Industry Effects in the Dividend Initiation Decision

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We examine industry effects on the likelihood and level of dividend initiations. Results suggest that firms incorporate industry expectations for dividend levels and growth into the initiation decision. They are in general less likely to initiate a dividend if dividend levels in the industry are high or growing. Firms that do initiate seek to match industry peers in initiation levels. We also find that announcement returns to dividend initiating firms are lower when more industry peers are dividend payers and when industry dividend growth is high. Together, these results provide support for an industry equilibrium dividend policy.

Keywords: dividend initiation, dividend policy, payout policy, industry effects

INTRODUCTION

The idea that firms observe and consider the actions of peers in making financial decisions is well-documented. Massa, Rehman and Vermaelen (2007) find that firms tend to mimic repurchase activities of industry peers. Leary and Roberts (2014) show that U.S. firms make capital structure decisions in response to the observed financing policies of their peers, and that the peer effect is a more significant factor in determining capital structure than most factors already identified in the literature. Francis, Hasan and Kostova (2014) find that peer effects on capital structure decisions obtain globally, using a sample of firms in 48 countries. Industry peer effects are also documented in Chan, Chang and Chen (2013) for cash holdings, Foucault and Fresard (2014) for capital investments, Kaustia and Rantala (2015) for stock splits, and Billett, Garfinkel and Jiang (2023) for SEO announcements.

We investigate whether dividend policies of industry peers influence the dividend initiation decision of a non-paying firm. Theoretical discussion of industry effects in dividend policy appear as early as Lintner (1956) and Michel (1979), and subsequent literature provides empirical evidence. Firth (1996) finds that industry peers experience positive (negative) abnormal returns when a firm in the industry announces dividend increases (decreases). Similar evidence that firms' dividend changes can affect rivals' stock prices is presented in Kohers (1999), Laux, Starks and Yoon (1998), and Caton, Goh and Kohers (2003). These studies all show that an individual firm's dividend policy can have contagion effects for the industry. In contrast, our study examines how existing industry dividend structure influences an individual firm's decision to initiate a dividend. We thus complement the current body of literature on the dynamic relationship between individual firm and industry peer outcomes.

Dividend initiation provides an ideal event setting to examine how firms incorporate information from industry peers. We are able to observe managers make a dividend policy decision at a time when they have the most flexibility, given that their firm is currently a non-payer. Survey evidence in Brav, Graham, Harvey and Michaely (2005) indicate that this flexibility is important in light of managers' aversion to changing dividend payout: 84.1% of dividend-payers state that it is "important or very important" to maintain historic dividend policy. Given this well-documented stickiness of dividends, a sample of dividend initiators provides a unique opportunity to detect industry peer effects because non-payers do not have a commitment to an existing dividend policy.

Our testable hypothesis is that the industry structure of dividends influences the likelihood and level of dividend initiations. We define industry structure of dividends by three variables: *industry paying intensity* (percentage of dividend paying firms in the industry), *industry dividend change* (yearly percentage change in industry dividend levels), and *industry median dividend*. Logistic regressions of the impact of industry dividend structure on the probability of dividend initiation reveals that firms with relatively higher industry paying intensity are more likely to initiate a dividend, consistent with firms to some degree mimicking peer dividend policy. We do find, however, that there is a negative relationship between industry median dividend and dividend change on the likelihood of dividend initiation. It appears that relatively high levels and high growth of dividends in the industry decrease firms' incentives to initiate a dividend. In such industries new payers have less flexibility if they desire to match industry peer patterns, because they have implicit pressure to initiate with a relatively high dividend or commit to higher dividend growth.

We also examine the relationship between the level at which the dividend is initiated and the industry structure of dividends. Results reveal a positive relationship between industry median dividend and the dividend initiation level. This is suggestive of new payers trying to match their peers in dividend initiation. Together with the evidence that firms are less likely to initiate in a high dividend environment, it is consistent with firms evaluating whether or not to follow industry norms when they make the dividend initiation decision.

