2-2018

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Recommended Citation

Adhikari, Binay K., and Anup Agrawal. "Peer Influence on Payout Policies." Journal of Corporate Finance 48 (February 1, 2018): 615–37. https://doi.org/10.1016/j.jcorpfin.2017.12.010.

Forthcoming, *Journal of Corporate Finance*, 2018

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Current draft: December 2017

Comments welcome

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Peer Influence on Payout Policies

Abstract

Using a large sample of US public companies, we find robust evidence that firms' payout policies, i.e., dividends and share repurchases, are significantly influenced by the policies of their industry peers. To overcome endogeneity problems, we employ instrumental variable techniques based on peers' stock price shocks. Peer influence on payouts is more pronounced among firms that face greater product market competition and operate in better information environments. With regards to dividends, firms, especially smaller and younger firms, are more sensitive to industry peers that are similar to them in size and age. However, mimicking repurchases is concentrated among large and mature firms only. Peer influence on dividends, compared to repurchases, seems more stable across firm and industry conditions. Overall, peer influence on dividends, and, to a less extent, on repurchases, is consistent with a rivalry-based theory of imitation, which posits that firms imitate peers' actions to maintain their competitive parity.

JEL: G35

Keywords: Payout Policy; Dividend policy; Share Repurchases; Peer effects; Mimicking; Imitation

Peer Influence on Payout Policies

"Virtually all board and senior management analysis related to dividend decisions starts with in-depth peer benchmarking."

- Dividends: The 2011 Guide to Dividend Policy Trends and Best Practices (J. P. Morgan)

1. Introduction

Economic theory suggests that individuals and firms often have incentives to imitate each other. Duflo and Saez (2002) find that individuals' retirement savings behaviors are highly influenced by their peers. Scharfstein and Stein (1990) show that managers can sometimes avoid negative reputations by ignoring their private information and imitating the actions of others. By imitating, managers who are concerned about their reputations in the labor market send signals to others about their own quality. Surveys of corporate executives also have found that managers consider peer firms' decisions when choosing their own firms' policies (see, e.g., Graham and Harvey (2001)). Lieberman and Asaba (2006) review large literature on imitation and propose two broad theories of why firms imitate each other: 1) information-based theory, which suggests that firms follow other firms that are perceived to have superior information, and 2) rivalry-based theory, which suggests that firms imitate their rivals to maintain competitive parity or limit rivalry.

Despite ample theoretical support and anecdotal evidence of peer influence, empirical research on the causal effect of peer firms on corporate policies is rather limited. A notable exception is a recent study by Leary and Roberts (2014), who show that corporate capital structure choices are highly interdependent, and that peers' capital structure is the most important observable determinant of a firm's capital structure. Patnam (2011) finds positive industry peer effects in investment and R&D among Indian public companies. In related work, Fracassi (2016) finds that managers are influenced by their social peers when making corporate policy choices.

In this paper, we examine whether firms are influenced by their industry peers' policies when making payout policies such as whether to pay and how much to pay via dividends or share repurchases. Finance research acknowledges the importance of peers in payout (and other) policies, mainly by including industry fixed-effects and industry averages in empirical models. However, the literature has yet to establish that peers have a causal effect on a firm's payout policy. Most studies implicitly assume that firms make their decisions in isolation, only based on firm-specific characteristics. So an examination of peer effects can add to our knowledge about how firms set payout polices. For example, evidence of peer effects may imply that managers' hands are effectively tied when a firm's peers pay dividends, causing investors to expect the firm to do the same. In fact, based on a survey of corporate managers, Brav, Graham, Harvey and Michaely (2005) point to this possibility by concluding that "*With respect to payout policy, the rules of the game include … do not deviate far from the competitors;* …" (p. 523). Moreover, an understanding of peer effects may help answer why dividends tend to be so persistent, and whether this tendency to conform to industry peers snowballs into the phenomena of disappearing and reappearing dividends, and their concentration, found by previous studies (see, e.g., Fama and French (2001), Hoberg and Prabhala (2008), Julio and Ikenberry (2004), and DeAngelo, DeAngelo and Skinner (2004)).

Payouts are one of the most important decisions made by a firm, and cash dividends have been the primary payout method for centuries. Theoretical literature gives ample explanation for why firms may imitate each other's payout policies. Perhaps the strongest theoretical support for mimicking dividends comes from an inertia-based explanation of dividends.[1] The original purpose of dividends was to make stocks easy to price by making them comparable to debt because dividends provide the most direct statistic for firm valuation. The sheer popularity of dividend discount models in finance textbooks speaks to the importance of dividends as an important metric for stock valuation. Moreover, empirical evidence suggests that dividends are perceived as valuable by both retail investors (see, e.g., Graham and Kumar (2006)) and institutional investors (see, e.g., Ben-David, Glushkov, and Moussawi (2010)). Not surprisingly, practitioners and analysts commonly cite dividend payouts as a measure of valuation, especially

[1] See Ben-David (2010) for a review of this literature.

when comparing firms in the same industry.[2] This 'valuation-as-yardstick' concept proposes that firms manage their dividends in order to help investors value their stream of cash flows by making the firm comparable to their peers. Consequently, when these firms compete in capital markets, they have strong motivations to react to each other's dividend policies.

A prediction from the 'valuation-as-yardstick' concept is that dividend changes are correlated within industries. If investors use the same dividend yield to price firms within an industry, a change in dividend payout by one firm is expected to be followed with payout changes in the same direction by peer firms who like to remain comparable to peers. This notion is supported by Firth's (1996) finding that a dividend announcement by a firm also affects the valuations of other firms in its industry.

Alternatively, signaling motivations also provide a plausible explanation for mimicking behavior. Lintner (1956) argues that a dividend increase signals management's belief that earnings are going to increase. Signaling theory argues that owing to asymmetric information, dividends are explicit signals about future earnings, sent intentionally by management to shareholders (see, e.g., Bhattacharya (1979, Miller and Rock (1985), John and Williams (1985)). Empirical evidence also supports that firms pay dividends in order to convey information to shareholders (see, e.g., DeAngelo, De Angelo and Skinner (1996), and Benartzi, Michaely and Thaler (1997)). Clearly, to the extent that (1) dividends are effective signals that attract investors' attention and (2) firms compete with each other for this positive attention, they have an incentive to mimic peer firms' dividend policies. Moreover, this incentive to mimic is likely to be stronger among firms in more competitive industries, in which it is more difficult to differentiate the firm based on products. It is also likely to be more pronounced among younger firms, which do not have an established history of operations and have a greater need to be comparable with peers in order to obtain favorable valuations.

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[2] Consider the following excerpt from a *U.S. News & World Report* story: "*Yes, Apple already pays a dividend. That's true. But it's also a shamelessly insufficient dividend. ... While on the surface MSFT's [Microsoft's] 2.5 percent dividend is comparable to Apple's 2.1 percent yield, using the payout ratio exposes just how different the shareholder capital return philosophies are.*" Why Apple (AAPL) Needs to Double Its Dividend Immediately (Aug. 16, 2016, http://money.usnews.com/investing/articles/2016-08-15/apple-inc-aapl-stock-dividend-could-double)

On the other hand, share repurchases have become an increasing important method of payout. In fact, the decrease in dividends is almost entirely substituted by an increase in share repurchases (see Grullon *et al.* (2011)), and firms often substitute one form of payout with the other depending on investors' preferences and market conditions (see Li and Lie (2006)). In addition, Massa, Rehman and Vermaelen (2007) show that firms sometimes strategically mimic repurchase decisions of other firms to signal their competitiveness to the market.

Consistent with these predictions, we find that a firm's decisions on whether to start paying dividends, how much dividend to pay, and whether and how much to repurchase are significantly influenced by those of its industry peers. To overcome endogeneity concerns, we follow Leary and Roberts (2014) and employ an instrumental variables (IV) technique. We use industry peers' idiosyncratic stock return shocks and idiosyncratic risks as instruments for peers' dividend policies. Results from IV regressions indicate that peer firms have a causal effect on both payout policies – dividends and repurchases. While the ability to repurchase shares enables firms to deflect peer pressure to initiate dividends, share repurchases do not significantly affect peer pressure on the amount of dividend subsequent to dividend initiation.

Finally, we examine the heterogeneity in peer effects to better understand the reasons behind peer influence on payouts. We find that peer influence on both forms of payout is stronger among firms that face more intense product market competition. In general, peers are more influential to firms that are of similar size and age as themselves. Smaller and younger firms are especially more influenced by their peers' dividend policies, but mimicking repurchases is concentrated among larger and mature firms. Moreover, peer influence on dividend is more pronounced among firms that operate in *better* information environments, i.e., firms in industries that are followed by more analysts and where stock trading conveys less private information. These patterns collectively support the rivalry-based motive for mimicking proposed by Lieberman and Asaba (2006). Our findings do not provide strong support for the signaling motive for mimicking payouts.[3] Finally, we find that the announcement effects of

[3] This conclusion is consistent with Leary and Michaely's (2011) inference that the evidence of dividend smoothing does not support a signaling motive, and Brav et al. (2005)'s survey evidence that managers reject the notion that they pay dividends to signal firm quality.

dividend increases are more positive when the resulting dividend is close to peers, but no similar pattern is evident for dividend decreases. This asymmetry does not appear to be caused by time variation in the premium that investors attach to dividends (see Li and Lie (2006)).

To our knowledge, this is the first study that attempts to identify the causal effect of peer firms on a firm's payout policies. The closest study to ours is a concurrent working paper by Popadak (2017), who analyzes peer effects in the context of Lintner's partial-adjustment model of dividends. Our paper differs from Popadak's in several ways. First, unlike Popadak, we examine dividend initiation, which is a more important decision than dividend continuation because once firms start paying dividends, they rarely stop. Second, while Popadak finds no evidence of a peer effect in repurchases, we find a strong effect of peers in the decision to repurchase as well as the amount of repurchases.[4] Third, we examine potential interactions between dividends and share repurchases, which Popadak does not. Finally, because existing theories of dividends such as signaling are not supported by previous empirical and field studies (see, e.g., Leary and Michaely (2011), and Brav et al. (2005)), we seek explanations of peer influence on payout from theories beyond the finance literature. We find that peer influence on dividends fits a simple but well-founded rivalry-based theory of mimicking proposed by Lieberman and Asaba (2006).

This work is related to important prior research by Leary and Roberts (2014), who find that capital structure choices within an industry are highly interdependent, and Fracassi (2016) and Patnam (2011), who show that related firms make correlated financial choices. Our paper also complements Massa, Rehman and Vermaelen (2007), who find that repurchase decisions are correlated within an industry, but attempt to establish causality indirectly via cross-sectional tests only. Our paper offers cleaner evidence of a causal effect (i.e., mimicking, rather than a response to common industry shocks) by using well-established instrumental variables that are plausibly independent of common industry shocks. Additionally, our paper examines potential

[4] This difference in our results may be because Popadak analyzes quarterly data, while we examine annual data. Since firms usually repurchase shares out of temporary cash flows (see Jagannathan, et al. (2000), which tend to be sporadic, looking for a peer effect in repurchases with quarterly data may impose too high a hurdle to find an effect.

complementarity or substitution in mimicking different types of payouts.[5] More broadly, our paper is also related to prior research on how a firm's actions or outcomes affect its industry peers (see, e.g., Foster (1981) and Baginsky (1987) for earnings; Firth (1996), Howe and Shen (1998) and Laux, Starks and Yoon (1998) for dividends; Eckbo (1983) for mergers; Lang and Stulz (1992) for bankruptcies; and Servaes and Tamayo (2014) for control threats).

The rest of the paper is organized as follows. Section 2 briefly discusses identification challenges and introduces our instrumental variables (IV). Section 3 lays out our empirical methodology and explains the construction, relevance, and validity of our instruments. Section 4 presents firm-level summary statistics. Section 5 presents the main empirical tests, including IV regressions. Section 6 discusses potential motives for peer influence on payout by using a theoretical framework. Section 7 concludes the paper.

2. Identification challenges and instrumental variables

The idea of peer effects on payouts is intuitive and grounded in theory. However, empirical tests of peer effects are challenging because of the 'reflection problem' highlighted by Manski (1993). Specifically, a positive correlation between a firm's payout policy and the policies of its industry peers does not confirm that peer effects exist because firms may adopt similar dividend policies simultaneously in response to common industry shocks. For example, changes in investment opportunities or tax incentives may lead all firms within an industry to change their dividend policies simultaneously.[6]

The 'gold standard' for overcoming such an identification problem requires randomly assigning peers to each candidate firm. Unfortunately, this approach is not feasible with observational data in which firms' peers are fixed. An alternative solution entails the following: 1) identify shocks that affect some firms in the peer group but not others, and 2) test how the

[5] Moreover, Massa, Rehman and Vermaelen (2007) find a stronger peer effect among concentrated industries using HHI based on sales. We use a newer and arguably better measure of product market competition, and find that both dividend and repurchase mimicking are more prevalent in more competitive industries.

