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Abstract

During the period 2005-2014, S&P 500 firms distributed to shareholders more than \$3.95 trillion via stock buybacks and \$2.45 trillion via dividends—\$6.4 trillion in total. These shareholder payouts amounted to over 93% 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. We show that, taking into account issuances, *net* shareholder payouts by all U.S. public firms during the period 2005-2014 were in fact only about \$2.50 trillion, or 33% of their net income. Moreover, much of these net shareholder payouts were offset by net debt issuances, and thus effectively recapitalizations rather than firm-shrinking distributions. After excluding marginal debt capital inflows, net shareholder payouts by public firms during the period 2005-2014 were only about 22% of their net income. 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. We also offer three other reasons why corporate capital flows are unlikely to pose a problem for the economy.

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: G14, G32, K22

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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).

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.¹ 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

¹For 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 (including, most recently, Vice President Joe Biden) (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.

By way of example, consider a recent letter sent to corporate directors by Marty Lipton, who with his colleagues at Wachtell Lipton has been warning about the dangers of short-termism for almost 40 years (Lipton, 1979; Lipton and Rosenblum, 1991). According to Lipton:

“In response to short-termist pressures brought by hedge funds and activist shareholders, companies have been fundamentally altering their business strategies to forego long-term investments in favor of stock buybacks, dividends and other near-term capital returns. At this point, theoretical debates about [short-termism and corporate governance] ... have been superseded by observable, quantifiable trends and behaviors. For example, according to Standard & Poor’s, dividends and stock buybacks [in S&P 500 firms] ... totaled more than \$900 billion in 2014—the highest level on record... ” (Lipton, 2015)

These sentiments were recently echoed by Sir Martin Sorrell in the Economist’s “The World in 2017” (Sorrell, 2016). He reported that the ratio of shareholder payouts to net income in S&P 500 firms had reached 131% in the first quarter of 2014 and concluded that short-termism caused these firms to shrink by nearly a third in the first three months of 2016.

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 firm capacities, for three 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. 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 2005-2014, S&P 500 firms distributed to shareholders more than \$3.95 trillion through stock buybacks and \$2.45 trillion through dividends.² These cash outflows, which totaled \$6.4 trillion, represented 93% of these firms' net income during this period. But during this same period, S&P 500 firms absorbed, directly or indirectly, \$3.4 trillion of equity 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 2005-2014 were only about \$3 trillion, or 44% 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 2005-2014, they absorbed \$520 billion of equity capital, or about 16% of the net shareholder payouts of S&P 500 companies. Across *all* public firms, net shareholder payouts during the years 2005-2014 were only \$2.50 trillion, about 33% of the net income of public firms over this period.

Third, during the period 2005-2014 public firms engaged in approximately \$800 billion of net debt issuances, equal to 32% of the \$2.50 trillion in net shareholder payouts. When a firm borrows \$X and issues a dividend of \$X, there is no reduction in the firm's assets. Rather, such a transaction merely rebalances the firm's capital structure, substituting \$X of debt for \$X of equity. Thus, \$800 billion of the \$2.50 trillion in net shareholder payouts by public firms during the period 2005-2014 are effectively debt-for-equity recapitalizations, rather than downsizing distributions. Across the entire market, only \$1.7 trillion of net shareholder payouts, about 22% of aggregate net income, are not offset by net debt issuances.

Our analyses of net shareholder payouts, along with our findings on the extent to which net shareholder payouts are offset by net debt issuances, have important implications for the debate over short-termism. In particular, they indicate that capital flows from public firms to shareholders are (a) substantially smaller than they appear and (b) because of offsetting debt transactions, likely to have an even smaller impact on corporate financial capacities.

To be sure, we cannot rule out the possibility that short-termist pressures are causing some firms to distribute too much cash to shareholders (or are generating other costs unrelated to capital flows).

²Throughout this paper, we focus on the decade 2005-2014 because most of the commentary on shareholder payouts has focused on 2014 and prior years. The data from 2015 do not look substantially different from 2014, and the data from 2016 are, as of this writing, not yet available.

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.

Before proceeding, we wish to briefly mention three additional reasons why concerns about shareholder payouts from public companies are likely to be overblown. First, 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. On average, firms spend approximately 25-30% of their net income on R&D alone. 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.

Second, even net shareholder payouts (adjusted for net debt issuances) tell us little about the effect of such capital flows on public firms’ financial capacities—because firms can 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.³ 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.⁴ As long as a firm can issue more shares, even firm-shrinking net shareholder payouts (those not offset by net debt issuances) cannot impair the firm’s subsequent ability to invest, innovate, and grow.

Third, 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. Historically, these firms have been generators of tremendous innovation and job growth in the U.S. economy.⁵ Thus, even if net shareholder

³A firm that has reached the share-authorization ceiling under its charter would need shareholder approval to increase that ceiling. Presumably, such approval would be forthcoming if the board could make the case that shareholders would benefit from lifting the ceiling to increase the number of shares.

⁴Of 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).

⁵Consider 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

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 these funds in private firms.

The remainder of this paper proceeds as follows. [Section 2](#) focuses on shareholder payouts from public firms: dividends plus repurchases. It shows that, market-wide, 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, most equity issuances fall into one of three categories: cash-raising, acquisition-financing, and employee-paying. Moreover, 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. It shows that, during the period 2005-2014, net shareholder payouts of these firms are less than 50% of shareholder payouts and about 44% of net income.

[Section 5](#) considers net shareholder payouts for all public companies, both those in the S&P 500 and those outside of that index. It shows that public firms outside the S&P 500 are net equity capital importers, absorbing much of the net shareholder payouts of S&P 500 firms during the period 2005-2014. Accordingly, across all public firms, net shareholder payouts during the period 2005-2014 are an even smaller percentage of aggregate net income than if one looks solely at S&P 500 firms (approximately 33%).

[Section 6](#) shows that approximately 32% of net shareholder payouts in public firms during the period 2005-2014 are offset by net debt issuances, and thus effectively recapitalizations rather than firm-shrinking distributions. Excluding this offset amount, net shareholder payouts are approximately 22% of net income. 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.⁶ Dividends come in two flavors: “regular” (recurring payouts, e.g., \$0.25 per share every quarter) and “special” (one-off, usually

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](#)).

⁶A 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.

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).⁷ 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).

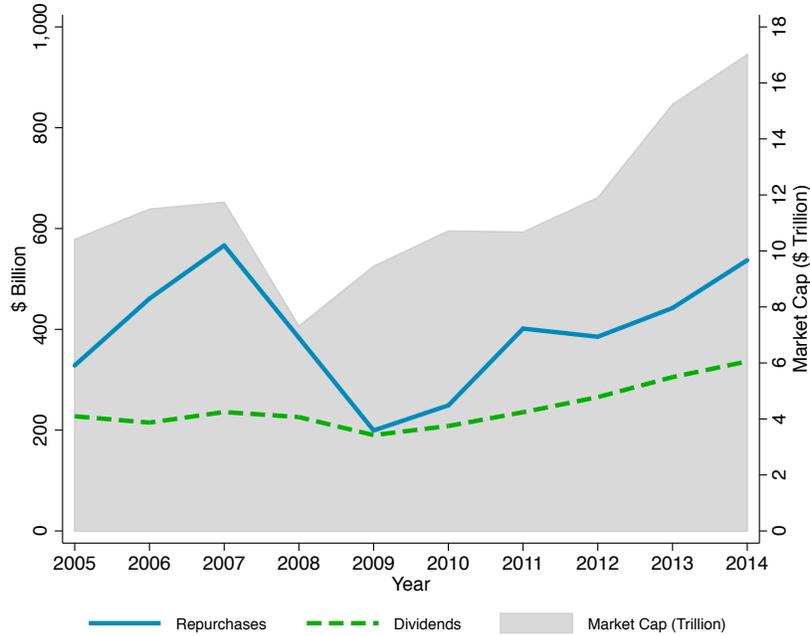
Fig. 1 depicts the time series of the dollar amounts of shareholder payouts—the sum of dividends and repurchases—by S&P 500 firms during the period 2005-2014. We estimate annual shareholder payouts using Compustat data. For dividends, we use data on dividends to common shares (i.e., Compustat variable *dvc*). 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*).⁸

Fig. 1 shows that during the period 2005-2014 S&P 500 firms distributed \$6.4 trillion of cash back to shareholders: \$3.9 trillion through repurchases and \$2.4 trillion through dividends. The top three cash-distributing firms over the period were ExxonMobil, Microsoft, and IBM, whose shareholder payouts over the decade totalled \$309 billion, \$204 billion, and \$149 billion, respectively.