We note that a systematic relationship between peer policies and firm policies can be evidence of peer pressure effect. In such a case, firms may imitate peer policies without regard to their firm-specific suitability. We conduct additional analysis on the market response to various sub-samples of dividend initiators to provide some insight into which of these effects dominates. We find that announcement returns are significantly higher for initiating firms in low paying intensity and low dividend growth industries. This suggests a valuation premium for firms initiating dividends in an environment of unmet investor demand for dividends. In these cases, investor and firm incentives appear to be aligned as initiating firms are moving the industry towards equilibrium investor demand for dividends. Overall, our results highlight the importance of industry peer dividend policies in a firm's dividend initiation decision and are generally consistent with an industry equilibrium dividend policy.

The rest of the paper is organized as follows. In the next section, we review relevant literature and develop hypotheses, Section 3 describes the data and presents descriptive statistics. Section 4 contains results of empirical tests for the likelihood and level of dividend initiation, reports abnormal returns to dividend initiators by industry dividend structure sorts. Section 5 contains a concluding discussion.

LITERATURE AND HYPOTHESES

Several studies document that firm-specific events can affect industry peers. For example, management disclosures of earnings forecasts affect stock prices of non-disclosing competitors in the same direction of the disclosing firm (Baginski, 1987); going-private bids have significant positive effects on firms in the same industry as the target firm (Slovin, Sushka and Bendeck,1991); security offering announcements are associated with significant negative abnormal returns for non-announcing peers (Szewczyk,1992); bankruptcy announcements significantly affect equity values of rivals (Lang and Stulz, 1992); corporate capital investment announcements have significantly negative effects on peers' stock prices (Chen, Ho and Shih, 2007); completed IPOs have significantly negative effects on stock prices of firms in the same industry and withdrawn IPOs have significantly positive effects (Hsu, Reed and Rocholl, 2010); and

announcement of financial misrepresentation have spillover effects to stock returns of peers of the accused firm (Goldman, Peyer and Stefanescu, 2012).

Studies specifically related to how a firm's dividend choices influence industry rivals for the most part document industry stock price contagion effects of changes in individual firm's dividend policy. Kohers (1999) finds that competitors' stock prices respond to both dividend initiations and omissions of industry peer firms. Firth (1996) finds that abnormal returns to competitors of initiating firms are consistent with information transfers to their peers. Laux et al. (1998) find that large dividend changes affect rivals' stock prices, although the impact varies with how close a competitor they are to the firm announcing the dividend change.

Our study extends a more recent literature that focuses on the opposite effect, namely, how individual firm choices are influenced by the existing industry environment. This literature largely focuses on how product market competition influences dividend policy choices. Hoberg, Phillips, and Prabhala (2014) find that firms facing competitive threats in their product markets are more likely to build cash reserves rather than return cash to shareholders via dividends or repurchases. Zhou, Booth and Chang (2013) find that firms facing greater product market competition from imports are less likely to pay dividends, and Grullon and Michaely (2002) find that firms in concentrated industries are more likely to pay dividends. Our study is most closely related to Grennan (2019), who investigates how firms change their dividend levels in response to changes by industry peers.

Our paper is motivated to some extent by the Brav et al. (2005) survey of 384 financial executives on factors that affect payout decisions. Most of the survey results to the question "How important are the following factors to your company's dividend decisions?" are well-documented in the empirical literature. For example, most respondents identify maintaining the current dividend, stability of earnings, clientele effects, and funding growth as the most important factors they consider in setting dividend policy. However, a notable response is that more than one third of firms consider the dividend policies of their industry rivals to be important or very important to their dividend decisions. The results in our paper provide empirical support for this survey evidence, as we examine how the industry structure of dividends influences the likelihood and level of dividend initiation.