[6] Many studies in social sciences have recognized a positive correlation among peer behavior but have warned against making causal inferences about peer effects (see Angrist, 2014).

affected firms' responses to these shocks change the behavior of their peers that are unaffected by these shocks. This strategy lies at the heart of our empirical technique.

To test how a firm, say firm *i*, is affected by payout policies of its peers, an ideal approach would be to collect 'events' that are relevant only for *i*'s peer firms' policies, but are random with respect to firm *i*'s own policies. However, most such events are not readily observable to a researcher, and, more importantly, it is extremely difficult to ascertain that these events do not directly affect firm *i*.[7] Fortunately, firms' stock price changes, which impound the information about these events, are readily observable. These changes can be decomposed into systematic (i.e., common) components and firm-specific shocks by using asset-pricing models such as Fama-French (1993) and Carhart (1997) factor models. We follow Leary and Roberts (2014), who adopt this strategy in constructing their instrumental variables to study peer effects on capital structure. Following Leary and Roberts (2014), we define peer firms as all *other* firms in the same three-digit SIC industry code in a given year. We identify shocks to peers' payout policies via their stock return shocks (idiosyncratic returns) and idiosyncratic volatilities, which we use in instrumental variables models. Section 3.2 offers an extensive discussion of why these instrumental variables are relevant for peers' dividend and repurchase policies. For now, we note that the empirical strategy here is to exploit heterogeneity in peer firms' payout policies caused by idiosyncratic equity shocks they experience. Accordingly, in the first stage of our instrumental variables regressions, we predict peer firms' dividend and repurchase policies with the peer firms' average stock price shocks and the variance of these shocks. In the second stage, we use the peers' predicted (instrumented) payout policies to explain firm-specific payout policies.

3. Empirical methodology

To estimate peer effects on dividends, we employ the following empirical model, which is similar to one used by Leary and Roberts (2014):

[7] Leary and Roberts (2014) highlight this problem with the help of an example of CEO death. An accidental death of a CEO of a firm *j* appears to be a random event for any other firm k ($\neq j$). But this event can impact firm *k* directly via shifts in CEO labor markets and unanticipated changes in product markets.

$$y_{jit} = \propto + \beta \bar{y}_{-ijt} + \gamma' \bar{X}_{-ijt} + \lambda' X_{ijt} + \varphi' v_t + \varepsilon_{ijt} \qquad (1)$$

The indices *i, j* and *t* correspond to firm, industry, and year respectively. The outcome variable y_{jit} is a measure of the payout policies of firm *i* in industry *j* and year *t*. Peer firms are defined as all firms in the same three-digit SIC code, except firm *i*, in a given year. The variable $\bar{y}_{-ijt}$ denotes peer firms' average dividend or repurchase policy (average of all firms in industry *j* *except* firm *i* in year *t*). We assume that $\bar{y}_{-ijt}$ is endogenous, which calls for using instrumental variables. Following Leary and Roberts, we use a contemporaneous $\bar{y}_{-ijt}$ measure instead of a lagged measure because peer effects are likely identified more cleanly if there is insufficient time lag for other variables to have an influence. The vectors $\bar{X}_{-ijt}$ and X_{ijt} contain peer firm averages and firm-specific characteristics, respectively, as control variables; v_t represents year fixed effects; and ε_{ijt} is the firm-specific error term that is assumed to be correlated within the firm and heteroskedastic. Therefore, all our regression specifications have heteroscedasticity robust standard errors clustered within firms (Peterson (2009)).

3.1 Construction of the instruments

To parse out the firm-specific stock price shock, we follow Leary and Roberts (2014) but also augment our model with size, book-to-market and momentum factors (Fama-French (1993) and Carhart (1997)) as follows:

$$R_{jit} = \alpha_{ijt} + \beta_{ijt}^{M} \times MKT_t + \beta_{ijt}^{SMB} \times SMB_t + \beta_{ijt}^{HML} \times HML_t + \beta_{ijt}^{MOM} \times MOM_t + \beta_{ijt}^{IND}(\bar{R}_{-ijt} - RF_t) + \eta_{ijt}, \qquad (2)$$

where R_{jit} refers to the total stock return for firm *i* in industry *j* over the month *t*. MKT_t is the excess market return, SMB_t is size factor, HML_t is the book-to-market factor, MOM_t is the momentum factor, and $(\bar{R}_{-ijt} - RF_t)$ is the excess return on an equally weighted industry (three-digit SIC code) portfolio, excluding firm *i*'s return. We include the last factor in the model to remove any common variation in stock returns across the industry.

We estimate equation (2) for each firm on a rolling annual basis using historical monthly returns. We require at least 24 months of historical data and use up to 60 months of data in the estimation. Most of the estimates use 60 months of data. As an example, in order to obtain expected and idiosyncratic returns for COKE from January 2000 to December 2000, we first estimate equation (2) using monthly returns from January 1995 to December 1999. Then using the estimated coefficients from equation (2) and monthly factor returns from January 2000 to December 2000, we use equation (3) to compute the expected and idiosyncratic returns as follows:

$$Expected\ Return_{ijt} \equiv \hat{R}_{jit} = \hat{\propto}_{ijt} + \hat{\beta}_{ijt}^{M} \times MKT_t + \hat{\beta}_{ijt}^{SMB} \times SMB_t + \hat{\beta}_{ijt}^{HML} \times HML_t + \hat{\beta}_{ijt}^{MOM} \times MOM_t + \hat{\beta}_{ijt}^{IND}(\bar{R}_{-ijt} - RF_t) \quad (3)$$

$$Idiosyncratic\ Return_{jit} \equiv \hat{\eta}_{ijt} = R_{jit} - \hat{R}_{jit}$$

Here the letters with hats indicate estimated parameters. To obtain the expected and idiosyncratic risk of 2001, we repeat the same process by updating the estimation sample from January 1996 to December 2000 and use the estimated betas for 2001 returns. This process generates new beta estimates each calendar year.

Understanding the importance and relevance of this instrument is crucial for accepting the inferences made in this study. The return shock, $\hat{\eta}_{ijt}$, obtained from the above model is the return of the firm after removing all known sources of systematic variation (i.e., exposure to market, size factor, book-to-market factor, and momentum factor). To the extent that the Fama-French and Carhart factor models explain the cross-section of stock returns, the residuals obtained from this model for any firm *i* should be purely firm-specific and uncorrelated with those of any other firm *k* (≠ *i)*. Our model goes even further and augments the four-factor model with industry average excess return ($\bar{R}_{-ijt} - RF_t$) to remove any remaining correlation among the firms in the industry.

Table 1 presents summary statistics for the estimated factor regressions. The average (median) number of months per rolling regression over the year is 54 (60). The majority of the regressions have a full five-year (60 month) window. The R-squared seems reasonable with a mean of .307 and a median of .288. The factor regressions load positively on market, size, and book-to-market factors and negatively on the momentum factor. Industry beta has the smallest load in absolute terms, which suggests that the four factors are successful in removing most of the systematic variation in the stock returns. The average idiosyncratic return is roughly 10 basis points.[8]

For each firm *i*, we calculate the annual return shock by taking the geometric average of the monthly idiosyncratic returns obtained this way. Idiosyncratic risk is the standard deviation of monthly return shocks for the year. Finally, we obtain averages of the annual return shocks and idiosyncratic risks for firm *i*'s peers by averaging these variables across all firms in the same three-digit SIC industry, excluding firm *i,* in a given year. We use these peer average equity shocks and risks as instrumental variables for predicting peers' dividend and repurchase policies.

3.2 Relevance and validity of the instruments for peers' dividend and repurchase policies

The conclusions in this paper largely depend on the quality of our two instrumental variables, peers' average stock return shocks and peers' idiosyncratic risk. To be valid, an instrument needs to satisfy two conditions: 1) *relevance criterion*, i.e., it should be strongly correlated with the endogenous regressor, which is peers' dividend and repurchase policies in this study, and 2) *exclusion restriction*, i.e., the instrument should not have a direct effect on the dependent variable, which are firm-specific dividend and repurchase policies in this study.

We first discuss the relevance criterion, i.e., why these instruments predict peers' dividends and repurchase decisions. With regards to dividends, we find that peers' equity return shock and idiosyncratic risk both strongly predict peers' dividend decisions plausibly because these variables contain information about peers' future performance relevant for cash dividends.[9] Specifically, these instruments are strong predictors of peers' future profitability and cash flow volatility, both of which are among the most important determinants of dividends identified by

[8] By construction, the average idiosyncratic return should be zero. It is non-zero due to loss of observations in the data cleaning process.

[9] Leary and Roberts (2014) use only peers' average return shock as the instrument for financial leverage.

previous studies. For example, Fama and French (2001) find that the likelihood of paying dividends increases with profitability. DeAngelo, DeAngelo and Skinner (1996) find that firms tend to increase dividends during periods of earnings growth. Benito and Young (2003), Ferris, Sen, and Yui (2006), and Renneboog and Trojanowski (2005) present similar evidence for UK firms, and Von Eije and Megginson (2008) find similar results among European Union firms. Denis and Osobov (2008) present worldwide evidence that dividends are concentrated among the largest and most profitable firms. Benartzi, Michaely, and Thaler (1997) find that firms that increase dividends in year *t* have experienced significant earnings increases in years *t-1* and *t*, and firms that cut dividends in year *t* have experienced a reduction in earnings in years *t* and *t-1*. On the other hand, cash flow volatility predicts dividends payouts negatively (see, e.g., Bradley, Capozza and Seguin (1998), and Minton and Schrand (1999)) because cash flow uncertainty makes external financing costly. Moreover, the penalty for having to reduce dividends because of cash flow uncertainty also is severe.

Next, we present an analysis that demonstrates how our instruments are related to the variables that are important determinants of dividends. Table 2 presents the results of regressions of peers' average future profitability and cash flow volatility on peers' average idiosyncratic equity shock (*Peer Idios. Equity Shock)* and equity risk (*Peer Idios. Equity Risk*) using firm-fixed effects. Column 1 shows that peers' equity shock [risk] positively [negatively] predicts their future profitability ($Peer\ Profitability_{t+1}$) in a highly significant manner, even after controlling for a host of other variables related to future profitability, *including* current profitability. This finding implies that these two instruments contain information about the market's expectations of peers' future profitability above and beyond the information contained in their current profitability and other characteristics. Columns 2 and 3 show that these instruments also predict peers' profitability up to three years in the future. Finally, in column 4, the dependent variable is peers' average future cash flow volatility ($Peer\ Cash\ Flow\ Risk_{(t+1,\ t+5)}$), calculated as the average standard deviation of cash flows over the next five years. This test uses non-overlapping data using five-year intervals during the sample period. As expected, *Peer Idios. Equity Risk* (*Peer Idios. Equity Shock*) predicts peers' future cash flow volatility positively (negatively) and in a highly significant manner. These results suggest that *Peer Idios. Equity Shock* and *Peer Idios. Equity Risk* contain information about the market's expectation about peers' future profitability and cash flow risk, which are important determinants of dividends. This analysis offers a strong rationale for the relevance of these two variables as instruments for peers' dividend policies.

We expect our instruments to predict peers' repurchase policies somewhat differently. Unlike dividends, repurchases are not viewed as a permanent commitment by a firm, so repurchases are not as strongly dependent on the level of future profitability as dividends are. Rather, due to market timing incentives, firms are more likely to repurchase their stock to exploit potential undervaluation (see, e.g., Dittmar and Field (2015)). Therefore, if positive idiosyncratic stock returns also reflect potential undervaluation and hence lack of market timing opportunities, our first instrument (*Peer Idios. Equity Shock*) should predict peers' repurchases *negatively*. Consistently, Jagannathan, Stephens and Weisbach (2000) find direct evidence that repurchases are followed by poorer market performance whereas dividend increases are followed by good performance. On the other hand, repurchases do involve large cash outflows. So, just like dividend decisions, repurchase decisions likely depend on a firm's ability to maintain stable cash flows in the future. Therefore, firms which expect to have riskier cash flows are less likely to repurchase stocks and save cash for tapping into potential investment opportunities. Hence, we expect that peers' idiosyncratic risk, which we have found to represent peers' future cash flow risk in Table 2, should negatively predict peers' repurchases. Our instrumental variables analysis later on obtains results consistent with these predictions.

Next, we briefly discuss the exclusion restriction on the instruments. For this study, exclusion restriction requires that our two instruments, peer firms' stock returns and risk shocks, should affect firm-specific dividend policies only via their effect on peers' dividend policies. Leary and Roberts (2014) make a convincing case for the exclusion restriction. The idiosyncratic part of stock returns and risks are obtained as the residuals from a Fama-French and Carhart model. This model is well-regarded in the asset-pricing literature for its ability to decompose stock returns into those due to common factors and due to firm-specific shocks. Moreover, we include excess industry return as an additional factor in the model to help remove any industry-specific commonalties in stock returns. Therefore, the residuals obtained from this model are plausibly purely firm-specific. Leary and Roberts (2014) show that these shocks have some desirable statistical properties that support their exogeneity: these shocks are serially uncorrelated and serially cross-uncorrelated, which means that firms' shocks do not forecast future shocks for themselves or for their peers. Moreover, as shown later, our instruments pass the tests of over-identification (e.g., *Hansen's J*), which further supports the validity of our instruments.

