50% of shareholder payouts and net income.

Second, S&P 500 firms are not typical firms: they are more mature, and thus less in need of capital, than younger firms. Looking at public firms in the aggregate, net shareholder payouts during the period 2007-2016 are only \$3.2 trillion, about 40% of these firms’ shareholder payouts and net income during this period.

Third, net income is not actually a good measure of how much of a firm’s income is available for investment, as it is determined after subtracting such future-oriented expenses as R&D, which constitute a substantial proportion of net income. As a percentage of net income plus R&D expenses (net of tax effects), net shareholder payouts are only 42% for S&P 500 firms and 33% for all public firms. Our analysis can explain why public-firm investment has been rising over the past decade and cash balances have sharply increased, leaving plenty of dry powder for additional investment.

Even if net shareholder payouts were a very high percentage of R&D-adjusted net income, this would not necessarily mean that firms were distributing too much cash. In particular, a public firm that has promising opportunities can always issue additional equity to raise cash, pay employees, or acquire assets. And cash distributions to public shareholders do not go down the economic drain, as they can be recycled into private firms (including those backed by private-equity and venture-capital funds), which historically have been major contributors to innovation, employment, and economic growth. If there were a social cost to the cash distributions by public firms, one would need to balance it against the social benefit of infusing much of this cash into private firms.

In short, the volume of share repurchases and dividends by the largest public firms is highly unlikely to indicate that short-termism, or some other factor, is causing public firms to distribute too much cash to shareholders. Those arguing that short-termism is harming public companies will have to look elsewhere to find support for their claim.

**Table A1:**  
**Description of Variables**

This table presents definitions of variables used

Variable	Description
<b>Repurchases (Compustat)</b>	Following <a href="#">Boudoukh et al. (2007)</a> , we define repurchases as the purchase of common and preferred shares (Compustat item #115) [ <i>prstk</i> ] less any decrease in the value of preferred stock (Compustat item #56) [ <i>pstkrv</i> ].
<b>Dividends (Compustat)</b>	Dividends to common/ordinary shares (Compustat item #21) [ <i>dvc</i> ].
<b>Dividends (CRSP)</b>	We define dividends to common shares for firm $i$ in month $t$ from the CRSP monthly data as $(ret_t - retx_t) \times (shrout_t \times cfacshr_t) \times (prc_{t-1}/cfacpr_{t-1})$ , where $ret$ is the holding period return, $retx$ is the return excluding dividends, where $shrout$ is the number of shares outstanding at the end of the month, $cfacshr$ is the cumulative factor to adjust shares, $cfacpr$ is the cumulative factor to adjust price, and $prc$ is the month-end share price.
<b>Net Equity Issuances (CRSP)</b>	We define net equity issuances using CRSP as the change in shares between two months multiplied by the average price of the current month: $[(shrout_t \times cfacshr_t) - (shrout_{t-1} \times cfacshr_{t-1})] \times [mean(prc_t)/cfacpr_t]$
<b>Equity issuances (CRSP and Compustat)</b>	Net equity issuances + repurchases
<b>Shareholder Payouts (Compustat)</b>	Shareholder payouts are the sum of repurchases and dividends (Compustat).
<b>Net Shareholder Payouts (CRSP)</b>	Net shareholder payouts are the sum of dividends (CRSP) less net equity issuances.

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