⁷Unfortunately, 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 Hilary 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.

⁸While 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 (2005-2014)

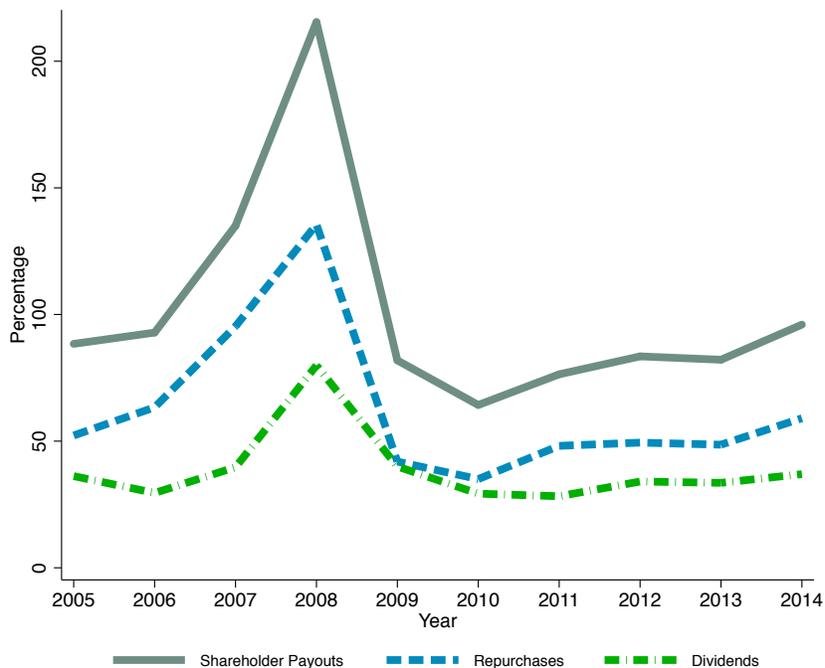


Repurchases of and dividends to common shares are from Compustat. Following [Boudoukh et al. \(2007\)](#), we define repurchases as the purchase of common and preferred shares less any decrease in the value of preferred stock. Market capitalization is the total, year-end market value computed using monthly 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 101% of annual total net income during the period 2005-2014 (with a median of 82%). These firms distributed more than 80% of their aggregate net income through shareholder payouts in 8 of the 10 years during the 2005-2014 period. During this decade, 93% 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 (2005-2014)



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. Finance 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](#)). 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 “simple 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, from an economic perspective, 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) simple cash-raising ([Section 3.1](#)), (2) acquisition-financing ([Section 3.2](#)), and (3) employee-paying ([Section 3.3](#)).

3.1 Simple Cash-Raising Issuances

After going public through an IPO, companies often continue to issue equity to public investors to raise cash for their operations or other business needs. We describe such cash-raising equity issuances as “simple” because it is easy to see how equity capital flows from public investors to the firm. These simple 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 simple cash-raising issuance ([Fama and French, 2005](#)) and, perhaps, than all other types of simple-cash raising issuances combined.⁹

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](#)).

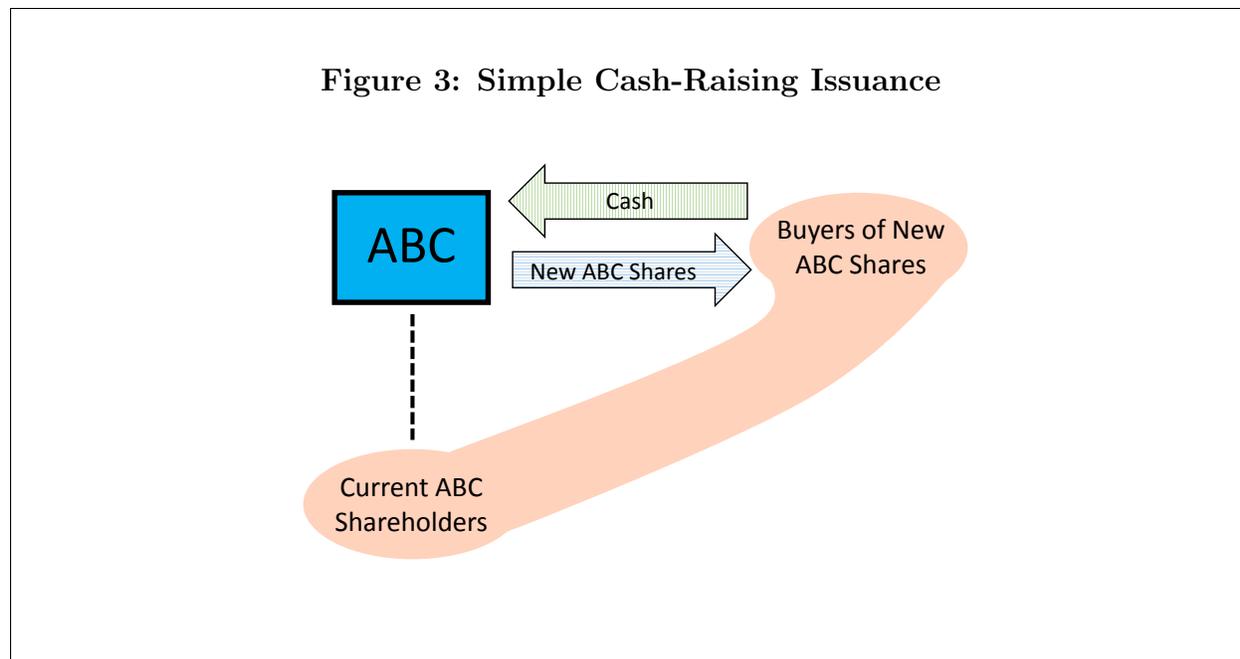
Over the last decade, firms have increasingly been using “at-the-market” issuances (ATMs) instead of firm-commitment SEOs. In an ATM, the firm sells shares directly (and quietly) on the market through a sales agent ([Billett et al., 2015](#); [Small et al., 2009](#)). Firms are not required by the SEC to announce ATM transactions as they take place; investors will not learn of a sale until months afterwards ([Fried, 2014](#)).¹⁰ The dollar volume of ATMs is now approximately 40% of the

⁹Unfortunately, the SEC does not require firms to clearly disclose the details of equity issuances. Thus, it is difficult (and sometimes impossible) to determine how much equity is issued via any given mechanism.

¹⁰One of us has suggested that firms be required to disclose ATM issuances (as well as OMR transactions) within one or two days ([Fried, 2014](#)).