4. Data and summary statistics

The primary data on public firms' financials and stock prices come from the CRSP-COMPUSTAT merged database. The full sample runs from 1965 to 2010. Following previous studies (e.g., Leary and Roberts (2014)), we exclude financial (6000=<SIC code=<6999), utilities (4900=<SIC code =<4999) and government entities (SIC code>9000) because these industries are highly regulated. For some additional tests, we obtain product market fluidity data from Hoberg and Phillips's data library, probability of informed trading (PIN) data from Professor Stephen Brown's website, and analyst coverage data from I/B/E/S. The main variables used in this study are described in the Appendix.

Table 3 presents the summary statistics of our final sample of about 98,270 firm-year observations. The final sample consists of about 9,180 unique firms over our 46-year sample period. There are about 240 industries identified by three-digit SIC codes in our sample. The typical industry has a median of 14 firms and a mean of 32 firms. To mitigate the influence of outliers, all continuous variables are winsorized at the upper and lower 0.5%. The table provides summary statistics for firm-specific variables and peer average variables separately. About 47% the firm-years pay cash dividends, and 35% of firms repurchase shares. Each year, about 3.5% of last year's non-payers start paying dividends. The amount of dividend (share repurchase) represents about 1% (1.2%) of assets, on average, which makes the mean total payout (the sum of the former two) about 2.2% of total assets. The average annual equity return shock is -4%, which is different from 0 mainly because the return shocks are annualized by compounding the monthly shocks.[10] The standard deviation idiosyncratic monthly return is 13.2%. The distributions of other variables are similar to those in the previous literature. Not surprisingly,

[10] Note that while the *sum* of the 12 monthly idiosyncratic returns should be zero, the *compounded* return need not be zero.

peer firm averages for all the variables are similar to individual firm averages, but the standard deviations of peer firm averages are consistently lower than those of individual firms.

5. Peer effects on payout policies

In this section, we present and discuss the results obtained from our regression analysis. We begin with some baseline models. Then we proceed to our instrumental variables techniques to examine if peers have a causal influence on a firm's payout decisions.

5.1 Decision to pay dividends or to repurchase

Table 4 presents the results from a battery of regression analyses of whether a firm's decisions to initiate and pay dividends or to repurchase shares are influenced by the corresponding decisions of its peers. We start with an analysis of the decision to pay a dividend, and then focus on the dividend initiation decision.[11] The main dependent variable for columns 1 and 2 is a dummy variable indicating whether a firm pays cash dividend in a given fiscal year (*Dividend Payer*). From columns 3 to 5, the dependent variable is whether a firm starts paying dividends (*Dividend Initiation*). The main explanatory variable of interest in columns 1 through 5 is the fraction of peer firms who are dividend payers (*Peer Div. Payers*). We use different variations of the instrumental variable Probit (IV-Probit) regressions to estimate a potential causal effect of peers on the dividend payment decision. The control variables include a number of firm characteristics identified in the literature as important predictors of dividend decisions. For example, we control for future growth opportunities by including size, market-to-book ratio, sales growth, and R&D expenses (see, e.g., Grullon and Michaely (2002), Fama and French (2002) and Grullon, Paye, Underwood, and Weston (2009)). Likewise, we include the ratio of retained earnings to book equity (RE/BE) to control for the life cycle stage of the firm (DeAngelo, DeAngelo and Stulz (2006)). Similarly, we include the firm's current profitability and cash flow volatility to control for cash flow risk.

[11] While most firms do not stop paying dividends once they start, some do. In our sample, about 4 percent of dividend payers omitted dividends at some point and 3.5 percent of non-payers initiated dividends. This analysis captures the firms' choice each year between retaining cash and distributing dividends in such cases.

The dependent variable, *Dividend Payer,* is a binary variable, so we estimate an instrumental variable probit (IV-Probit) model. Column 1 shows results from the first stage of an IV-Probit model, in which the dependent variable is *Peer Div. Payers* and the instruments are lagged peers' idiosyncratic return shocks (*Lag1(Peer Idios. Equity Shock))* and lagged peers' idiosyncratic risk *(Lag1(Peer Idios. Equity Risk))*. As expected, the results reveal that the former (latter) variable predicts peers' dividends significantly positively (negatively), even after controlling for a number of other important determinants of dividends. Column 2 shows the second-stage of the IV-Probit model, in which the fitted value of *Peer Div. Payers* from the first stage (*Instrumented Peer Div. Payers*) predicts the firm-specific dividend decision. Consistent with our hypothesis, *Instrumented Peer Div. Payers* obtains a positive and statistically highly significant coefficient in explaining a firm's decision to pay dividends. The estimated marginal effect of *Peer Div. Payers* on the probability of a firm paying dividends, when other variables are kept at their means, is 0.26 ($p<0.01$). This estimate suggests that compared to a firm with no dividend paying peers, a firm with all dividend paying peers is 26% more likely to pay dividends. Clearly, this is an economically significant relation. Moreover, both instruments are individually and jointly significant at 1% levels. So our instruments are relevant in explaining the fraction of peer firms which pay cash dividends each year. These results enable us to conclude that peers' policies about whether to pay dividends influence a firm's own such a decision.

Dividend policies are sticky, which raises the question whether these results are simply an artifact of persistent dividends, or whether peers actually influence the dynamics of a firm's dividend payments. To address this issue, we next examine the effect of peers' dividend-paying decisions on a firm's decision to start paying dividends (*Dividend Initiation*). This analysis is conducted on the sample of firms which did not pay dividends in the previous year. As shown in column 3 of Table 4, the second stage IV-Probit model obtains a positive coefficient on *Instrumented Peer Div. Payers*, which is statistically significant at the 5% level in predicting firm-specific *Dividend Initiation*. [12] The result implies that firms are more likely to initiate dividends if more of their peers pay dividends. The estimated marginal effect of *Peer Div. Payers* on the probability of *Dividend Initiation*, when other variables are kept at their means, is 0.012 ($p<0.10$). This suggests that compared to a firm with no dividend paying peers, a firm with

[12] The first stage results are similar to those in column 1, so they are not reported to save space.

all dividend paying peers is 1.2% more likely to initiate dividends. This impact is economically quite significant considering that the unconditional rate of dividend initiation is merely 3.5%.

Since firms can distribute cash back to investors either by dividends or share repurchases, an important question is whether peer influence on dividend initiation is equally important for firms which repurchase shares as a way of paying back the stockholders. To answer this question, we re-estimate the instrumental variable regressions of dividend initiation separately among the sample of non-repurchasers (column 4) and repurchasers (column 5) based on whether they bought back any stock last year. Clearly, peer influence on initiating dividends is concentrated among firms which do not repurchase shares. This is an important finding because dividend initiations are perhaps one of the most important decisions in a firm's life-cycle. Our finding that some firms can deflect peer pressure to initiate dividends suggests that studies that focus on dividend paying firms only (e.g., Popadak (2017)) may overestimate the importance of peer effects on firms' dividend policies.

Next we analyze whether firms are also influenced by their peers' decision to repurchase shares, and whether such influence is equally important for dividend payers and nonpayers. Analysis of repurchase decisions, which are similar to those of the dividend paying decisions, are presented in columns 6 through 9. Column 6 is the first stage of the IV-Probit regression, in which the dependent variable is the fraction of peers which repurchase shares in a given year (*Peer Repurchasers)* and the instrumental variables are peers' average idiosyncratic returns and risks (*Lag1(Peer Idios. Equity Shock)* and *Lag1(Peer Idios. Equity Risk))*. As we hypothesized in section 3.2, both of our instruments predict *Peer Repurchasers* negatively and significantly so these instruments are strong predictors of peers' decisions to repurchase stocks. Column 7, the second stage of IV-Probit regression, shows that the instrumented *Peer Repurchasers* predicts a firm's decision to repurchase shares (*Repurchaser*) positively and statistically significantly. Estimated marginal effect of *Peer Repurchasers,* evaluated when other variables are kept at their means, is 0.16 ($p<.010$). In terms of economic significance, this result suggests that a firm with all peers repurchasing is 16% is more likely to repurchase shares itself, compared to a firm with no peers that repurchase.

Our next two tests are aimed at analyzing whether there is heterogeneity in peer influence in payout policy based on whether or not a firm also pays dividends. Unlike in the dividend initiation decision, we find that peer influence in share repurchases is more pronounced among firms which also pay dividends as shown in columns 8 and 9. This result may be because firms tend to repurchase shares out of temporary, non-operating cash flows, while they pay dividends out of permanent, ongoing cash flows (see Jagannathan et. al. (2000)). The cash flows of non-dividend payers are more likely to be temporary. So, for distributing them via repurchases, peer effects in repurchases may be of second order importance compared to the desire to dodge initiating dividends. On the other hand, for firms with permanent cash flows (i.e., dividend payers), the decision to do repurchases is more susceptible to peer influence.

Overall, this analysis shows that a firm's decision on whether to pay dividends or to repurchase shares is significantly influenced by the corresponding policies of its peers. Only those firms which do not repurchase shares are likely to follow peers and initiate dividends. However, dividend paying firms are more likely to mimic peers' share repurchase decisions.

5.2 Amount of payout

Our analysis so far finds a strong and plausibly causal effect of peers on a firm's decision on whether to start paying dividends and to repurchase shares. In this section, we analyze whether peers also influence firms' decisions about the amount of dividends and repurchase. Anecdotal evidence suggests that firms benchmark the amount of dividends they pay to the levels of their peers' dividends.[13] An analysis of peer influence on the amount of dividend payout is especially interesting because practitioners, as well as academics, use dividend payout ratios as an important metric for comparative valuations (e.g., Graham and Kumar (2006)).

We employ a variety of models and variables to analyze different methods of payouts. We obtain our main dividend payout variable by scaling annual cash dividends by total assets

[13] "*We believe that a best-in-class dividend policy should be based on the five CLIMB dimensions: capital planning, long-term sustainability, investor preferences, materiality and benchmarking to peers*." - J.P Morgan (2011), Dividends: the 2011 Guide to Dividend Policy Trends and Best Practices.

(*Div/Assets*). Following Allen and Michaely (2003) and Li and Zhao (2008), we normalize the amount of dividends by book assets, rather than by market capitalization or earnings, to ensure that the results are not influenced by stock price variations or affected by firms with negative earnings.[14] To parallel dividend payout measure, we calculate repurchase payout as the amount of repurchases scaled by total assets (*Repur/Assets*).

Because some firms pay dividends and/or repurchase shares and others do not, all of our payout variables are censored at zero. This feature of the data makes OLS models biased and calls for using Tobit-based regressions, which jointly model the propensity of paying dividends or repurchasing shares, and the amount of such payouts. For robustness, we also employ linear models using the subsample of firms with non-zero dividends or repurchases. Table 5 presents regression results regarding dividend payouts. The analysis summarized in panel A includes the full sample of both dividend payers, nonpayers, repurchasers and non-repurchaers. As before, we employ instrumental variable techniques to examine if there is any causal effect of peers' payout policies on firm-specific policies. As in section 5.1, the two instrumental variables for *Peer Div/Assets* and *Peer Repur/Assets* are *Lag1(Peer Idios. Equity Shock)* and *Lag1(Peer Idios. Equity Risk)*. Column 1 of panel A shows the estimates from the first stage of an instrumental variable Tobit (IV-Tobit) model for dividend payouts. As expected, this first-stage regression obtains a positive [negative] and highly significant coefficient on peers' average return shocks [risks] in predicting *Peer Div/Assets*. Next, the second stage estimate (column 2) obtains a positive and significant coefficient of 0.58 on *Instrumented Peer Div/Assets* in explaining a firm's dividend payout. These results convey that peer firms' payout ratios have a positive causal effect on firm-specific dividend payout ratios. Specifically, the coefficient estimate of 0.58 suggests that an increase in *Peer Div/Assets* ratio by 10% leads a firm to increase its own *Div/Assets* ratio by about 5.8%. Clearly, in addition to being statistically significant, this effect is also economically substantial.

[14] It seems especially important to avoid stock price as the scaling factor in this study because our instrumental variables are based on stock returns. For robustness, in unreported tests we also use other measures such as cash dividends scaled by either total revenue (*Div/Sales*) or cash flows (*Div/CashFlow*). *Div/CashFlow* is similar to the dividend payout ratio variable popular in finance textbooks, except that the scaling variable is cash flows instead of accounting profits. We exclude observations where *Div/CashFlow* is negative because of negative cash flows.