The event of dividend initiation provides a unique opportunity to observe the impact of industry peers on an individual firm's payout policy. In contrast to dividend paying firms that are constrained by their existing payout policy, non-payers have flexibility to decide whether or not to initiate and at what level. We draw our theoretical framework from Leary and Roberts (2014) who examine how a firm's peers influence its capital structure decisions. They argue that firms unsure of how to set their capital structures can observe and learn from their peers, and their results show that peer firms' leverage decisions have an economically meaningful impact on individual firms' leverage choices. Other studies providing evidence of firms learning from peers in setting financial and investment policies include Francis et al. (2014), Foucault and Fresard (2014) and Chan, Chang and Chen (2013). This framework is relevant to our study as non-payers are likely to explicitly consider the policies of their dividend-paying peers in deciding whether and how to initiate a dividend.

We construct three variables to describe the industry structure of dividends and to develop hypotheses for how these variables inform a firm's dividend initiation decision. *Industry paying intensity* is calculated as number of dividend-paying firms in an industry divided by total number of firms in the same industry year. A related measure, fraction of firms in the industry that change their dividend level, is used in Grennan (2019) to measure peer influence on existing payers' dividend change. We hypothesize that industry paying intensity will have a positive relationship with dividend initiation likelihood to the extent that investor appetite for dividends varies with the nature of the firm's assets.

Industry dividend change is calculated as the one-year percentage change in total dividend level in the industry. A relatively high value of this variable indicates an upward trend in industry dividend levels. In such an environment there is an implied expectation for non-payers to increase dividends once they become payers. Thus, our testable hypothesis is for a negative relationship between industry dividend change and the likelihood and level of dividend initiation. Our reasoning is that in industries with an upward dividend trend, firms are less likely to initiate because they perceive implicit pressure to increase dividends; if they

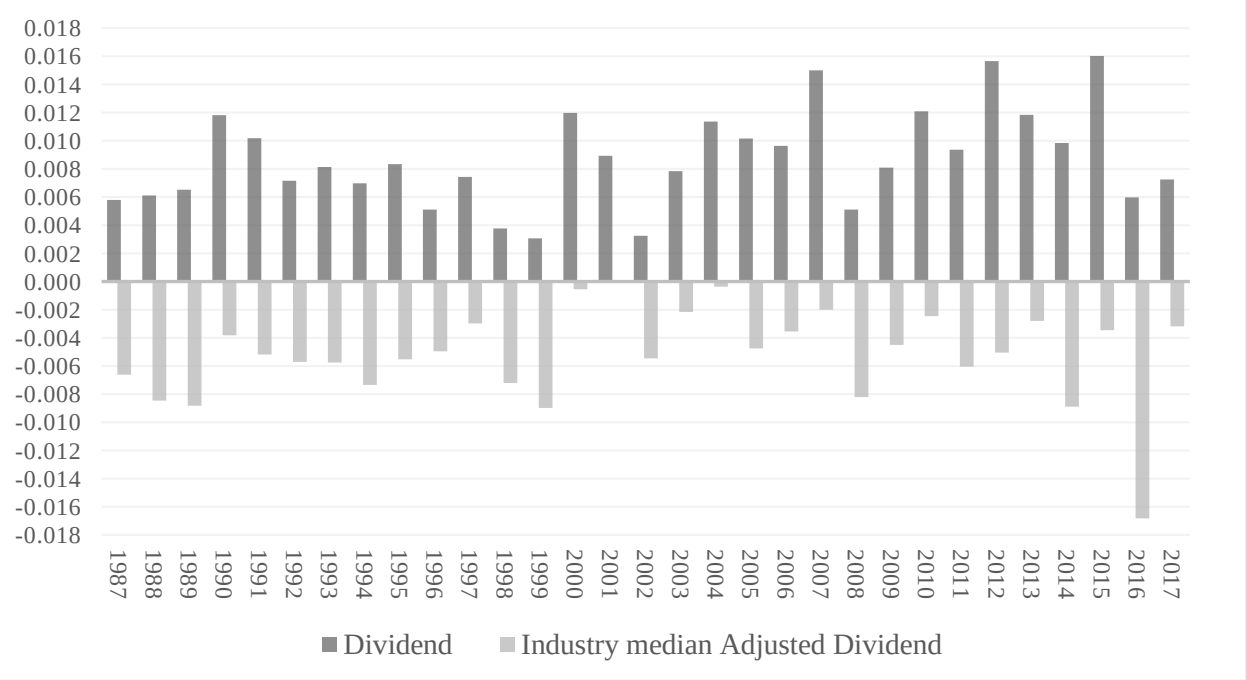
do initiate a dividend, they will do so at a lower level to preserve flexibility for future increases in an industry where dividends are on an upward trend.