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.¹¹

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



3.2 Acquisition-Financing Issuances

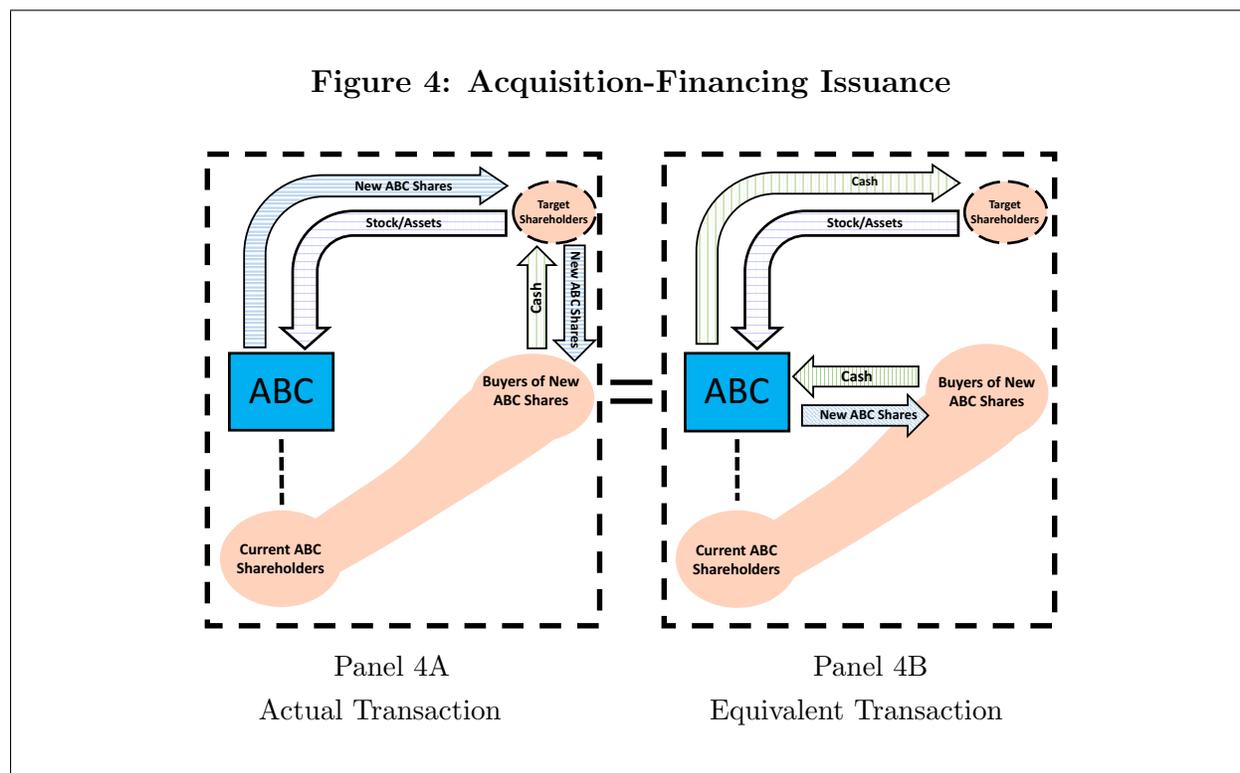
Public companies frequently use cash to acquire the shares (and, indirectly, the assets) of target companies, both public and private.¹² However, an acquirer can use its own equity in lieu of cash for such an acquisition (Fama and French, 2005). In a sample of approximately 5,000 M&A transactions during 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).

Figure 4 illustrates how an acquisition-financing issuance is economically equivalent to (1) a simple 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,

¹¹McLean (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 simple 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.

¹²In some cases, target assets are purchased directly by the acquirer from the target.

indirectly, Target assets). Target shareholders then sell their new ABC shares for cash to Buyers of new ABC Shares.¹³ 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.



3.3 Employee-Paying Issuances

The third 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.

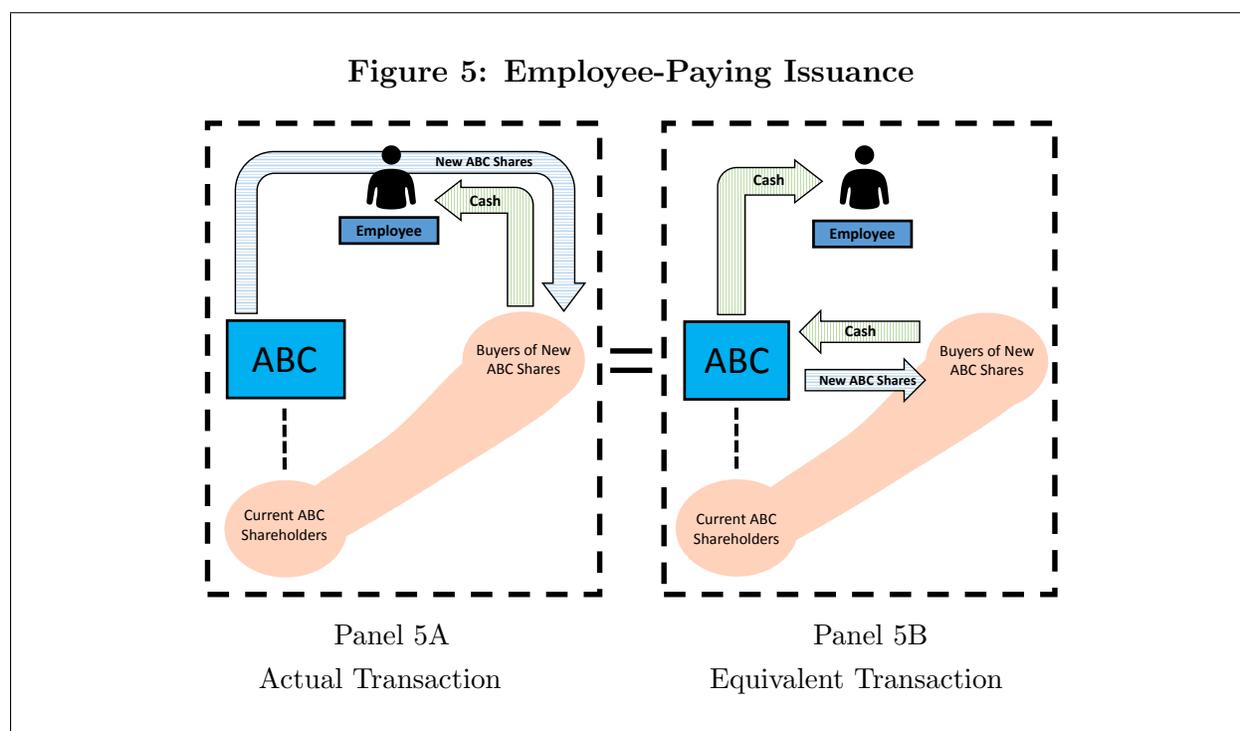
The magnitude of equity issuances in connection with compensation appears to be quite large. One study estimates that cash inflows from employees’ exercise of stock options (which, as we will explain below, understate the implicit cash flows from employee-paying issuances) make up almost 40% of proceeds of all cash-raising equity issuances (including IPOs, SEOs, and private placements) (McKeon, 2015). Another study found that the 100 largest non-financial firms spent \$150 billion annually buying up shares to “fund” equity compensation arrangements (Hohaus, 2015).

¹³Target 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.

While the use of restricted shares or stock options to compensate employees does not involve the direct receipt by the firm of cash equal to the value of shares issued, an employing-paying issuance is economically equivalent to a transaction in which the firm (1) engages in a simple cash-raising issuance and (2) then uses the cash raised to pay employees.¹⁴

Consider the following example. ABC Corporation could sell a share for \$100 to public investors, and then pay \$100 to an employee. Or ABC Corporation could give the employee a share and permit the employee to sell the share on the market for \$100. From the perspectives of the firm, the employee, and the firm’s shareholders, the outcomes of these two arrangements are identical.¹⁵

Figure 5 illustrates the equivalence between an employee-paying issuance and a simple cash-raising issuance followed by payment of the cash to an employee. On the left-hand panel (Panel 5A) is the actual employee-paying issuance: ABC issues its own shares to Employee, who then sells the shares to public investors. On the right-hand panel (Panel 5B), 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.