We next estimate IV-Tobit regressions using repurchase to assets ratio (*Repur/Assets*) as an alternative measure of payout. As expected, the first stage of IV-Tobit regression reported in column (3) obtains negative and significant coefficients on both of our instruments in predicting peers' average repurchase ratio (*Peer Repur/Assets*). In column (4), the second stage regression obtains a positive and statistically significant coefficient of 1.659 on *Instrumented Peer Repur/Assets* ratio in predicting a firm's own repurchase ratio. Specifically, the coefficient estimate suggests that an increase in *Peer Repur/Assets* ratio by 10% leads a firm to increase its own *Div/Assets* ratio by about 16.6%. Finally, we analyze peer influence on total payout, calculated as the sum of dividends and repurchases scaled by total assets (*Total Payout*). As shown in column 5 (second stage of IV-Tobit), consistent with the separate analysis of each payout variable, the *Instrumented Peer Total Payout* ratio positively predicts the firm-specific *Total Payout* ratio in a highly significant manner.

It appears that firms mimic their peers' payouts in the form of both dividends and repurchases. However, as we will see later, our cross-sectional tests find some significant differences in firms' mimicking behavior on dividends and repurchases based on firm characteristics and market conditions. Therefore, we continue to analyze these decisions separately in subsequent sections.

Next, we estimate the instrumental variable regressions of both type of payouts within the subsample of firms with positive cash dividends or repurchases. These tests examine if the evidence of peer effects on payout ratios survives among payers only, and is not an artifact of a discrete jump from zero to a positive payout. Because these samples now do not have a point mass of 0 in the distribution of dividend payouts, we use linear two-stage least squares (2SLS) models for the instrumental variable analysis. Table 5, panel B presents the second stages of the 2SLS regressions for our two payout variables. The results are qualitatively similar to those obtained from the full sample using IV-Tobit models, but the point estimate of the peers' repurchase ratio is smaller than in Panel A.

Model diagnostics also obtain desirable results. In all cases, different variations of weak instrument tests obtain significant test statistics, which convey that our instruments are strong predictors of peers' payout variables. Furthermore, in the analysis in panel B, which uses linear

2SLS in which over-identification tests are feasible, the *Hansen's J* statistic is insignificant in both models. So these instruments appear to satisfy the exclusion restriction and appear to be valid for the analysis of both dividends and repurchases. Overall, these features of our analysis strongly suggest that peer firms' payout ratios have a causal effect on a firm's own payout ratios.

Next we analyze if peer influence on the amount of payout is different for firms that use and do not use the alternative payout method. In other words, we ask whether peer influence on the amount of dividends (repurchases) is larger or smaller among firms which also repurchase shares (pay dividends). Earlier, we have found that peer influence on dividend initiation is nonexistent for firms which repurchase shares. However, we do not necessarily expect such heterogeneity in the amount of dividends once a firm decides to pay dividends. Initiating dividends is a much more significant decision than the amount of dividends. As shown in panel C, columns 1 and 2, peer influence on the amount of dividends is roughly similar for share repurchasers and non-repurchasers. Columns 3 and 4 show that peer influence on the amount of repurchases is somewhat stronger for dividend paying firms. The analysis of both the decision to repurchase in Table 4 and the amount of repurchases in Table 5, panel C suggests that mimicking repurchases is somewhat more prevalent among dividend payers. Therefore, it is likely that some dividend payers also do occasional repurchases, influencing their peers to follow suit.

We next present some robustness checks of our main findings. One concern is that the observed relation between a firm's payout and its peers' payout may be due to all firms in an industry responding to time-varying dividend premiums. When the dividend premium is high, all firms pay more dividends, and vice versa. This possibility should be largely controlled for by our instrumental variables analysis because IVs plausibly contain purely firm-specific news so they should be uncorrelated with any market- or industry-wide factors (recall that our model for computing the idiosyncratic stock return shock controls for peer average return). Moreover, we include year fixed effects that largely control for any time-varying dividend premium.

Nevertheless, a lingering concern is that the dividend premium may vary across industries, which we not have accounted for adequately. We deal with this issue in several other ways. First, we calculate the value-weighted dividend premium every year following the approach used by Baker and Wurgler (2004) and Li and Lie (2006)). Based on the time-series median of the annual dividend premiums, we split our sample by high and low dividend premium years, and re-estimate our regressions separately in the two subsamples. As presented in columns 1 and 2 of Table 5, panel D, we find that peer influence on dividend exists during both high and low dividend premium years but it is stronger during *low* dividend premium years.[15] This result may reflect the possibility that during years of high dividend premiums, firms have an incentive to pay higher dividends to cater to investor preferences, so they are less affected by what peers do. That is, in high dividend premium years, investors' preference for dividends dominates peer effects. On the other hand, dividend payment becomes more discretionary during low dividend premium years, which makes firms more susceptible to peer effects. Similarly, as shown in columns 5 and 6, peer influence on repurchases only exists significantly in the years with low dividend premiums. One interpretation of this finding is that during low dividend premium years, firms have more discretion not only over how much dividend to pay, but also over whether to pay dividends or repurchase shares, making them more prone to peer effects. Second, we control for potential industry variation in dividend premium by including year x industry (Fama-French 48) fixed effects in the models.[16] Columns 3 and 7 of Panel D show the second stage of 2SLS models, in which peer influence continues to remain positive and significant both for dividends and repurchases, respectively, even after controlling for these fixed effects. Finally, we employ firm-fixed effects models which can control for any time-invariant firm-specific heterogeneity (including exposure to industry-level dividend premiums). Columns 4 and 8 show these results from the second stages of 2SLS, in which peer influence continues to be significant for the levels of both dividends and repurchases. These results collectively indicate that the observed peer effect is unlikely to be entirely driven by variation in aggregate dividend premiums.

To summarize, we consider both dividend and repurchase amounts and employ a variety of estimation models to examine peer effects on payout policies. Collectively, the results

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[15] Consistent with the prior literature, we find that unconditionally, firms are more likely to pay dividends in high premium years than in low premium years (56% vs. 35%).

[16] Here we use the Fama and French (1993) 48-industry classification even though our peers are defined at the 3-digit SIC levels. We do this for two reasons. First, there are 240 unique SIC codes and 45 years in our sample. It is unlikely that dividend premium will vary at such a granular level of industry classification. Moreover, combining 3-digit SIC with years leads to more than 10,000 fixed effects and potentially over-parameterizes our models.

strongly suggest that a firm's decisions about how much to pay in dividends and repurchases are significantly influenced by the decisions of its industry peers. While peer influence on dividends seems largely independent of aggregate dividend premiums, mimicking of repurchases is prevalent only in years with low dividend premiums.

6. Reasons behind peer effects in payouts

In this section, we attempt to identify the reasons why firms mimic their peers' payout policies. Based on an extensive review of the literature on firms' imitation behavior, Lieberman and Asaba (2006) propose two broad reasons why firms imitate each other: 1) rivalry-based theory 2) information-based theory. They also provide a roadmap for empirical tests that may distinguish between these two motives. In essence, their framework suggests that firms likely imitate peers to maintain competitive parity or to limit rivalry, as predicted by the rivalry-based theory, if all of the following three conditions are met:[17]

A. Firms compete in same market or niche, *and*
B. they are of similar size or resource, *and*
C. information environment is *not* highly uncertain

If any of the above conditions are not met, mimicking may be consistent with an information-based theory, which suggests that firms imitate their better-informed peers. For instance, younger firms may follow their older peers if they believe the latter are better informed about product markets and investors. In the next sections, we attempt to test the role of these three conditions on peer influence on dividends.

6.1 Product market competition

Regarding condition *A*, in a less competitive environment, product differentiation is relatively easier. So there is less need to imitate other firms' payout decisions to signal a firm's own quality to investors. For instance, despite sitting on a huge cash balance, Apple *Inc.* did not pay dividends for many years, while many of its competitors did. However, investors consistently placed high valuations on Apple mainly because of the perceived high quality and

[17] See, Lieberman and Asaba (2006, p. 376, Fig. 1).

uniqueness of its products. On the other hand, increased competition with more players and more homogeneous products makes product differentiation difficult. This makes mimicking payouts more important for signaling quality and competing in the capital market.

By construction, peers in our sample are firms that share the same three-digit SIC code, which is quite a narrow industry classification. So firms within each of these industries are likely to compete with each other in similar markets. But the degree of competition can vary across the industries. So we conduct one more empirical experiment to test the merit of condition *A*. First, from Hoberg and Phillips's (2016) website, we obtain data on firms' exposure to product market competition based on how similar a firm's products are to those of its rivals. Hoberg and Phillips derive this measure, known as 'total similarity', based on how firms describe themselves in the product description section of their 10-K filings. The authors show that this classification does a better job of identifying high competition environments and rivals than the traditional industry classifications do. Moreover, this classification allows the set of a firm's competitors to vary over time. We define a firm as facing more [less] intense competition in the product market if the 'total similarity' score for its products is above [below] the median.

Panel A of Table 6 shows the results of our analysis on the subsamples of firms that operate in more and less competitive environments. Each column presents the results from the second stage regressions of an IV-Tobit model. For each payout variable, *Div/Assets* and *Repur/Assets*, the point estimate on the instrumented peer average is significantly larger among more competitive firms than among less competitive firms.[18] This result favors condition *A* and suggests that peer effects on payouts are stronger among firms that compete more fiercely in the product markets.

[18] Ideally, we would also want to test if the coefficient estimates across the two subsamples are *statistically* different from each other, which would be a straightforward exercise for linear models. However, these results are from second stages of nonlinear IV Tobit models, in which reliable tests for such comparisons are not readily available. Therefore, we focus on the differences in economic magnitude.

6.2 Who mimics whom? Leaders and followers based on size, age and asset tangibility

This section presents an analysis aimed at testing the merit of condition *B*. The rivalry-based theory predicts that in order to maintain their competitive parity with peers, firms would mimic the payout policies of peers which are similar to them in size, age and ease of valuation. On the other hand, the information-based theory predicts that firms that are smaller, younger and harder-to-value would follow the policies of larger, older and easier-to-value firms, which are likely better-informed about product and capital markets. We examine which of these theories is supported by the data. We partition the sample into three terciles by firm size, based on market capitalization each year. We define *smaller firms* as the firms in the bottom tercile and *larger firms* as the firms in the top tercile of the size distribution. We then construct the peer average payout variables and the two instrumental variables separately within smaller or larger peers. In the same fashion, we define *older*, *younger*, *less tangible* and *more tangible* firms and construct the payout ratios and the instrumental variables for each peer group separately.

In the first two columns of Table 6, panel B, we estimate the regressions of dividend payouts (*Div/Assets*) only among the subsample of smaller firms. We compute peer average dividend payout and the instrumental variables using the subsample of smaller (larger) peers in column 1 (2). The goal is to examine whether small firms mimic the dividend decisions of their smaller industry peers or larger ones. Similarly, in columns 3 and 4, we estimate the regressions only within the subsample of larger firms. Again, we calculate the peer payouts by averaging the payout ratios of the smaller (larger) peers in column 3 (4). The aim is to examine whether larger firms mimic the dividend decisions of their smaller or larger peers in the industry. We follow a similar approach to analyze younger firms in columns 5 and 6, older firms in columns 7 and 8, and less/more tangible firms in columns 9 through 12. Columns 13 to 24 repeats this analysis for *Repur/Assets* as the dependent variable.

Each column in Table 6, panel B shows results of second-stage regressions from IV-Tobit models. In columns 1 and 2, the coefficient on small peer firms' instrumented average payout ratio (*Small Peers' Instrumented Div/Assets*) is positive and much larger in magnitude than that on the large peers' ratio (*Large Peers' Instrumented Div/Assets*) in predicting a smaller firm's dividend payout. The implication is that smaller firms are more influenced by dividend decisions of other smaller firms. Columns 3 and 4 present the results of large firms' decisions to follow peers' policies. We find that *Small Peers' Instrumented Div/Assets* has no significant effect on large firms' payout, but *Large Peers' Instrumented Div/Assets* has a significant positive effect on large firms' payouts. So it appears that larger firms are influenced by the dividend decisions of their larger peers only. The strongest peer effect (0.552) seems to run from smaller peers to smaller firms. Similarly, the results in columns 5 through 8 reveal that younger (older) firms are more strongly influenced by the dividend decisions of their younger (older) industry peers. The point estimate is the largest (0.409) for the younger peers' effect on younger firms. Finally, columns 9 through 12 analyze leaders and followers in terms of ease of valuation, measured by their asset tangibility (PP&E/Assets ratio). We find that dividend policies of less tangible firms (PP&E/Assets ratio < Median) are influenced by both types of peers: more and less tangible. On the other hand, more tangible firms are influenced by the decisions of their more tangible peers only.

Columns 13 through 24 present the results of corresponding analyses for the amount of repurchases. In general, peer influence in repurchase amounts exists mainly among larger, older and more tangible firms, which mimic the actions of their larger, older and more tangible industry peers. Unlike dividend payout decisions, smaller, younger and less tangible firms do not mimic the amount of repurchases of their peers.

Overall, it appears that firms' dividend decisions are mainly influenced by the industry peers in their own size and age cohorts. The magnitude of this influence seems to be the largest among smaller and younger firms. For repurchases too, peer influence generally seems to exist among their own cohorts. These findings support the rivalry-based theory, rather than the information-based theory, of peer influence in dividends.