Industry median dividend is measured as the median dividend level for that industry year. The use of this variable is similar to the empirical approach in Frank and Goyal (2009) who find that industry median leverage has a significant positive effect on an individual firm's leverage. Firms will likely be reluctant to initiate a dividend when the industry median dividend is relatively high because the average dividend level in their industry serves as a benchmark in determining the initial level. Thus, our testable hypothesis is for a negative relationship between initiation likelihood and industry dividend level, and a positive relationship between initiation level and industry dividend level. The latter is consistent with dividend initiators seeking to match their peers once they decide to initiate.

SAMPLE AND DESCRIPTIVE STATISTICS

Following Boehme and Sorescu (2002), we identify dividend initiation as the first cash common stock dividend paid in the history of the firm. We exclude firms with fewer than two years of history in the CRSP and COMPUSTAT databases, and also exclude financial companies and utilities. The final sample comprises 1197 firms initiating dividends in 305 industries from 1987 to 2017. We measure dividend level as common dividend scaled by total assets, however, results are robust to scaling dividends by earnings or by price.

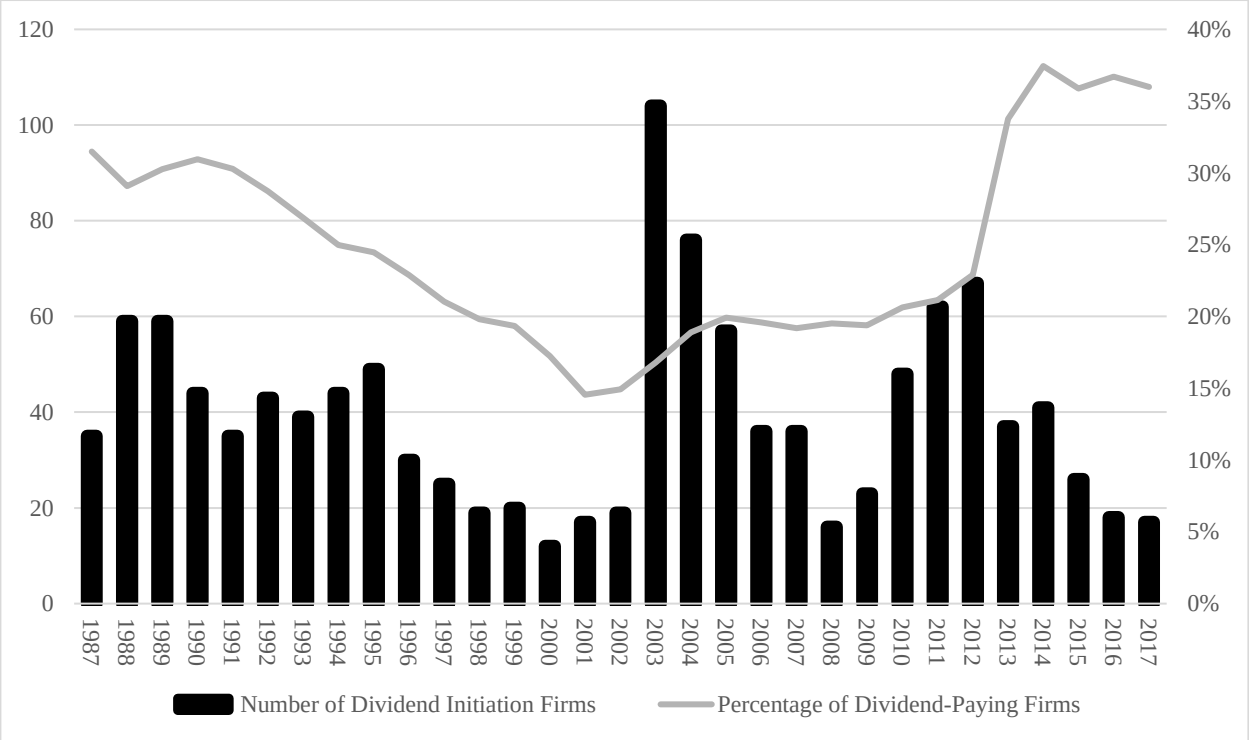
FIGURE 1
MEDIAN RAW AND INDUSTRY ADJUSTED DIVIDEND INITIATION LEVEL



The sample is drawn from publicly traded U.S. firms from 1987 to 2017, excluding financial companies and utilities, and comprises 1197 dividend initiation firms. Dividends are measured as common dividend scaled by total assets. Industry adjusted dividends are calculated as dividends of each firm minus industry median dividend. Industry is defined by 4-digit SIC code when there are more than 10 firms in the industry year; if there are fewer than 10 firms, we define industry by 3-digit SIC code; if still fewer than 10 firms in that 3-digit SIC industry year, we define industry by 2-digit SIC code.

Figure 1 presents a time series plot of median dividend initiation level and median industry adjusted dividend initiation level in each sample year. It shows that firms initiate dividends at a level below industry average in each year of the sample period. This is not surprising given ample evidence in the literature that a dividend decrease is a strong negative signal (e.g., Aharony and Swary, 1980; Christie, 1994; Dhillon and Johnson, 1994; Nissim and Ziv, 2001). Thus, a lower initial dividend level relative to the industry can provide more flexibility to maintain, and more potential to increase, dividends.