¹⁴The issuance of common stock pursuant to the conversion of convertible securities (debt or preferred stock) or the exercise of warrants can similarly be characterized as (1) a cash-raising issuance followed by (2) a cash payment to the convertible security or warrant holder.

¹⁵If ABC uses options rather than shares to compensate the employee, the resulting transactions are equivalent to (1) a simple cash-raising issuance and (2) the use of the proceeds to pay the employee, and for other purposes. To illustrate, suppose that ABC Corporation gives an employee an option to buy a share with a \$40 strike price when the stock trades for \$100. The employee exercises the option by paying ABC \$40, acquires the share, and sells the share to public investors for \$100. The result is equivalent to ABC Corporation (1) selling a share for \$100 to public investors, and (2) then paying \$60 to the employee and using the remaining \$40 for other purposes. Public investors give up \$100 to obtain a new share of ABC, the employee gets \$60, and ABC has \$40 in cash.

Recall that one of the main concerns raised about buybacks is that they 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).¹⁶ 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.

4 Net Shareholder Payouts of the S&P 500 (2005-2014)

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 2005-2014 were \$6.4 trillion. As this Section explains, direct and indirect equity issuances for these firms during this period totalled approximately \$3.4 trillion. Taking into account these equity issuances, S&P 500 net shareholder payouts for the same period are thus only about \$3 trillion.

4.1 Methodology and Data

We define net shareholder payouts for a publicly traded firm as

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

¹⁶Repurchases 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 generally use repurchases to acquire at least some of the shares given to employees.

where net equity issuances is defined as the dollar amount of share issuances minus the dollar amount of share repurchases. Although we can observe and measure the dollar amount of equity repurchases and dividends (using Compustat as in [Section 2](#)), we do not directly observe (indirect) equity issuances and thus net equity issuances. Thus, in estimating net shareholder payouts we use CRSP data to estimate Dividends and Net Equity Issuances as follows:

$$\underbrace{(ret_t - retx_t)(shrout_t \times cfacshr_t) \frac{prc_{t-1}}{cfacpr_{t-1}}}_{\text{Dividends}} - \underbrace{[shrout_t \times cfacshr_t - shrout_{t-1} \times cfacshr_{t-1}] \bar{P}_t}_{\text{Net Equity Issuances}}, \quad (2)$$

where ret is the holding period return, $retx$ is the return excluding dividends, $shrout$ 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, prc is the month-end share price, and \bar{P}_t is the average of the daily values of the stock’s adjusted price ($prc/cfacpr$) over the month.¹⁷

We make two observations about our estimation methodology. First, our method for estimating the dollar volume of net equity issuances, which can be called a “share-count” method, is similar to those 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](#)). In particular, we combine changes in shares outstanding with a measure of the stock price. The main difference in the calculation is the assumed price at which the net equity issuance occurs. [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. By contrast, our approach uses the average of daily prices over the calendar month. 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.

Second, our 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. In fact, repurchases generally take place at below-average prices (e.g., [Simkovic, 2009](#)) and equity issuances 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 2005–2014. 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 drop all observations

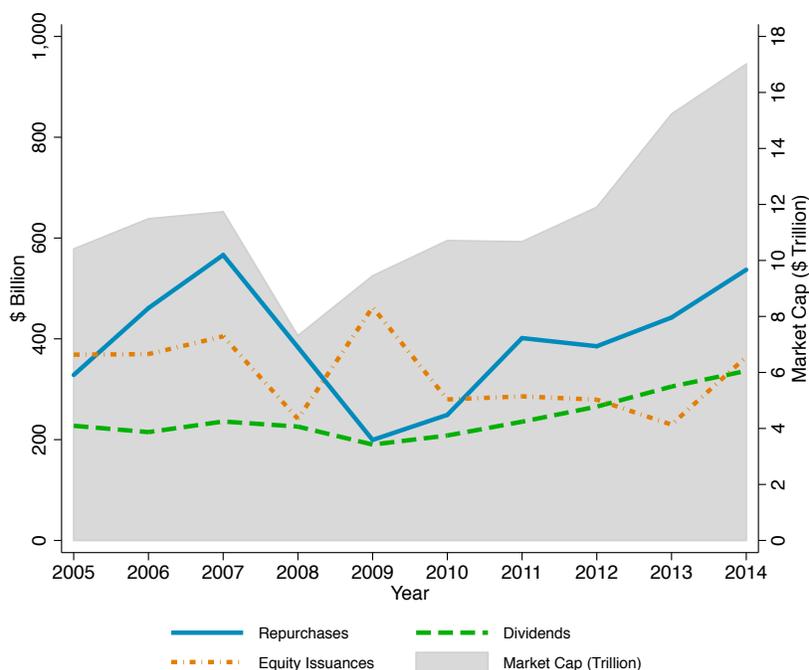
¹⁷Note that although total dividends are estimated in two ways, through Compustat and CRSP, the two approaches provide very similar results. For example, among S&P500 firms during the period 2005-2014, the average aggregate annual dividend paid estimated using CRSP is \$236 billion versus \$245 billion using Compustat. Moreover, the aggregate annual dividends paid over this period estimated using the two approaches are 92% correlated.

that do not have a 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, a firm must have a calendar year observation in Compustat and a corresponding twelve full months of observations in our monthly CRSP data.

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 2005-2014. We obtain yearly issuance volume by adding repurchases (from Compustat) to net equity issuances. Figure 6 shows issuance volumes for each year during the decade 2005-2014, alongside repurchases and dividends. The dollar volume of equity issuances was in fact higher than the dollar volume of repurchases in 2005, 2009, and 2010. Over the entire decade, the total volume of equity issuances totaled about \$3.37 trillion, 15% less than the \$3.95 trillion in repurchases over the same period.

Figure 6: S&P 500 Repurchases, Dividends, and Equity Issuances (2005-2014)



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. Equity issuances are CRSP net equity issuances plus Compustat repurchases. Market capitalization is computed using calendar-year-end CRSP share and price data.

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 2005-2014, against a backdrop of net income. Net shareholder payouts in the S&P 500 are generally less than 50% 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 2005-2014 period, net shareholder payouts were approximately 47.33% of shareholder payouts and 44.18% of net income.