6.3 Information environment

This section explores the merit of condition *C*. If dividend mimicking is motivated by information, rather than rivalry, this behavior should be more prevalent in environments with higher information uncertainty (Lieberman and Asaba (2006)). In this section, we examine if peer influence on dividends is more pronounced among firms with high information uncertainty.

We use two variables as measures for information uncertainty: 1) industry average analyst coverage, computed as the average monthly number of earnings forecasts a firm in the industry receives over the fiscal year, and 2) industry average of the probability of informed trading (PIN).[19] We consider a firm to have a more [less] uncertain information environment if the firm's industry average PIN is higher [lower] than the median industry average PIN or if the industry average number of analyst forecasts is below [above] the median.

Panel C of Table 6 presents the results of regressions estimated on subsamples of firms with higher or lower information uncertainty. Using each measure, we find that the peer effect on dividend is more pronounced among firms that operate in *better* information environments, i.e., firms in industries that are followed by more analysts and where stock trading conveys less private information (lower PIN). We also find some evidence that peer effects in repurchases are higher in *better* information environments, i.e., firms in industries that are followed by more analysts. These findings do not suggest that peer influence in payouts is greater in more uncertain environments and do not support the information-based theory of imitation.

Overall, these results do not provide strong support for traditional signaling theories of dividend. While smaller, younger and harder-to-value firms exhibit mimicking behavior, which is consistent with a signaling motive, larger, more established and easier-to-value firms do it too. Moreover, we find no evidence that mimicking is more pronounced in the presence of *higher* information uncertainty. This result contradicts the prediction of signaling theory that mimicking should be more prevalent among firms for which the benefit of signaling should be larger due to greater information asymmetry.[20]

[19] Analysts are among the most important information producers in financial markets. A number of prior studies show that financial analyst research is an important channel through which information about a firm is revealed (see, e.g., Womack (1996), Barber et al. (2001), Gleason and Lee (2003), Jegadeesh et al. (2004), Kelly and Ljungqvist (2012), and Adhikari (2016)). Thus, greater analyst following implies a better information environment. Similarly, a large literature finds that PIN measures information asymmetry between firms and investors. For example, a larger PIN reflects a poorer quality of financial disclosure (see, e.g., Brown and Hillegeist (2007)). We use industry average analyst coverage and PIN because testing rivalry-based vs. information-based theories of mimicking requires a measure of the overall information environment within an industry.

[20] This finding parallels Leary and Michaely's (2011) finding that dividend smoothing is more prevalent in firms with lower information asymmetry.

7. Additional analyses

This section presents the results of three tests that shed additional light on the causes and consequences of peer influence in payouts.

7.1 Role of financial constraints

We expect peer influence on dividends to depend on financial constraints. Constraints on dividend payouts imposed by financial troubles and difficulty in raising external capital to finance investments should dominate the incentive to imitate peers' payout. This should especially be true with dividends, which conveys a stronger commitment by the firm to the market, than repurchases. We use a firm's credit rating by S&P as a measure of its financial constraints following Farre-Mensa and Ljungqvist (2015), whose findings suggest that not having a credit rating does a better job of identifying financial constraints compared to other traditional measures of financial constraints.[21]

Panel D of Table 6 presents the results of regressions estimated on subsamples of firms with and without a long-term credit rating from S&P. We find that the peer effect on dividend is more pronounced among rated firms, which have better access to external capital. On the other hand, peer influence in repurchases is virtually indistinguishable among rated and unrated firms. The importance of financial constraint in dividend mimicking and its lack in repurchase mimicking are consistent with the findings of Jagannathan, Stephens and Weisbach (2000) that firms pay dividends out of their permanent cash flows but repurchases out of temporary cash flows.

[21] We stick to the absence of a credit rating as a measure of financial constraint for two reasons. First, Farre-Mensa and Ljungqvist (2015) find that the five popular traditional proxies of financial constraint (i.e., having a credit rating, paying dividends, and the indices of Kaplan-Zingales, Whited-Wu, and Hadlock-Pierce) do not adequately predict a firm's ability to raise external capital. Their empirical findings suggest that having or not having a credit rating does a somewhat better job of predicting financial constraint, even though it may proxy for the stage of a firm's life cycle. Second, the last three indices are linear combinations of a firm's age, size and leverage, some of which we have already used to partition the sample for size and age leaders and followers.

7.2 Trends in peer influence

We first examine how peer influence on dividends and repurchases has changed over time. This analysis extends the analyses by Fama and French (2001a), who find that the propensity to pay dividends has decreased over time and bottomed-out in the 1990s; DeAngelo, DeAngelo, and Skinner (2004), who find that the overall amount of dividends has actually increased, but has become concentrated among larger and profitable firms; and Julio and Ikenberry (2004), who argue that dividend initiations and increases have picked up in the early 2000s. We explore whether the trends in peer influence in payouts are consistent with the intertemporal patterns in aggregate dividend payouts and repurchases found by previous studies.

We estimate our main regressions in subsamples of roughly a decade each: 1965 to 1979 (1970s), 1980 to 1989 (1980s), 1990 to 1999 (1990s), and 2000 to 2010 (2000s). The results of payout using IV-Tobit regressions are presented in Table 7. In Panel A, we find an interesting pattern: the magnitude of peer influence on dividends payout continues to increase until it peaks in the 1990s and declines in the 2000s. Intriguingly, this pattern mirrors Grullon et. al.'s (2011) finding that the proportion of dividend-paying firms bottomed out in the 1990s, then increased slightly in the 2000s.

Panel B reports results of similar analyses of repurchases. Interestingly, the trend in peer influence in share repurchases mirrors the trend in peer influence in dividends. Collectively, this set of results is consistent with the studies of Skinner (2008) and Grullon and Michaely (2002), who show a significant substitution from dividends to share repurchases.

7.3 Market reaction to dividend changes conditioned on proximity to peers

To dig deeper into firms' incentives to follow peers' dividends, we next examine dividend announcement returns as a function of peers' dividends. Specifically, we examine how the market reacts to dividend change announcements by a firm, conditional on where the level of its resulting dividend stacks up relative to its industry peers. To do so, we first calculate the absolute difference between a firm's dividend payout ratios and those of their peers'. Then based on the median of such absolute differences, we partition the sample by whether a firm's dividend payout ratios are close to or far from its peers.

Table 8 presents the regressions of three-day cumulative abnormal returns CAR (-1,+1) around quarterly dividend announcements as a function of changes in firm-level dividend payouts (*Div/Assets*) and whether the payout ratios are close to (Panel A: models 1, 3 and 5) or far from (Panel A: models 2, 4 and 6) industry peers'. In Panel A, columns 1 and 2 show, as expected, that the change in the dividend to assets ratio (Δ*Div/Assets*) positively predicts the market reaction to the change. The marginal effect of this change is slightly larger when the resulting dividend is closer to peer averages (column 1) than when it is further away from them (column 2), though the difference is statistically insignificant, as shown by the chi-squared test in the last row of the panel.

These patterns become more interesting when we partition the samples further by whether there was an increase (columns 3 and 4) or decrease (columns 4 and 5) in the firm-level quarterly payout ratio. Columns 3 and 4 show that when a firm increases its dividend payout ratio, the marginal effect of the change in the payout ratio on the market reaction is much higher if the resulting dividend is closer to peers than when it is further away from them. The coefficient on Δ*Div/Assets* in columns 3 and 4 is 1.645 and 0.674, respectively, and the difference between them is statistically significant at the 1% level. A potential explanation of this difference is that the market considers an increase in dividends to be more sustainable when the resulting payout ratio is closer to its peers' and reacts more positively. In the subsample of firm-quarters with decreases in *Div/Assets,* the marginal effect of Δ*Div/Assets* also positively predicts the market reaction to the change, i.e., larger decreases in dividends lead to larger drops in stock prices. But there is no statistical difference in the market reaction between subsamples where the resulting dividend payout ratio is closer to peers and where it is further away from peers. One possible reason for this asymmetry is that dividend increases are largely voluntary, so investors pay more attention to whether dividend payout is on par with peers. On the other hand, dividend decreases are more likely to be imposed by financial constraints, so being close to peers is less important.

One issue with the analysis relates to time variation in the premium that investors place on dividends. Specifically, firms may increase dividends and try to catch up with industry peers' dividend payouts during years with high dividend premiums. If so, our results in columns (3) and (4) of Panel A may be entirely driven by a more positive market reaction during higher dividend premium years, regardless of whether a firm mimics its peers or not. To address this issue, in

Panel B, we repeat this analysis of dividend increases in the subsamples of high and low dividend premium years, as defined in Panel D of Table 5. Columns (1) and (2) [(3) and (4)] are subsamples of high [low] dividend premium years and dividend increases. Consistent with Li and Lie (2006), the coefficient estimates of dividend change in columns (1) and (2) are higher than those in (3) and (4), respectively, which suggests that the market reaction to dividend increases is more positive in high dividend premium years. However, importantly, within high (low) dividend premium years, the coefficient on Δ*Div/Assets* is significantly larger when the resulting dividend payout is closer to peers than when it is farther away from peers [see columns (1) vs. (2) ((3) vs. (4))]. As shows by the Chi^2-test, these differences in coefficients are also statistically significant. Therefore, it appears that the market views dividend increases more positively if the resulting dividend comes closer to peers, regardless of a general market-wide preference for dividends.

7.4 Do peer effects increase over time following dividend initiation?

Dividends tend to be sticky. Therefore, one interesting question is whether a firm starts following its peers right from the time it initiates a dividend or whether its dividend tends to gradually converge to its peers'. We conjecture that because dividends are quasi-irreversible decisions, firm converge to peer averages gradually, once they are sure that they will be able to keep up with their peers.

We identify the subsample of dividend-paying firms which initiated dividends during our sample period, and analyze their payout ratios after the initiation. Because of these restrictions, the sample size reduces substantially. Our main explanatory variable of interest is the interaction of peer averages of the dividend payout ratio (*Peer Div/Assets*) and the number of years since the firm's dividend initiation (*YearsSinceInitiation*).

Table 9 presents the results in both OLS and 2SLS settings. Column 1 shows the regression using OLS. The control variables (not tabulated) are the same as in the baseline regressions in Table 5. We find a positive and significant coefficient on the interaction of the peer dividend ratio and years since initiation. The main effect of the peer dividend payout ratio is positive, but statistically insignificant. Column 2 shows estimates of the second-stage of the

2SLS regression. The endogenous explanatory variable in the first stage is the peer average of the dividend payout ratio and its interaction with *YearsSinceInitiation*. The instruments we use are our two earlier instruments [Lag1(Peer Idios. Equity Shock) and Lag1(Peer Idios. Equity Risk)] and their interactions with *YearsSinceInitiation*. This model also obtains a positive and statistically significant coefficient on the instrumented interaction of years since dividend initiation and peer dividend ratio. These results suggest that a firm's dividend payout ratio starts to move toward its peer averages gradually over time following dividend initiation.

8. Conclusion

The question of why firms pay dividends has always baffled financial economists. Many firms routinely pay dividends even though it may be an inefficient way to distribute cash to stockholders. Even more puzzling, some firms pay dividends even when they don't have excess cash and have to borrow in order to pay dividends. This paper provides one explanation of these phenomena, namely peer pressure. Our cross-sectional tests show that peer influence on dividends is consistent with the rivalry-based theory of imitation. Peer influence is greater among firms that face more intense product market competition and operate in better information environments. And firms, especially younger and smaller firms, follow peers that are similar to them in size and age. We find parallel and largely consistent results for stock repurchases. Moreover, the ability to repurchase shares enables firms to deflect peer pressure to initiate dividends, but share repurchases do not significantly affect peer pressure on the amount of dividend subsequent to dividend initiation.

Our findings have several implications for research in finance. For instance, if industry peers significantly affect corporate policies, managers may not have as much discretion in setting firm policies as the research on managerial behavior suggests. From an asset-pricing standpoint, if firms deviate from their fundamentals and mimic their industry peers in paying dividends, our findings question the soundness of dividend discount models of equity valuation. From an estimation standpoint, the presence of significant correlations between dividend payouts across firms in an industry suggests the need for clustering of standard errors at the industry level in firm-level dividend analyses. Broadly, this work contributes to a growing literature that investigates whether firms are influenced by their peers when making their financial decisions.

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Appendix: Variable definitions

The following table describes the main variables used in the paper. The peer average variable *X* for any firm *i* in year *t* is defined as the average *X* across all firms, except firm *i*, that share the same three-digit SIC code in year *t*.