FIGURE 2
NUMBER OF DIVIDEND INITIATION FIRMS AND PERCENTAGE OF DIVIDEND-PAYING FIRMS



The sample is drawn from publicly traded U.S. firms from 1987 to 2017, excluding financial companies and utilities, and comprises 1197 dividend initiation firms. Percentage of dividend-paying firms is calculated as number of dividend-paying firms in the Compustat database divided by total number of firms in the sample for that year.

Figure 2 plots number of dividend initiation firms and percentage of dividend-paying firms in each year. Percentage of dividend payers is number of dividend-paying firms divided by total number of firms in the sample for that year. There is a clear pattern of decrease in percentage of dividend-paying firms from the 1980s through early 2000s, consistent with extant literature on disappearing dividends (e.g., Fama and French, 2001; Fenn and Liang, 2001; Grullon and Michaely, 2002; Bagwell and Shoven, 1989). However, there is a notable increase in the percentage of dividend-paying firms after 2002. Before Congress passed the Jobs and Growth Tax Relief Reconciliation Act of 2003 (JGTRRA) on May 28th, 2003, dividends were taxed at a higher rate than capital gains. Under this law, qualified dividends are now taxed at the same rate as capital gains. This dividend tax cut significantly influenced firms' payout policy (Brown, Liang, and Weisbenner, 2007; Chetty and Saez, 2006). In light of this observed trend in the data, we include year dummies in later regression analysis to control for any time effects.

Firm characteristics variables are measured as follows. Market capitalization is year-end stock price multiplied by year-end common shares outstanding. Total assets are directly obtained from COMPUSTAT. ROA is earnings before interests and taxes divided by total assets. Change in ROA is current year minus

previous year ROA. Market-to-book value is market capitalization of equity plus total assets minus common equity, all divided by total assets. Leverage is total long-term debt divided by total assets. Firm age is measured from the date the firm is included in the CRSP database. Institutional ownership is total number of shares held by institutional investors at year-end divided by total number of shares outstanding. Analyst coverage is the number of analysts covering the firm based on data from IBES. In addition to these firm-level control variables, we control for the degree of competition within the industry with the Herfindahl index, calculated as the sum of squared market shares of all firms in the industry.