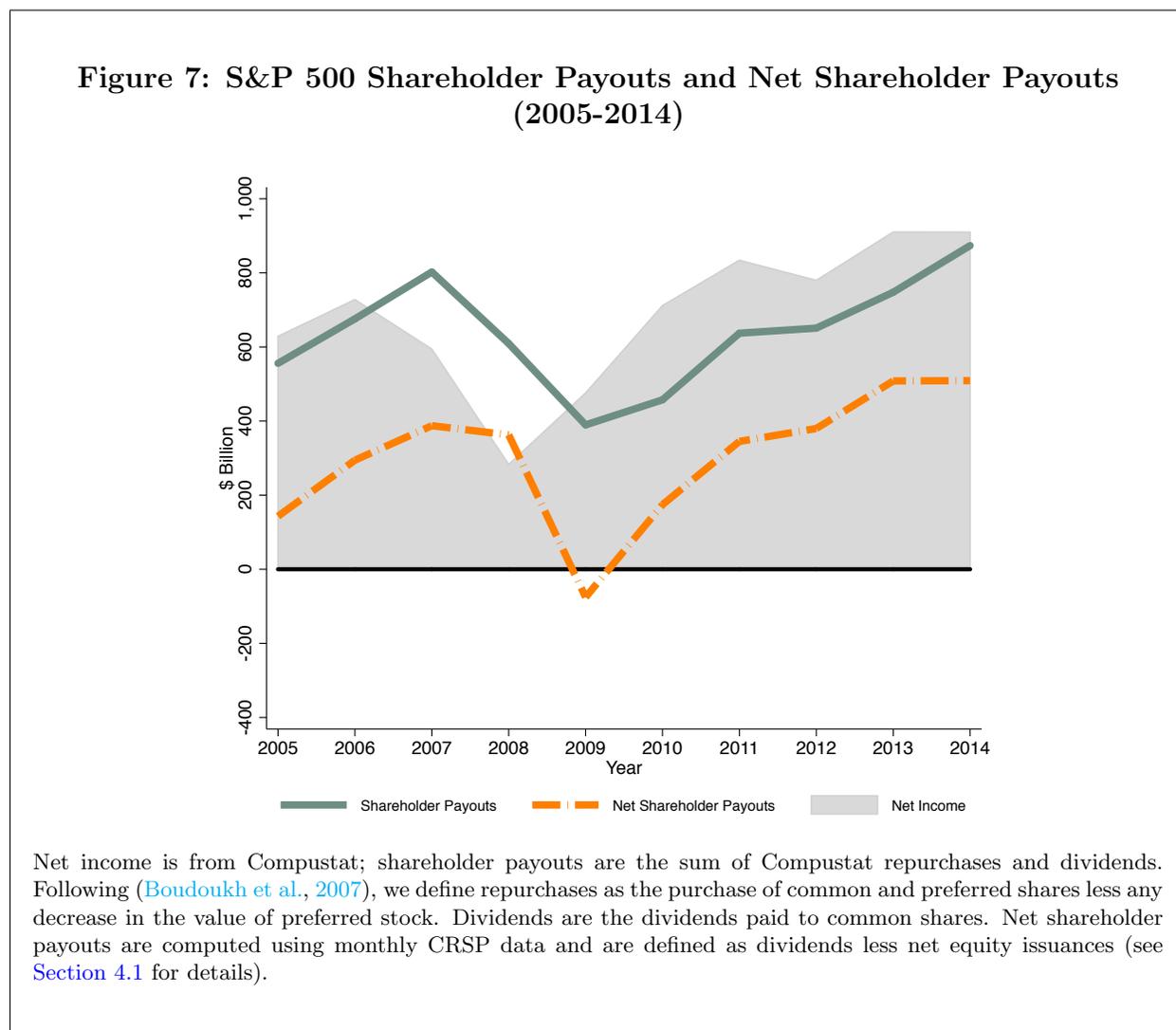
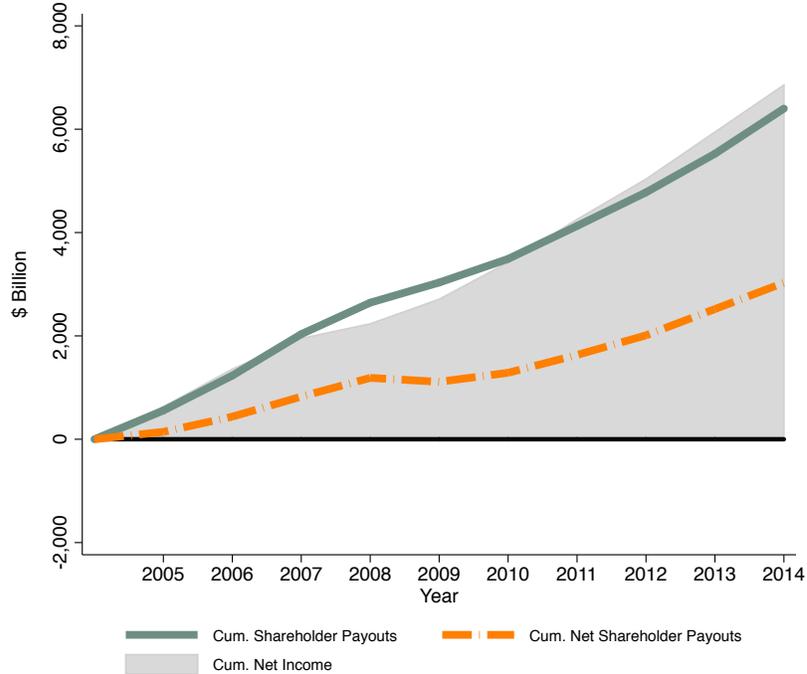


Figure 8 displays cumulative shareholder payouts, cumulative net shareholder payouts, and cumulative net income for S&P 500 firms during the decade 2005-2014. While cumulative shareholder payouts closely tracks cumulative net income, cumulative net shareholder payouts appears to increase over time at a much slower rate.

Figure 8: S&P 500 Cumulative Shareholder Payouts and Cumulative Net Shareholder Payouts (2005-2014)



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).

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 2005-2014 are 14% lower than shareholder payouts (\$265 billion vs. \$309 billion). For Microsoft, they are nearly 38% lower (\$127 billion rather than \$204 billion). And for IBM, they are nearly 20% lower (\$120 billion instead of \$149 billion).

5 Net Shareholder Payouts from All Public Firms (2005-2014)

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 shareholders: these payout figures fail to take into account offsetting equity issuances. Taking into account equity issuances, net shareholder payouts by S&P 500 firms during the decade 2005-2014 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 median age of S&P 500 firms over our sample period is slightly over 33 years; the median age of non-S&P 500 public firms is 13 years.¹⁸ 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 2005-2014, 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.

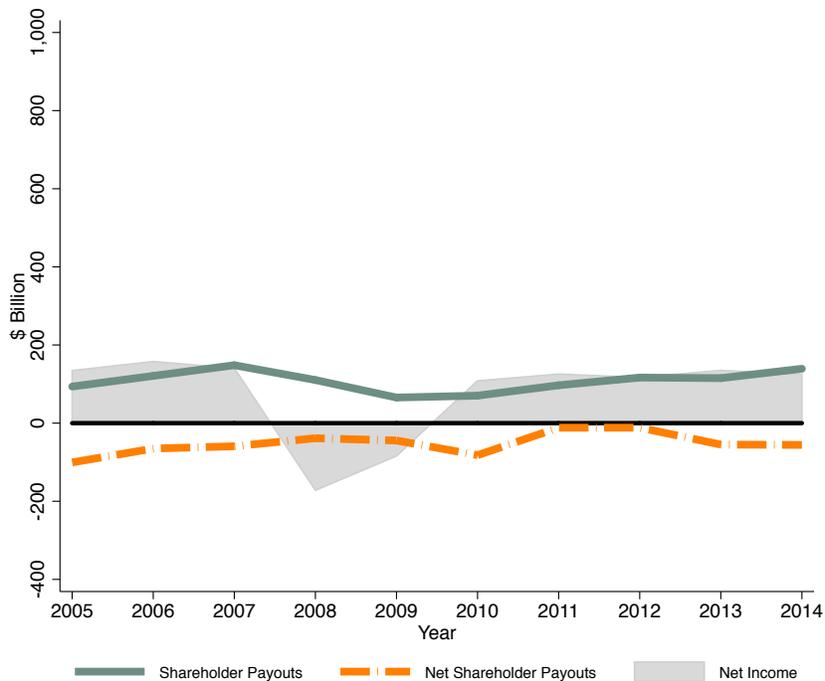
5.1 Non-S&P 500 Firms (2005-2014)

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 (including firms that were present in the S&P 500 for less than an entire calendar year). We also limit ourselves to those firms that have a full twelve months of data for a given year in CRSP. 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 9 displays, for non-S&P 500 firms during the decade 2005-2014, annual shareholder payouts and annual net shareholder payouts, both against the backdrop of net income.

¹⁸We estimate firm age based on the number of years since the first trading date on CRSP.