Variable	Definition
Dividend Payer	An indicator variable that equals 1 if the firm pays a cash dividend in a given fiscal year, and 0 otherwise. From CSRP
Dividend Initiation	An indicator variable that equals 1 if the firm pays a dividend in the current year but did not pay dividends last year, and 0 otherwise. From CRSP
Repurchaser	An indicator variables that equals 1 if a firm repurchases its stock (PRSTKC>0) in a given year, 0 otherwise: From Compustat
Div/Assets	Cash dividend divided by total assets (AT). From CSRP and Compustat
Repur/Assets	Purchase of Common and Preferred Stock PRSTKC/AT. From Compustat
Total Payout	Div/Assets + Repur/Assets
Sales Growth	Annual change in log of sales. From Compustat
Mkt. to Book	(Market Value of Assets/Book Value of Assets) = (PRCC_F*CSHPRI+DLC+DLTT+PSTKL-TXDITC)/AT. From Compustat
R&D/Assets	R&D Expenditure/Book Value of Assets = max(0,XRD)/AT. From Compustat
Log Firm Age	Log(current fiscal year – fiscal year of first appearance in Compustat). From Compustat
Size (NYSE %ile)	Fraction of New York Stock Exchange firms with market capitalization less than or equal to a given firm in a year
RE/BE	Retained Earnings/Common Equity = RE/CEQ. From Compustat
Profitability	Operating income before depreciation (OIBDP) divided by total assets. From Compustat
Book Leverage	(Debt in Current Liabilities + Long Term Debt)/Assets = (DLC+DLTT)/AT
Cash Flow Risk	Standard deviation of cash flow to assets ratio for up to previous 10 years. Cash flow to assets ratio= (IB+DP-DV)/AT. From Compustat
Idios. Equity Shock	Residuals obtained from regressions of monthly stock returns over a year on estimated loadings on Fama-French and Carhart factors and industry average excess returns, compounded each year. From CRSP
Idios. Equity Risk	Log of the standard deviation of residuals obtained from the above model. From CRSP

Table 1: Factor regression summary

The sample consists of monthly returns of all nonfinancial, nonutility firms in the CRSP-Compustat merged database from 1965 to 2010. This table presents the summary statistics of estimated parameters of factors obtained from the Fama-French (1993) and Carhart (1997) four-factor model, augmented with industry average excess returns as follows:

$$R_{jit} = \alpha_{ijt} + \beta_{ijt}^{M} \times MKT_t + \beta_{ijt}^{SMB} \times SMB_t + \beta_{ijt}^{HML} \times HML_t + \beta_{ijt}^{MOM} \times MOM_t + \beta_{ijt}^{IND}(\bar{R}_{-ijt} - RF_t) + \eta_{ijt}$$

where R_{ijt} refers to the total return for the firm *i* in industry *j* over the month *t*. MKT_t is the excess market return, SMB_t is the size factor, HML_t is the book-to-market factor, MOM_t is the momentum factor, and $(\bar{R}_{-ijt} - RF_t)$ is the excess return on an equally weighted industry (three-digit SIC codes) portfolio excluding firm *i*'s return.

	Mean	Median	S.D.
$\hat{\alpha}_{ijt}$	0.007	0.005	0.062
$\hat{\beta}_{ijt}^{M}$	0.945	0.922	0.792
$\hat{\beta}_{ijt}^{SMB}$	0.903	0.726	1.271
$\hat{\beta}_{ijt}^{HML}$	0.138	0.172	1.306
$\hat{\beta}_{ijt}^{MOM}$	-0.109	-0.081	0.884
$\hat{\beta}_{ijt}^{IND}$	-0.049	0.092	3.651
Obs Per Regression	54	60	11
R^2	0.307	0.288	0.166
Monthly Return	0.014	0.000	0.177
Expected Monthly Return	0.013	0.013	0.191
Idiosyncratic Monthly Return	0.001	-0.008	0.243

Table 2: Relevance of the instrumental variables for dividends

The table shows estimates from regression models in which peer average idiosyncratic equity shocks (*Peer Idios. Equity Shock)* and idiosyncratic volatilities (*Peer Idios. Equity Risk*) predict peers' average future profitability and cash flow risks. The sample consists of all nonfinancial, nonutility firms in the annual CRSP-Compustat merged database from 1965 to 2010. Peer firms are defined as all *other* firms in the three-digit SIC industry code of a firm in a given year. The models include year and firm fixed-effects. The Appendix provides detailed definition of all these variables. To mitigate the influence of outliers, all continuous variables are winsorized at the upper and lower 0.5%. The t-statistics are robust to heteroskedasticity and within firm dependence, and are shown in parentheses. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

	(1) Peer $Profitability_{t+1}$	(2) Peer $Profitability_{t+2}$	(3) Peer $Profitability_{t+3}$	(4) Peer Cash Flow $Risk_{(t+1, t+5)}$
Peer Idios. Equity Shock	***0.022****	***0.012****	***0.010****	***-0.008****
	(30.97)	***(13.90)***	***(10.75)***	***(-6.12)***
Peer Idios. Equity Risk	***-0.022****	***-0.014****	***-0.010****	***0.018****
	(-15.55)	***(-8.99)***	***(-5.28)***	***(8.40)***
Peer Profitability	0.302***	0.146***	0.075***	-0.086***
	(27.49)	(17.61)	(8.66)	(-9.67)
Peer Sales Growth	0.022***	0.011***	0.001	0.006*
	(8.95)	(4.24)	(0.28)	(1.74)
Peer Mkt. to Book	-0.005***	-0.012***	-0.013***	0.005***
	(-6.01)	(-13.13)	(-13.17)	(4.80)
Peer Log(Firm Age)	0.011***	0.017***	0.015***	-0.011***
	(4.61)	(5.62)	(4.81)	(-3.87)
Peer Size (NYSE %ile)	0.001***	0.001***	0.000***	-0.000
	(12.84)	(7.45)	(4.15)	(-0.24)
Peer RE/BE	-0.001*	-0.000	0.000	0.001**
	(-1.65)	(-1.13)	(0.78)	(2.45)
Peer Cash Flow Risk	0.194***	0.161***	0.082***	-0.063***
	(16.31)	(11.91)	(5.05)	(-4.91)
Peer R&D/Assets	-0.646***	-0.685***	-0.777***	0.454***
	(-17.49)	(-15.91)	(-16.16)	(18.91)
Constant	-0.033***	-0.003	0.009	0.180***
	(-2.66)	(-0.21)	(0.53)	(13.07)
N	98270	88813	80539	18323
Adj. R^2	0.333	0.230	0.203	0.366

Table 3: Summary statistics

This table presents summary statistics of the variables used in our main analyses. The sample consists of all nonfinancial, nonutility firms in the annual CRSP-Compustat merged database from 1965 to 2010. The final sample includes about 98,270 firm years, except for dividend initiation which only includes the prior year's dividend non-payers. Peer firms are defined as all *other* firms in the three-digit SIC industry code of a firm in a given year. The Appendix provides detailed definitions of these variables. To mitigate the influence of outliers, all continuous variables are winsorized at the upper and lower 0.5%.

	Mean	S.D.	P25	Median	P75
Firm Specific Factors					
Dividend Payer	0.466	0.499			
Repurchaser	0.354	0.478			
Div. Initiation	0.035	0.183			
Div/Assets	0.010	0.016	0	0	0.016
Repur/Assets	0.012	0.035	0	0	0.004
Total Payout	0.022	0.040	0	0.008	0.027
Sales Growth	0.087	0.28	-0.013	0.085	0.187
Mkt. to Book	1.373	1.277	0.687	0.972	1.542
R&D/Assets	0.035	0.079	0	0	0.035
Log(Firm Age)	2.686	0.625	2.197	2.708	3.178
RE/BE	-0.04	3.71	0.125	0.568	0.809
Size (NYSE %ile)	24.814	29.231	1	11	44
Profitability	0.105	0.16	0.068	0.127	0.184
Cash Flow Risk	0.068	0.096	0.019	0.034	0.072
Idios. Equity Shock	-0.04	0.702	-0.464	-0.083	0.261
Idios. Equity Risk	0.132	0.084	0.076	0.109	0.161
Peer Firm Averages					
Peer Div. Payers	0.435	0.282	0.176	0.4	0.667
Peer Repurchasers	0.340	0.187			
Peer Div/Assets	0.009	0.008	0.003	0.007	0.014
Peer Repur/Assets	0.011	0.012	0.003	0.008	0.015
Peer Total Payout	0.020	0.013	0.012	0.017	0.025
Peer Sales Growth	0.077	0.117	0.02	0.084	0.141
Peer Mkt. to Book	1.42	0.762	0.9	1.222	1.695
Peer R&D/Assets	0.037	0.056	0.001	0.01	0.051
Peer Log(Firm Age)	2.759	0.34	2.526	2.739	2.979
Peer RE/BE	-0.155	1.365	-0.584	0.33	0.626
Peer Size (NYSE %ile)	23.12	14.483	13.369	19.533	29.2
Peer Profitability	0.087	0.1	0.055	0.111	0.149
Peer Cash Flow Risk	0.07	0.056	0.03	0.05	0.093
Peer Idios. Equity Shock	-0.028	0.258	-0.176	-0.04	0.106
Peer Idios. Equity Risk	0.14	0.049	0.104	0.131	0.166

Table 4: Propensity to pay dividends or to repurchase

The sample consists of all nonfinancial, nonutility firms in the annual CRSP-Compustat merged database from 1965 to 2010. The Appendix provides detailed definitions of all the variables. Columns 1 and 6 show estimates from the first-stage of instrumental variables models, in which the dependent variable is the fraction of peers that pay dividends (*Peer Div. Payers)* and fraction of peers who repurchase shares (*Peer Repurchasers*), respectively. In both columns 1 and 6, the instruments are *Lag1(Peer Equity Shock)* and *Lag1(Peer Idios. Equity Risk)*. Peer firms are defined as all *other* firms in the three-digit SIC industry code of a firm in a given year. The dependent variable in column 2 is a dummy variable indicating whether the firm pays a cash dividend in a given year. In columns 3, 4 and 5, the dependent variable is an indicator variable for whether a firm starts paying dividends. Columns 3, 4 and 5 use the sample of last year's non-dividend payers only. In columns 7, 8 and 9, the dependent variable is whether a firm repurchases shares. All the models include year fixed-effects. The t-statistics are robust to heteroskedasticity and within firm dependence, and are shown in parentheses. To mitigate the influence of outliers, all continuous variables are winsorized at the upper and lower 0.5%. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

	(1) Peer Div. Payers (IV Probit: 1st Stage)	(2) Dividend Payer (IV-Probit: 2nd Stage)	(3) Dividend Initiation (IV-Probit: 2nd Stage: Full Sample)	(4) Dividend Initiation (IV-Probit: 2nd Stage: Non-Repurchasers)	(5) Dividend Initiation (IV-Probit: 2nd Stage: Repurchasers)	(6) Peer Repurchasers (IV Probit: 1st Stage)	(7) Repurchaser (IV-Probit: 2nd Stage: Full Sample)	(8) Repurchaser IV-Probit: 2nd Stage: Non-Div. Payers)	(9) Repurchaser (IV-Probit: 2nd Stage: Div. Payers)
Peer firm averages									
Instrumented Peer Div. Payers		*1.090****	*0.532***	*0.926****	*-0.041*				
		(6.65)	*(2.43)*	*(3.22)*	*(-0.12)*				
Instrumented Peer Repurchasers							*0.881****	*0.643***	*1.020***
							(3.50)	*(1.96)*	*(2.56)*
Peer Sales Growth	-0.042***	-0.125*	0.192	0.281*	0.112	-0.060***	-0.005	-0.039	0.066
	(-6.72)	(-1.94)	(1.60)	(1.80)	(0.58)	(-8.94)	(-0.11)	(-0.62)	(0.80)
Peer Mkt. to Book	0.013***	0.075***	0.000	0.010	-0.001	-0.000	0.005	-0.031*	0.056**
	(6.84)	(2.84)	(0.01)	(0.25)	(-0.03)	(-0.25)	(0.33)	(-1.68)	(1.96)
Peer Log(Firm Age)	0.204***	0.163**	0.083	0.022	0.216*	-0.002	-0.128***	-0.189***	-0.104*
	(30.29)	(2.26)	(1.02)	(0.20)	(1.67)	(-0.43)	(-3.66)	(-4.49)	(-1.85)
Peer Size (NYSE %ile)	0.002***	-0.007***	-0.002	-0.004**	0.000	0.001***	-0.004***	-0.001	-0.005***
	(16.62)	(-4.83)	(-1.44)	(-2.16)	(0.10)	(4.09)	(-4.08)	(-1.01)	(-3.93)
Peer RE/BE	0.004***	0.010	-0.017	-0.029**	-0.004	0.003***	-0.006	-0.007	-0.005
	(4.06)	(1.30)	(-1.62)	(-1.99)	(-0.28)	(3.54)	(-1.08)	(-1.07)	(-0.60)