These variables are included in the regression analysis to control for their effect on the dividend initiation decision. Industry adjusted market-to-book value of assets controls for firms' investment opportunities relative to their peers, since firms are likely to condition dividend policy on their need to fund growth. Cash and ROA control for availability of funds to pay dividends, and we control for capital structure and size with book leverage and the natural log of market capitalization respectively. The Herfindahl index controls for the degree of industry product market competition. Firm-level and industry-median institutional ownership control for the impact of institutional investors on the dividend initiation decision, and year dummies control for time effects. All variables are measured in the year before the dividend initiation announcement.

TABLE 1
DESCRIPTIVE STATISTICS

		(1) Initiator	(2) No Dividend	(3) Dividend Paying	Difference (1) - (2)	Difference (1) - (3)
Market cap	Mean	2748.62	1199.85	10039.14	1548.77***	-7290.52***
	(Median)	307.32	125.77	1276.35	181.55***	-969.03***
Total assets	Mean	2840.00	823.62	8315.71	2016.38***	-5475.71***
	(Median)	288.59	103.27	1243.94	185.32***	-955.35***
Cash/TA	Mean	0.180	0.269	0.120	-0.089***	0.061***
	(Median)	0.115	0.180	0.069	-0.064***	0.047***
ROA	Mean	0.159	-0.040	0.156	0.198***	0.002
	(Median)	0.151	0.070	0.149	0.080***	0.002*
MV/BV	Mean	1.870	2.492	1.918	-0.621***	-0.048
	(Median)	1.498	1.648	1.566	-0.150***	-0.068**
Leverage	Mean	0.165	0.163	0.198	0.001	-0.033***
	(Median)	0.106	0.055	0.179	0.051***	-0.074***
Firm Age	Mean	8.385	6.235	12.140	2.151***	-3.755***
	(Median)	7.000	5.000	10.000	2.000***	-3.000***
Institutional Ownership (IO)	Mean	43.096	34.248	54.796	8.847***	-11.700***
	(Median)	37.117	25.505	60.276	11.612***	-23.158***
ΔIO (t-1 to t+1)	Mean	3.351	2.597	2.144	0.754	1.208**
	(Median)	1.017	0.080	0.876	0.937***	0.141***
Analyst Coverage	Mean	9.745	7.697	16.679	2.048***	-6.934***
	(Median)	6.000	4.000	12.000	2.000***	-6.000***
Number of Observations		1197	38138	13052		

This table contains descriptive statistics for a sample of dividend initiating firms and their dividend-paying and non-dividend-paying industry peers. The sample of initiators is drawn from publicly traded U.S. firms from 1987 to

2017, excluding financial companies and utilities. All firm characteristics variables are obtained from Compustat. Market cap is year-end stock price multiplied by year-end common shares outstanding. Cash/TA is cash and marketable securities scaled by total assets. ROA is earnings before interests and taxes (EBIT) divided by total assets. MV/BV is market cap plus total assets minus common equity divided by total assets. Leverage is total long-term debt divided by total assets. IO is total number of shares held by institutional investors at year-end divided by total number of shares outstanding. Analyst coverage is the number of analysts covering the firm based on data from IBES. All variables are measured one year before initiation. ***, **, and * denote that the point estimate is significantly different from zero at the 1%, 5% and 10% levels, respectively.

Table 1 contains descriptive statistics for dividend initiation firms. For comparison, we include all non-dividend-paying firms and dividend-paying firms in the same industry year as the sample firm in Columns (2) and (3), respectively. Non-dividend-paying firms are identified as firm that do not pay a dividend three years before and three years after the sample firm's dividend initiation year. Dividend initiation firms are significantly larger than non-dividend paying firms, but significantly smaller than dividend-paying firms, both in term of market capitalization and total assets. Dividend initiators also have higher ROA relative to non-dividend payers, which suggests that firms initiate dividends when they are relatively more profitable.