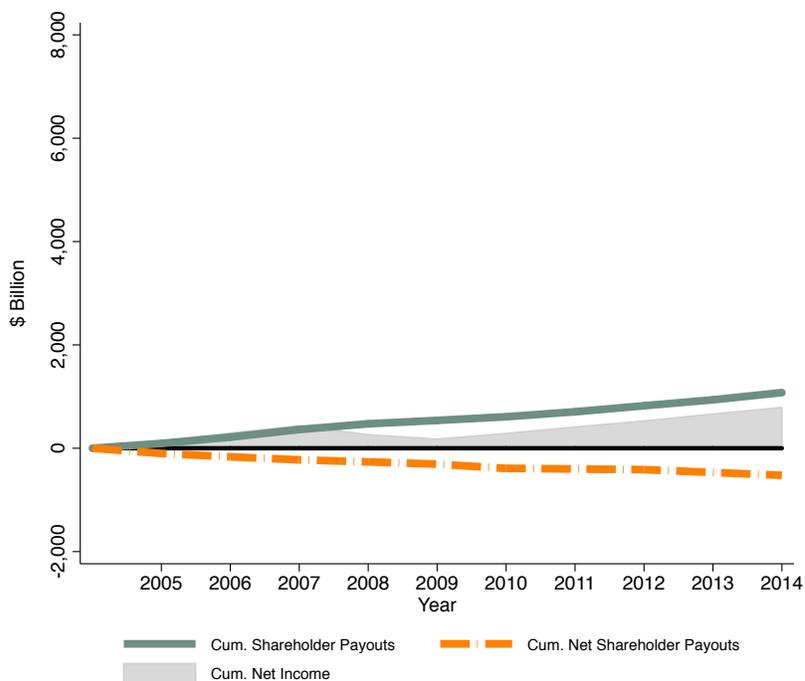
Figure 9: Non-S&P 500 Shareholder Payouts and Net Shareholder Payouts (2005-2014)



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 and cumulative net shareholder payouts, as well as cumulative net income, for non S&P 500 firms during the decade 2005-2014. As with S&P 500 firms during this period, cumulative shareholder payouts track cumulative net income. Cumulative net shareholder payouts, however, are negative. Moreover, their magnitude is substantial relative to cumulative net income. In other words, public investors contribute a substantial amount of capital to these firms relative to the earnings that the firms generate themselves through their business operations.

Figure 10: Non-S&P 500 Cumulative Shareholder Payouts and Cumulative Net Shareholder Payouts (2005-2014)



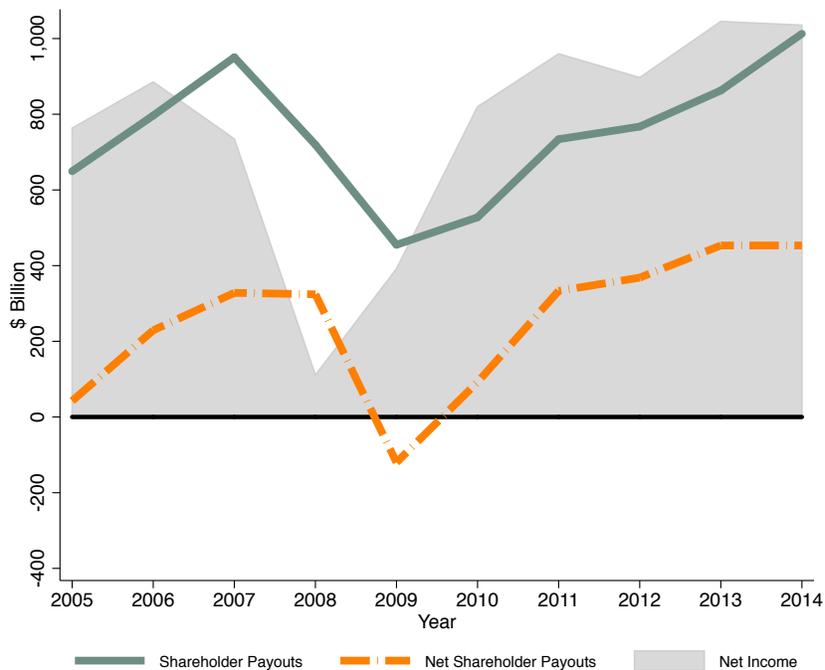
Net income is from Compustat; shareholder payouts are the sum of Compustat repurchases and dividends. Following (Boudoukh et al., 2007), we define repurchases as the purchase of common and preferred shares less any decrease in the value of preferred stock. Dividends are the dividends paid to common shares.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

In fact, in every single year of this decade (2005-2014) we find negative net shareholder payouts for non-S&P 500 firms. These firms absorb—directly or indirectly—a substantial portion (about 16%) of the net shareholder payouts of S&P 500 firms.

5.2 All Public Firms (2005-2104)

Integrating the results for S&P 500 firms and non-S&P 500 firms during the decade 2005-2014, Figure 11 shows annual shareholder payouts and net shareholder payouts for all public firms. Net shareholder payouts over this period, \$2.50 trillion, are a relatively small fraction of shareholder payouts over this period, \$7.48 trillion. In fact, net shareholder payouts are actually negative in one year: 2009.

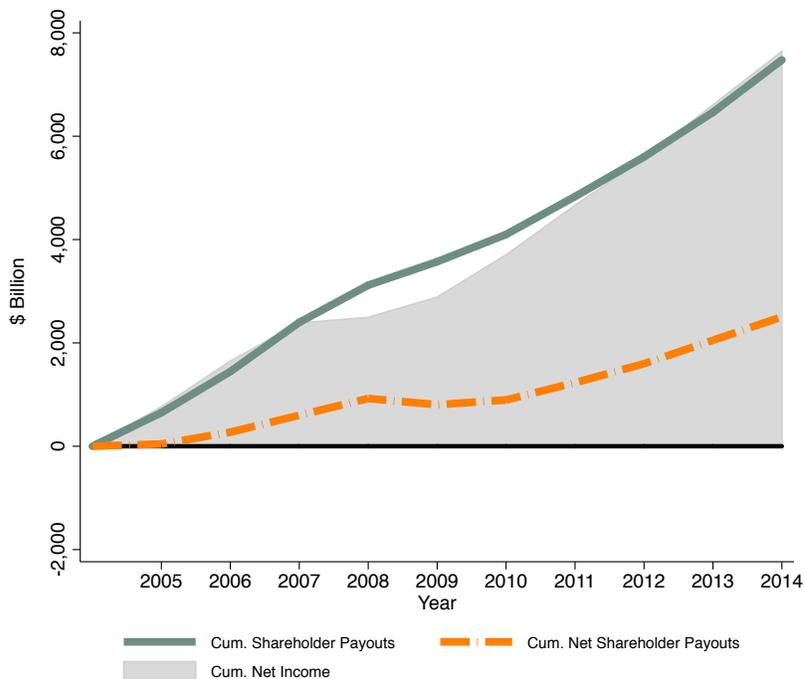
Figure 11: Public-Firm Shareholder Payouts and Net Shareholder Payouts (2005-2014)



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 12 shows cumulative shareholder payouts, cumulative net shareholder payouts, and cumulative net income for all public companies during the decade 2005-2014. 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 33.5% of cumulative shareholder payouts and 32.8% of cumulative net income.

Figure 12: Public-Firm Cumulative Shareholder Payouts and Cumulative Net Shareholder Payouts (2005-2014)



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 Net Debt Issuances and Net Shareholder Payouts (2005-2014)

So far we have described two problems with pointing to shareholder payouts for S&P 500 firms as evidence of excessive cash distributions by public firms to their shareholders. First, public shareholders of S&P 500 firms return to these firms, via equity issuances. During the decade 2005-2014, about 53% of the cash received through shareholder payouts was returned, directly or indirectly, to firms. In these firms, net shareholder payouts are about 47% of shareholder payouts and 44% of net income. Second, firms belonging to the S&P 500—because they are generally older and more mature than other public firms—are more likely to make shareholder payouts than the average public firm. Not surprisingly, then, across the entire universe of public firms net shareholder payouts during the period 2005-2014 are an even smaller percentage of shareholder payouts: approximately 33%.