Peer Profitability	0.047***	-0.621***	-0.345	-0.616*	0.030	0.331***	0.040	0.063	0.080
	(2.74)	(-2.90)	(-1.41)	(-1.94)	(0.08)	(19.83)	(0.26)	(0.36)	(0.27)
Peer Cash Flow Risk	-0.362***	-0.300	0.073	0.362	-0.618	0.264***	0.696***	1.089***	0.396
	(-10.24)	(-0.76)	(0.16)	(0.58)	(-0.93)	(8.66)	(2.91)	(3.74)	(0.98)
Peer R&D/Assets	-0.299***	-0.500	0.053	0.270	0.057	-0.244***	-0.113	-0.235	0.247
	(-8.99)	(-0.88)	(0.10)	(0.39)	(0.07)	(-7.91)	(-0.39)	(-0.75)	(0.42)
Firm-specific factors									
Sales Growth	-0.002	-0.330***	-0.086	-0.071	-0.078	-0.002	-0.211***	-0.151***	-0.425***
	(-1.10)	(-9.56)	(-1.59)	(-1.05)	(-0.84)	(-1.40)	(-10.25)	(-6.80)	(-8.98)
Mkt. to Book	0.001	-0.135***	-0.129***	-0.152***	-0.092***	-0.000	-0.015*	-0.018**	-0.044**
	(1.10)	(-7.11)	(-6.06)	(-5.02)	(-3.10)	(-0.55)	(-1.81)	(-2.01)	(-2.32)
R&D/Assets	-0.020	-1.754***	-1.699***	-1.960***	-1.450**	0.008	-0.100	-0.160	0.025
	(-1.55)	(-3.09)	(-3.42)	(-2.76)	(-2.18)	(0.75)	(-0.62)	(-0.98)	(0.05)
Log(Firm Age)	0.010***	0.547***	0.149***	0.184***	0.099**	-0.003*	0.054***	-0.010	0.066**
	(4.56)	(20.20)	(5.92)	(5.67)	(2.53)	(-1.89)	(3.40)	(-0.51)	(2.44)
Size (NYSE %ile)	0.000	0.058***	0.007	0.019***	-0.009	-0.000	0.010***	0.007***	0.046***
	(0.97)	(7.62)	(1.34)	(2.81)	(-1.35)	(-1.06)	(4.67)	(3.40)	(3.94)
RE/BE	-0.000***	0.012***	0.004***	0.004***	0.002**	-0.000***	0.004***	0.005***	0.003***
	(-3.62)	(15.77)	(5.02)	(4.61)	(2.24)	(-4.31)	(9.39)	(8.59)	(4.97)
Profitability	-0.015**	4.550***	2.990***	3.198***	2.536***	0.029***	1.302***	1.168***	1.573***
	(-2.40)	(26.25)	(16.77)	(13.64)	(9.29)	(5.34)	(17.44)	(15.06)	(8.43)
Cash Flow Risk	-0.002	-4.594***	-0.614***	-0.625**	-0.541	0.012	-0.637***	-0.435***	-0.770**
	(-0.17)	(-9.42)	(-2.66)	(-2.01)	(-1.56)	(1.43)	(-6.09)	(-4.15)	(-2.19)
Idios. Equity Shock	0.001	0.063***	0.130***	0.154***	0.097***	-0.001	-0.002	-0.009	0.023*
	(1.46)	(7.64)	(8.66)	(8.06)	(4.00)	(-1.20)	(-0.27)	(-1.12)	(1.84)
Idios. Equity Risk	-0.017***	-0.909***	-0.319***	-0.363***	-0.213***	-0.010***	-0.347***	-0.345***	-0.253***
	(-9.39)	(-37.43)	(-10.45)	(-9.32)	(-4.13)	(-5.64)	(-21.25)	(-17.56)	(-9.70)

Instrumental Variables									
Lag1(Peer Idios. Equity Shock)	*0.030****					*-0.008****			
	(12.25)					*(-2.91)*			
Lag1(Peer Idios. Equity Risk)	*-0.316****					*-0.134****			
	(-50.21)					*(-23.78)*			
N	98270	98270	52413	37231	15182	94728	94728	51642	43086
Wald test of exogeneity (chi^2)		6.14**	0.30	2.94*	1.43		3.21*	0.62	2.34
F-test for the instruments	1268.8***					128.33***			

Table 5: The amount of payout

The sample consists of all nonfinancial, nonutility firms in the annual CRSP-Compustat merged database from 1965 to 2010. The Appendix provides detailed definitions of the variables. The dependent variables are total cash dividend paid in a year (*Div/Assets)* or the amount of repurchases (*Repur/Assets*) scaled by total assets, or the sum of the two ratios *(Total Payout)*). Peer firms are defined as all *other* firms in the three-digit SIC industry code of a firm in a given year. In Panel A, columns 1 and 2 show the first and second stage estimates, respectively, from an IV-Tobit regression with Div/Assets as the main dependent variable. Column 3 and 4 show the first and second stages of an instrumental variables Tobit (IV-Tobit) regression with *Peer Repur/Assets* as the main dependent variable. Column 5 shows the estimate from the second stage of an IV-Tobit regression with *Total Payout* as the main dependent variable (the first stage is not tabulated). The instruments in all the regressions are *Lag1(Peer Idios. Equity Shock)* and *Lag1(Peer Idios. Equity Risk)*. Panel B shows estimates from the second stage of two-stage least squares (2SLS) regressions in the subsamples of dividend-paying firm-years (column 1) and repurchasing firm-years (column 2) only. The models are estimated using the full set of control variables, which are not tabulated. Columns 1 and 2 show estimates from regressions of *Div/Assets* and *Repur/Assets* ratio, respectively, of a firm on the instrumented peer averages of the respective ratio. All the models include year fixed-effects. In Panel C, columns 1 and 2 of show the second stages of IV-Tobit regressions of *Div/Assets* using the subsamples of last year's non-repurchasers (column 1) and repurchasers (column 2) only. Similarly, columns 3 and 4 show the second stages of IV-Tobit regressions of *Repur/Assets* using the subsamples of last year's non-dividend payers (column 3) and dividend payers (column 4) only. In Panel D, columns 1 and 2 show the second stages of IV-Tobit regressions of *Div/Assets* using the subsamples of firm-years with low dividend premium (column 1) and high dividend premium (column 2), based on the time-series median of annual value-weighted dividend premiums; columns 5 and 6 show similar regressions of *Repur/Assets*. Column 3 [7] presents the second stage of a two-stage least squares regression of *Div/Assets* [*Repur/Assets*], which controls for *year x industry* fixed effects, where industry is defined by Fama-French 48 classification. Column 4 [8] presents the second stage of a 2SLS firm-fixed effects regression of *Div/Assets* [*Repur/Assets*]. The t-statistics are robust to heteroskedasticity and within firm dependence (industry clustering in Panel D, columns 4 and 8), and are shown in parentheses. To mitigate the influence of outliers, all continuous variables are winsorized at the upper and lower 0.5%. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Panel A: Payout in full sample (payers and non-payers)

	(1) Peer Div/Assets (IV-Tobit – 1st Stage)	(2) Div/Assets (IV-Tobit – 2nd Stage)	(3) Peer Repur/Assets (IV-Tobit – 1st Stage)	(4) Repur/Assets (IV-Tobit – 2nd Stage)	(5) Total Payout (IV-Tobit – 2nd Stage)
Peer Firm Averages					
Instrumented Peer Div/Assets		*0.580****			
		(6.84)			
Instrumented Peer Repur/Assets				*1.659****	
				(3.98)	
Instrumented Peer Total Payout					*0.806****
					(8.30)
Peer Sales Growth	-0.006***	0.002	-0.005***	0.006	0.004**
	(-23.70)	(1.38)	(-13.67)	(1.60)	(2.01)
Peer Mkt. to Book	0.003***	0.000	0.002***	-0.004***	-0.003***

	(28.57)	(0.72)	(13.75)	(-3.44)	(-4.47)
Peer Log(Firm Age)	0.005***	0.004***	-0.003***	-0.004*	-0.002
	(21.49)	(3.64)	(-11.04)	(-1.73)	(-1.29)
Peer Size (NYSE %ile)	0.000***	-0.000***	0.000***	-0.000***	-0.000***
	(11.01)	(-7.14)	(6.08)	(-5.22)	(-7.94)
Peer RE/BE	-0.000**	0.000**	0.000	-0.001*	-0.000
	(-1.97)	(2.47)	(1.37)	(-1.68)	(-1.61)
Peer Profitability	0.016***	-0.022***	0.033***	-0.029*	-0.033***
	(20.36)	(-5.45)	(32.19)	(-1.86)	(-4.45)
Peer Cash Flow Risk	0.009***	-0.011*	0.024***	0.019	0.015
	(6.55)	(-1.68)	(11.78)	(1.21)	(1.41)
Peer R&D/Assets	-0.006***	-0.010	0.013***	-0.010	-0.013
	(-4.76)	(-0.97)	(6.88)	(-0.58)	(-0.97)
Firm-specific factors					
Sales Growth	-0.000***	-0.014***	-0.000***	-0.021***	-0.022***
	(-4.23)	(-21.63)	(-2.82)	(-14.78)	(-19.61)
Mkt. to Book	0.000	0.002***	0.000	0.004***	0.006***
	(1.59)	(5.74)	(1.20)	(6.64)	(11.10)
R&D/Assets	-0.000	-0.032***	0.001**	0.002	0.017*
	(-0.88)	(-3.28)	(1.98)	(0.15)	(1.83)
Log(Firm Age)	0.000***	0.009***	-0.000***	0.000	0.006***
	(3.59)	(21.17)	(-2.58)	(0.28)	(9.82)
Size (NYSE %ile)	-0.000	0.001***	-0.000	0.001***	0.001***
	(-1.12)	(8.86)	(-1.26)	(4.37)	(4.41)
RE/BE	-0.000***	0.000***	-0.000***	0.000***	0.000***
	(-3.56)	(8.70)	(-4.14)	(10.95)	(17.73)
Profitability	0.000	0.107***	0.002***	0.104***	0.130***
	(0.81)	(33.16)	(6.88)	(19.44)	(27.55)
Cash Flow Risk	0.001**	-0.061***	0.001*	-0.019***	-0.028***
	(2.12)	(-8.14)	(1.71)	(-2.81)	(-4.40)
Lag1(Idios. Equity Shock)	0.000	0.000***	-0.000**	-0.000	0.000
	(1.01)	(2.96)	(-2.41)	(-0.10)	(1.02)
Lag1(Idios. Equity Risk)	-0.001***	-0.015***	-0.000***	-0.017***	-0.023***
	(-9.32)	(-33.43)	(-4.11)	(-18.45)	(-34.53)
Instrumental Variables					
Lag1(Peer Idios. Equity Shock)	*0.0003****		*-0.001****		
	(3.77)		*(-4.77)*		
Lag1(Peer Idios. Equity Risk)	*-0.009****		*-0.004****		
	(-37.93)		*(-13.93)*		
N	98270	98270	98270	98270	98270
R^2 (Pseudo R^2)					
Test of Weak Instruments (chi2)	1514.27***		256.92***		
Wald test of exogeneity (chi^2)		2.51		7.42***	16.55***

Panel B: Dividend (repurchase) mimicking by dividend payers (repurchasers) only

	Div/Assets (2SLS – 2nd Stage)	Repur/Assets (2SLS – 2nd Stage))
Instrumented Peer Div/Assets	*0.516****	
	(5.87)	
Instrumented Peer Repur/Assets		*0.623***
		(2.44)
N	45761	35110
Adj. R2	0.382	0.171
Under-identification Test	539.35***	161.75***
Hansen J (p-value)	0.855	0.801

Panel C: Dividends (repurchases) partitioned by the presence of repurchases (dividends)

	(1) Div/Assets (Non-Repurchasers)	(2) Div/Assets (Repurchasers)	(3) Repur/Assets (Dividend non-payers)	(4) Repur/Assets (Dividend payers)
Peer Firm Averages				
Instrumented Peer Div/Assets	0.541***	0.597***		
	(5.49)	(5.08)		
Instrumented Peer Repur/Assets			1.569***	2.074***
			(2.96)	(3.03)
N	64026	34244	52413	45857

Panel D: Effect of dividend premium and firm heterogeneity in mimicking payouts

	(1) Div/Assets (Low Div Premium)	(2) Div/Assets (High Div Premium)	(3) Div/Assets (Ind*Year Control)	(4) Div/ Assets (Firm FE)	(5) Repur/ Assets (Low Div Premium)	(6) Repur/ Assets (High Div Premium)	(7) Repur/ Assets (Ind*Year Control)	(8) Repur/ Assets (Firm FE)
Peer Firm Averages								
Instrumented Peer Div/Assets	0.729***	0.415***	0.263***	0.191**				
	(6.11)	(4.83)	(4.29)	(2.22)				
Instrumented Peer Repur/Assets					1.508***	1.442	0.644**	0.789***
					(4.24)	(1.03)	(2.51)	(2.92)
Firm Fixed Effects				Yes				Yes
N	60361	37909	97136	97315	60361	37909	97136	97315