This Section describes a third problem with using shareholder payouts from the S&P 500 as

evidence of excessive cash distributions to public-firm shareholders: many shareholder payouts by public firms are offset by net debt issuances. Prior research has demonstrated that shareholder payouts are often financed by debt (Farre-Mensa et al., 2015); over 42% of firms paying dividends or repurchasing shares engage in payout-financing behavior such as raising debt. To the extent firms offset net shareholder payouts with net debt issuances, they are effectively engaging in debt-for-equity recapitalizations, rather than in firm-shrinking distributions. In other words, when a firm’s net shareholder payouts are offset by a net debt issuance, its capacity to invest, innovate, and pay good wages should remain largely unchanged.

We thus seek to determine the portion of public-firm net shareholder payouts during the period 2005-2014 that are not offset by net debt issuances.¹⁹ Because net debt issuances increase interest payments to creditors (and thereby reduce net cash inflows from creditors), we take into account the additional after-tax cost of interest payments arising from these issuances. We thus define Marginal Capital Outflows for a publicly-traded firm as

$$\text{Marginal Capital Outflows} = \text{Net Shareholder Payouts} - \text{Marginal Debt Capital Inflows}, \quad (3)$$

where net shareholder payouts is defined in Eq.1 and estimated using CRSP, and

$$\text{Marginal Debt Capital Inflows} = \text{Net Debt Issuances} - \text{After-Tax Marginal Interest}. \quad (4)$$

The calculation of net debt issuances is straightforward. Following Bradshaw et al. (2006), we estimate net debt issuances as cash received from issuance of long term debt (Compustat item *dltis*) less long term debt reduction (Compustat item *dltr*) plus any changes in current debt (Compustat *dlcch*). For any given firm in any given year, net debt issuances may be positive, zero, or negative.

The computation of the after-tax interest associated with the net debt issuances is more complicated, and proceeds in five steps. First, we obtain for each firm its monthly S&P long-term domestic issuer credit rating over the fiscal year (Compustat ratings file item *SPLTCRM*). Second, we obtain the effective yield associated with each S&P credit rating (based on Bank of America Merrill Lynch U.S. corporate bond indexes) and compute the fiscal-year-average effective interest rate for each firm.²⁰ Third, for each firm, we calculate cumulative net debt issuances outstanding at the end of the fiscal year (starting from the beginning of 2005). Fourth, we apply the firm’s fiscal-year-average effective interest rate to these cumulative net debt issuances. The interest charge is always

¹⁹We ignore cash inflows and outflows from preferred stock issuances, dividends, and redemptions, as preferred shares are generally an insignificant portion of public firms’ capital structures.

²⁰Data for the Bank of America Merrill Lynch US corporate bond indexes are made available by the St. Louis Federal Reserve: <https://fred.stlouisfed.org/categories/32347>. In matching S&P ratings to effective interest rates, we remove +’s and -’s. Thus, firms rated ‘BBB+’ and ‘BBB-’ are treated as ‘BBB’ firms. Because there is no effective yield for credit ratings below ‘CCC’, all firms with credit ratings below ‘CCC’ are treated as ‘CCC’ firms. For the subset of companies that do not have a long-term domestic issuer credit rating from the Compustat ratings file, we assume a ‘BB’ rating. This rating is conservative; it is lower than the average corporate debt rating for each year of the 2005-2014 decade except 2014 (when it was also ‘BB’), including the years during and immediately after the 2008-2009 financial crisis (Crooks and Teshler, 2016).

zero or positive; when these cumulative issuances are negative, we set the interest charge to zero. In the fifth and final step, to compute the after-tax cost of the interest charge, we multiply the charge by one minus the effective tax rate, where the effective tax rate is estimated as the tax expense divided by pretax income (or TXT/PI using Compustat fields). Our measure of marginal debt capital inflows is obtained by subtracting after-tax marginal interest from net debt issuances.²¹

Our approach to measuring after-tax marginal interest is conservative in several respects. First, firms likely borrow using a mix of (lower-rate) short-term debt and (higher-rate) long-term debt. However, we assume that the interest rate on all cumulative net debt issuances is the effective interest rate on long-term debt. To the extent that a firm relies on both short-term and long-term sources for debt funding, our method would overestimate the amount of interest outflows, understate the amount of marginal debt capital inflows, and overstate the amount of marginal capital outflows.

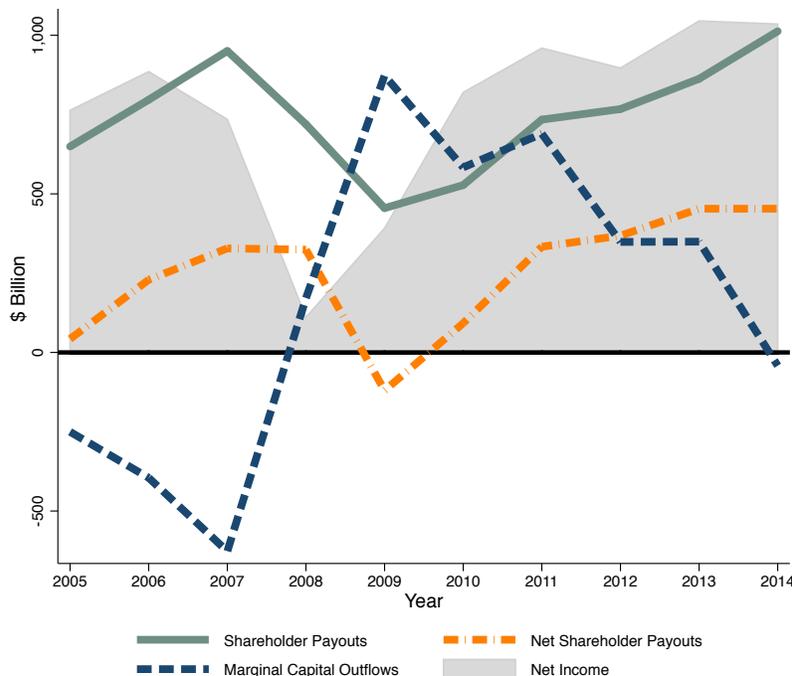
Second, by not counting “negative” after-tax marginal interest (reductions in interest payments caused by net debt repayments), we overstate the marginal interest from net debt issuances across the entire market. To see why, suppose that there are only two public firms in the market: ABC and XYZ. Each issues debt at an interest rate of 10% and pays no tax. In 2005, ABC increases its debt by \$100 and XYZ decreases its debt by \$100. The firms do not issue or pay down any debt during the remaining nine years of the decade (2006-2014). In 2005, net debt issuances across the market sum to zero as the debt changes of XYZ and ABC offset each other. However, in 2005 and each of the next 9 years, ABC is deemed to pay an additional \$10 (10% of \$100) of interest, while XYZ’s offsetting interest savings is not taken into account. As a result, in each year of the 2005-2014 decade marginal debt capital inflows across the market (that is, ABC and XYZ) are considered negative. Our approach will thus tend to overstate after-tax marginal interest across the market, understate marginal debt capital inflows, and overstate marginal capital outflows.

Third, by using the average tax rate for each firm rather than the (potentially higher) marginal tax rate, we are likely to underestimate the tax savings of interest payments. As a result, we will tend to overstate after-tax marginal interest cost, understate marginal debt capital inflows, and overstate marginal capital outflows.

Figure 13 reports the time series of shareholder payouts, net shareholder payouts, and marginal capital outflows for all public firms from 2005 to 2014 against the backdrop of aggregate net income. In seven years of this decade (2005-2008 and 2012-2014), we find that marginal capital outflows are lower than net shareholder payouts; in other words, marginal debt capital inflows were positive. During the three years following the 2007-2008 financial crisis (2009-2011), when firms’ ability to obtain financing from debt markets was substantially impaired, marginal capital outflows are higher than net shareholder payouts. That is, marginal debt capital inflows were negative (across the market, firms shed debt) due to the tightening supply of credit.