Table 6: Heterogeneity in peer influence

The table shows estimates from the second stage of instrumental variable Tobit regressions of *Div/Assets* or *Repur/Assets* on various subsamples. The models are estimated using the full set of control variables, which are not tabulated. In each regression, the peer average dividend ratio and the instrumental variables are calculated within the relevant subsample. Panel A shows regressions for subsamples of firms facing high or low product market competition, measured using Hoberg and Phillips' (2016) total similarity measure. The sample of firm-years with above [below] median similarity measure within a year is defined as that with high [low] product market competition. The sample period is from 1994 to 2010. Panel B presents regressions for subsamples of smaller, larger, younger, older, more tangible or less tangible firms, partitioned based on the median market capitalization, firm age or asset tangibility. The sample period here is from 1965 to 2010. Panel C shows regressions in subsamples of firms with above- or below-median number of industry average analyst coverage or industry average probability of informed trading (PIN). The sample period here is from 1993 to 2010 (1990 to 2010) for sample partitions based on PIN (number of analysts following). Panel D shows regressions in subsamples of firms with or without a long-term credit rating by S&P. All models include year fixed-effects. The t-statistics are robust to heteroskedasticity and within firm dependence, and are shown in parentheses. To mitigate the influence of outliers, all continuous variables are winsorized at the upper and lower 0.5%. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

Panel A: Product market competition and payout mimicking

	(1) Div/Assets (High Product Competition)	(2) Div/Assets (Low Product Competition)	(3) Repur/Assets (High Product Competition)	(4) Repur/Assets (Low Product Competition)
Instrumented Peer Div/Assets	1.289***	0.698***		
	(2.62)	(3.75)		
Instrumented Repur/Assets			1.264**	0.979***
			(2.27)	(2.79)
N	16925	19245	16925	19245

Panel B: Payout followers and leaders based on size, age and asset tangibility

	Smaller Firms		Larger Firms		Younger Firms		Older Firms	
	(1) Div/Assets	(2) Div/Assets	(3) Div/Assets	(4) Div/Assets	(5) Div/Assets	(6) Div/Assets	(7) Div/Assets	(8) Div/Assets
Small Peers' Instrumented Div/Assets	0.552*		0.021					
	(1.88)		(0.94)					
Large Peers' Instrumented Div/Assets		0.168***		0.287***				
		(2.76)		(5.51)				
Younger Peers' Instrumented Div/Assets					0.409***		0.099**	
					(2.88)		(2.15)	
Older Peers' Instrumented Div/Assets						0.077		0.250***
						(1.29)		(5.31)
N	29017	27897	31453	34559	19571	19940	35910	36564

Panel B (cont.): Payout followers and leaders based on size, age and asset tangibility

	Less Tangible Firms		More Tangible Firms	
	(9) Div/Assets	(10) Div/Assets	(11) Div/Assets	(12) Div/Assets
Less Tangible Peers' Instrumented Div/Assets	0.230*		-0.035	
	(1.96)		(-0.90)	
More Tangible Peers' Instrumented Div/Assets		0.165***		0.331***
		(3.10)		(4.93)
N	29813	26806	26177	31703

Panel B (cont.): Payout followers and leaders based on size, age and asset tangibility

	Smaller Firms		Larger Firms		Younger Firms		Older Firms	
	(13) Repur/Assets	(14) Repur/Assets	(15) Repur/Assets	(16) Repur/Assets	(17) Repur/Assets	(18) Repur/Assets	(19) Repur/Assets	(20) Repur/Assets
Small Peers' Instrumented Repur/Assets	0.071		0.405***					
	(0.06)		(2.98)					
Large Peers' Instrumented Repur/Assets		0.004		1.260***				
		(0.03)		(6.12)				
Younger Peers' Instrumented Repur/Assets					0.292		0.259	
					(0.41)		(0.73)	
Older Peers' Instrumented Repur/Assets						0.236		0.889***
						(1.10)		(3.75)
N	29017	27897	31453	34559	19571	19940	35910	36564

Panel B (cont.): Payout followers and leaders based on size, age and asset tangibility

	Less Tangible Firms		More Tangible Firms	
	(21) Repur/Assets	(22) Repur/Assets	(23) Repur/Assets	(24) Repur/Assets
Less Tangible Peers' Instrumented Repur/Assets	-0.486		0.226	
	(-0.76)		(1.21)	
More Tangible Peers' Instrumented Repur/Assets		0.645		0.693**
		(0.36)		(2.30)
N	29813	26806	26177	31703

Panel C: Information environment and peer influence

	Industry average Prob. of Informed Trading (PIN)		Industry average Analyst Coverage	
	Low	High	Low	High
	(1)	(2)	(3)	(4)
	Div/Assets	Div/Assets	Div/Assets	Div/Assets
Instrumented Peer Div/Assets	0.859***	0.474*	0.494***	0.940***
	(4.69)	(1.66)	(2.59)	(4.09)
N	23931	24639	28318	27934

Panel C (cont.): Information environment and peer influence

	Industry average Prob. of Informed Trading (PIN)		Industry average Analyst Coverage	
	Low	High	Low	High
	(5)	(6)	(7)	(8)
	Repur/Assets	Repur/Assets	Repur/Assets	Repur/Assets
Instrumented Peer Repur/Assets	1.308***	1.585**	0.804	1.506***
	(3.60)	(2.34)	(1.01)	(5.20)
N	23931	24639	28318	27934

Panel D: Financial constraints and payout mimicking

	(1)	(2)	(3)	(4)
	Div/Assets (Credit Rated)	Div/Assets (Unrated)	Repur/Assets (Credit Rated)	Repur/Assets (Unrated)
Instrumented Peer Div/Assets	0.988***	0.619***		
	(5.94)	(3.65)		
Instrumented Repur/Assets			1.577***	1.632***
			(3.18)	(3.53)
N	16795	48672	16795	48672

Table 7: Trends in peer influence on payout

The sample consists of all nonfinancial, nonutility firms in the annual CRSP-Compustat merged database from 1965 to 2010. The appendix provides detailed definitions of the variables. Columns 1, 2, 3 and 4 are estimates using subsamples of data, respectively, from 1965 to 1979 (1970s), from 1980 to 1989 (1980s), from 1990 to 1999 (1990s), and from 2000 to 2010 (2000s). The dependent variables in Panels A and B, respectively, are total cash dividend paid in a year divided by total assets and repurchase dollars divided by total assets. Peer firms are defined as all *other* firms in the three-digit SIC industry code of a firm in a given year. All estimates are from the second stage of instrumental variables Tobit (IV-Tobit) regressions. The instruments are *Lag1(Peer Idios. Equity Shock)* and *Lag1(Peer Idios. Equity Risk)*. The models are estimated using a full set of control variables, which are not tabulated. All models include year fixed-effects. The t-statistics are robust to heteroskedasticity and within firm dependence, and are shown in parentheses. To mitigate the influence of outliers, all continuous variables are winsorized at the upper and lower 0.5%. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

	IV-Tobit – 2nd Stage			
	(1) 1970s	(2) 1980s	(3) 1990s	(4) 2000s
	Panel A: Div/Assets			
Instrumented Peer Div/Assets	0.180	0.471***	1.012***	0.651***
	(1.42)	(3.85)	(5.45)	(2.98)
N	19119	23637	27093	28421
	Panel B: Repur/Assets			
Instrumented Peer Repur/Assets	2.972	0.997	1.944**	1.048***
	(1.55)	(0.80)	(2.14)	(3.24)
N	19119	23637	27093	28421

Table 8: Announcement effect of quarterly dividend changes and proximity to peer averages

This table presents regressions of cumulative abnormal returns over three days surrounding quarterly dividend announcements (CAR(-1, +1)). The sample consists of all cash dividend paying nonfinancial, nonutility firms in the annual CRSP-Compustat merged database from 1965 to 2010. Estimates in this table are aimed at examining how the market reacts to corporate dividend changes conditional on where the resulting dividend stacks up relative to industry peer dividends. Peer firms are defined as all other firms in the three-digit SIC industry code of a firm in a given year-quarter. The main explanatory variable of interest is the change in total quarterly cash dividends to assets ratio (Δ*Div/Assets*). To construct the sub-samples in columns 1 and 2, we first calculate the absolute difference between the dividend payout ratio (*Div/Assets*) of a firm and the average ratio for its peers. Then based on the median of such absolute difference, we partition the sample by whether a firm's dividend payout ratio is close to its peers (column 1) or far from them (column 2). Columns 3 and 4 are for the sub-samples of firms which experienced an increase in *Div/Assets* in a given quarter and have dividend payout ratios close to peers (column 3) and far from peers (column 4). Samples in columns 5 and 6 are analogous to those in 3 and 4, except that these are within the subsample of firms which experienced a decrease in *Div/Assets* in a quarter. All models include year and quarter fixed-effects. In Panel B, we partition the subsamples of dividend increases by double sorting on whether the resulting dividend is close to or far from peers (defined above) and high/low dividend premium years (defined in Table 5, Panel D). All models include quarter fixed effects. The t- or z-statistics are robust to heteroskedasticity and within-firm dependence, and are shown in parentheses. To mitigate the influence of outliers, all continuous variables are winsorized at the upper and lower 0.5%. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively. The last row in each panel shows the Chi-squared test statistic for the difference in the coefficient of Δ*Div/Assets* between columns (1) and (2), (3) and (4), and (5) and (6).

Panel A: Samples partitioned by the proximity of dividends to peers and the sign of quarterly Div/Assets changes

	(1) Close to Peers *CAR(-1,+1)*	(2) Far from Peers *CAR(-1,+1)*	(3) Div Increase & Close to Peers *CAR(-1,+1)*	(4) Div Increase & Far from Peers *CAR(-1,+1)*	(5) Div Decrease & Close to Peers *CAR(-1,+1)*	(6) Div Decrease & Far from Peers *CAR(-1,+1)*
Intercept	0.002	0.0096	0.0072	0.0109	-0.0036	0.0108*
	(0.17)	(1.27)	(0.74)	(1.21)	(-0.11)	(1.66)
Δ*Div/Assets*	***0.9478****	***0.8727****	***1.645****	***0.6737****	***0.2816****	***0.3848****
	(8.37)	***(9.08)***	***(6.36)***	***(4.59)***	***(1.9)***	***(2.59)***
Div/Assets	0.2839***	0.0635***	0.1709	0.0913**	0.3059*	0.0111
	(3.23)	(2.64)	(1.18)	(2.2)	(1.8)	(0.25)
Peer Div/Assets	-0.0899	-0.0072	-0.1592	0.0195	-0.1287	-0.0123
	(-0.9)	(-0.21)	(-0.99)	(0.36)	(-0.66)	(-0.2)
Firm Size	-0.0001*	-0.0003***	-0.0003**	-0.0007***	-0.0003**	-0.0004**
	(-1.68)	(-4.05)	(-2.47)	(-4.84)	(-2.3)	(-2.35)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Quarter FE	Yes	Yes	Yes	Yes	Yes	Yes
N	79340	73904	31088	29670	22839	21317
Chi^2-test of diff in coeffs.	0.30		11.53***		0.25	

Panel B: Sample of Quarterly Div/Assets Increases partitioned by proximity of resulting dividend to peers and size of the Dividend Premium

	(1) High Div Premium Years & Close to Peers *CAR(-1,+1)*	(2) High Div Premium Years & Far from Peers *CAR(-1,+1)*	(3) Low Div Premium Years & Close to Peers *CAR(-1,+1)*	(4) Low Div Premium Years & Far from Peers *CAR(-1,+1)*
ΔDiv/Assets	***2.4861****	***0.8637****	***1.2387****	***0.6045****
	(6.85)	***(4.04)***	***(3.46)***	***(3.23)***
Other controls	*Yes*	*Yes*	*Yes*	*Yes*
Quarter FE	Yes	Yes	Yes	Yes
N	14,648	12,260	16,440	17,410
Chi^2-test of diff in coeffs.	15.41***		2.66*	

Table 9: Do peer effects on dividends increase over time?

Column 1 (2) shows estimates from OLS regressions (second stage of 2SLS regressions) of *Div/Assets* ratio of a firm. In column 2, the peer dividend ratio and its interaction is the predicted value from the first-stage regression. The sample consists of all dividend-paying nonfinancial, nonutility firms which initiated dividends during the sample period, and includes observations during and after the dividend initiation years. The dependent variable is total cash dividends paid over a year, divided by total assets (*Div/Assets*). *YearsSinceInitiation* is the number of years after a firm initiated dividends. Peer firms are defined as all *other* firms in a firm's three-digit SIC industry code that year. The models are estimated using the full set of control variables (not tabulated) as in Table 5. All models include year fixed-effects. The t-statistics are robust to heteroskedasticity and within firm dependence, and are shown in parentheses. All continuous variables are winsorized at the upper and lower 0.5%. ***, ** and * indicate statistical significance at the 1%, 5% and 10% levels, respectively.

	(1) Div/Assets	(2) Div/Assets (2SLS – 2^{nd} Stage)
*YearsSinceInitiation * Peer Div/Assets*[§]	0.015**	0.023**
	(2.03)	(2.35)
Peer Div/Assets[§]	0.089	-0.115
	(1.22)	(-0.74)
YearsSinceInitiation	-0.000***	-0.000***
	(-2.64)	(-2.79)
N	13,653	13,653
R^2	0.259	0.256

[§] Instrumented in model 2.