²¹In other words, $\text{Marginal Debt Capital Inflows}_t = \text{Net Debt Issuances}_t - (1 - \tau)r \left(\sum_{i=2005}^t \text{Net Debt Issuances}_i \right) \cdot \mathbb{1}[\sum_{i=2005}^t \text{Net Debt Issuances}_i > 0]$, where r is the interest rate and $\mathbb{1}$ is an indicator variable.

Figure 13: Annual Shareholder Payouts, Net Shareholder Payouts, and Marginal Capital Outflows (2005-2014)



Shareholder payouts are the sum of Compustat repurchases and dividends. Net shareholder payouts are computed using monthly CRSP data and are defined as dividends less net equity issuances (see [Section 4.1](#) for details). Marginal capital outflows are net shareholder payouts less marginal debt capital inflows. Marginal debt capital inflows is defined as net debt issuances less after-tax marginal interest. Net debt issuances is a Compustat measure defined as long term debt issuance less reductions in long term debt plus changes in current debt. Interest outflows apply the average effective yield, obtained from the Merrill Lynch U.S. corporate bond indexes, over the fiscal year to positive cumulative net debt issuances. After-tax interest is obtained by applying one minus the effective tax rate (tax expense divided by pre-tax income) to the interest outflow.

Over the entire decade, we find that total marginal debt capital inflows amounted to \$804 billion, meaning that approximately 32% of the \$2.5 trillion of net shareholder payouts during this decade were offset by net debt issuances (less interest). Across the entire market of public firms, the portion of net shareholder payouts not offset by marginal debt capital inflows was only \$1.7 trillion, or about 22% of aggregate net income.

It is worth comparing the post-crisis time-series trends for shareholder payouts, net shareholder payouts, and marginal capital outflows. Both shareholder payouts and net shareholder payouts have increased since 2008-2009, tracking changes in net income. By contrast, marginal capital outflows appear to be declining significantly and reverting to pre-crisis levels, meaning that firms are issuing more and more new debt. By 2014, marginal capital outflows were around zero: net shareholder payouts were completely offset by marginal debt capital inflows. Whether or not this

trend continues, our findings in this Section reinforce the notion that one cannot assess corporate capital flows by focusing solely on share repurchases and dividends.

Table 1 reports the shareholder payouts, net shareholder payouts, and marginal capital outflows for the three firms with the largest shareholder payouts during the period 2005-2014 (ExxonMobil, Microsoft, and IBM). As we noted in Section 4, while these firms together paid out approximately \$662 billion to shareholders in dividends and repurchases, net shareholder payouts—after taking into consideration direct and indirect issuances—were about 23% less (approximately \$512 billion). But each of these three firms had positive marginal debt capital inflows during the decade, offsetting some of these net shareholder payouts. For each firm, marginal capital outflows were thus lower than net shareholder payouts. For ExxonMobil, marginal capital outflows were only 4% lower than net shareholder payouts (\$255.47 billion vs. \$265.16 billion). Microsoft and IBM, however, experienced larger marginal debt capital inflows, creating a bigger wedge between marginal capital outflows and net shareholder payouts. For Microsoft, marginal capital outflows were 16% lower than net shareholder payouts (\$106.21 billion vs. \$127.04 billion). And for IBM, the difference was 13% (\$103.52 billion vs. \$119.52 billion).

As noted earlier, marginal debt capital inflows across the entire market are about 32% of net shareholder payouts. Thus, the marginal debt capital inflows for these three firms, while substantial, are somewhat lower as a fraction of net shareholder payouts than the fraction obtained from aggregating across all firms.

**Table 1: Top 3 Shareholder-Payout Firms
2005-2014 (in \$ Billions)**

Company	Shareholder Payouts	Net Shareholder Payouts	Marginal Capital Outflows
ExxonMobil	309.00	265.16	255.47
Microsoft	203.98	127.04	106.21
IBM	148.97	119.52	103.52

Shareholder payouts are the sum of Compustat repurchases and dividends. Net shareholder payouts are computed using monthly CRSP data and are defined as dividends less net equity issuances (see [Section 4.1](#) for details). Marginal capital outflows are net shareholder payouts less marginal debt capital inflows. Marginal debt capital inflows is defined as net debt issued less after-tax interest outflows. Net debt issued is a Compustat measure defined as long term debt issuance less reductions in long term debt plus changes in current debt. Interest outflows apply the average effective yield, obtained from the Merrill Lynch U.S. corporate bond indexes, over the fiscal year to positive cumulative net debt issued. After-tax interest is obtained by applying one minus the effective tax rate (tax expense divided by pre-tax income) to the interest outflow.

7 Conclusion

During the decade 2005-2014, shareholders of S&P 500 firms received \$6.4 trillion in shareholder payouts (dividends and repurchases). These payouts represented over 93% 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 22% of net income.

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 2005-2014, net shareholder payouts (shareholder payouts less equity issuances) are about 50% of shareholder payouts and about 44% of 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 2005-2014 are only \$2.50 trillion, about 33% of these firms' net income during this period.

Third, aggregating across all public firms, a large portion of net shareholder payouts are offset by net debt issuances, and thus effectively represent a rebalancing of capital structures rather than a reduction in public-firm assets. Excluding that portion of net shareholder payouts that is offset by net debt issuances, net shareholder payouts of public firms during the decade 2005-2014 represent about 22% of public-firm net income during that period.

We also briefly offered three other reasons to be skeptical of the argument that public firms are distributing too much cash to shareholders from a social perspective. First, 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. On average, R&D expenses amount to about 25-30% of net income. At most, net income indicates the percentage of a firm's income that is available for capitalized expenditures or additional R&D.

Second, the distribution of cash to shareholders via dividends and repurchases should generally not impair public firms' ability to make desirable investments given their ability to raise capital through additional equity issuances. In particular, a public firm that has promising opportunities can always issue additional equity to raise cash, pay employees, or acquire assets.

Third, cash distributions to public shareholders do not go down the economic drain. Just as much of the net shareholder payouts of S&P 500 firms are invested in smaller public firms, much of the net shareholder payouts of public firms find their way to 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
Repurchases (Compustat)	Following Boudoukh et al. (2007) , 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>].
Dividends (Compustat)	Dividends to common/ordinary shares (Compustat item #21) [<i>dvc</i>].
Dividends (CRSP)	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.
Net Equity Issuances (CRSP)	We define net equity issuances using CRSP as the change in shares between two months multiplied by the average price of the current month: $[(shrout_t \times cfacshr_t) - (shrout_{t-1} \times cfacshr_{t-1})] \times [mean(prc_t)/cfacpr_t]$
Equity issuances (CRSP and Compustat)	Net equity issuances + repurchases
Marginal debt capital inflows (Compustat)	Net debt issuances - after-tax marginal interest. Following Bradshaw et al. (2006) , we define net debt issuances as cash received from issuance of long term debt (Compustat item #111) [<i>dltis</i>] less long term debt reduction (Compustat item #114) [<i>dltr</i>] plus any changes in current debt (Compustat #301) [<i>dlcch</i>]. To account for additional after-tax interest outflows associated with cumulative net debt issued, we compute the after-tax marginal interest rate using debt ratings from S&P, interest rates from Bank of America Merrill Lynch US corporate bond index, and the pretax income from Compustat (<i>TXT/PI</i>).
Shareholder Payouts (Compustat)	Shareholder payouts are the sum of repurchases and dividends (Compustat).
Net Shareholder Payouts (CRSP)	Net shareholder payouts are the sum of dividends (CRSP) less net equity issuances.
Marginal Capital Outflows (CRSP and Compustat)	Net shareholder payouts - marginal debt capital inflows

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