However, current available cash does not appear to be an important factor for the dividend initiation decision, since initiating firms have significantly lower cash relative to non-dividend- paying firms and significantly higher cash relative to dividend-paying firms. These summary comparisons are generally consistent with the literature. For example, Fama and French (2001) find that dividend paying firms tend to be larger and more profitable. We also note the somewhat intuitive result that dividend paying firms are on average older than dividend initiators, and dividend initiators are older than non-payers. Similarly, we find that dividend initiators have more analyst coverage than non-payers, but have less analyst coverage than dividend paying firms.

We construct test variables as follows. *Industry paying intensity* is calculated yearly as the number of dividend paying firms in the industry scaled by the number of firms in the industry. Industry is defined by 4-digit SIC code when there are more than 10 firms in the industry year; if there are fewer than 10 firms, we define industry by 3-digit SIC code; if still fewer than 10 firms in that 3-digit SIC industry year, we define industry by 2-digit SIC code. We adopt this approach to avoid values that are artificially large because of a small number of firms in the 4-digit or 3-digit industry. *Industry dividend change* is the one-year percentage change in total dividend level in the industry, where dividend level is measured as dividend scaled by total assets. *Industry median dividend* is the yearly median dividend level for each industry represented in our sample.

RESULTS

Likelihood of Dividend Initiation

Table 2 contains logistic regression coefficients for the likelihood initiating a dividend. The dependent variable equals one for a dividend initiation firm and equals zero for each firm in the portfolio of non-dividend-paying firms in the same industry. We introduce the industry structure variables one at a time in Columns (1) through (3) and include them jointly in the model in Column (4).

The positive and significant coefficient on *industry paying intensity* in Column (1) indicates that firms with relatively greater numbers of dividend-paying industry peers are more likely to initiate dividends. This suggests that firms are influenced by their industry environment in making the dividend decision. We believe that it is consistent with firms considering peer policy in deciding whether or not to initiate a dividend; large numbers of dividend- paying peers signal that a dividend is the norm in the industry, and increases the likelihood of initiation. It is also possible that firms in such industries are responding to implicit peer pressure and the initiation decision may not align with firm characteristics. However, the signs of coefficients on control variables indicate that firms appropriately consider their own characteristics in making the initiation decision. Initiating firms have lower growth opportunities, higher return on assets, lower leverage, larger size, and are more mature. Thus, the evidence that firms are more likely to initiate a

dividend in high paying industries suggests that they evaluate their own characteristics in light of prevailing industry norms in making the dividend initiation decision. In unreported analysis, we use change in industry paying intensity to replace industry paying intensity and find similar results.

Column (2) of Table 2 contains coefficient estimates for the *industry dividend change* variable. The negative sign on this variable indicates that firms in industries with an upward trend in dividend level are less likely to initiate dividends. This is consistent with a perception by non-dividend-paying firms that if they do initiate, there would be an expectation of increasing dividends, which creates more pressure and reduces flexibility, leading to reluctance to initiate a dividend. We note, however, that this result is also consistent with an overall industry dividend equilibrium in the sense that there is less need for additional dividend payers when industry overall dividend levels are increasing. This dual interpretation also obtains for the negative coefficient on *industry median dividend* in Column (3). It is consistent with firms being less likely to initiate dividends in industries with a high benchmark for dividend level. Our interpretation is that firms perceive that initiating dividends in a high benchmark industry will create pressure to match those high levels. Yet, an alternative explanation is that in high dividend industries, non-payers recognize that investor demand for dividends is largely satisfied and thus are less likely to initiate. All three of these variables retain their sign and significance when they are included together in the model reported in Column (4) of Table 2. We conclude that the overall industry dividend environment has significant influence on individual firms' dividend initiation decisions.

TABLE 2
LIKELIHOOD OF INITIATING DIVIDENDS

	(1)	(2)	(3)	(4)
Industry Paying Intensity	0.743***			0.822***
	(0.00)			(0.00)
Industry Dividend Change		-0.238***		-0.220***
		(0.00)		(0.00)
Industry Median Dividend			-6.026*	-7.670**
			(0.08)	(0.03)
Herfindahl index	-9.342***	-9.367***	-9.454***	-8.818***
	(0.00)	(0.00)	(0.00)	(0.00)
Industry median adjusted MV/BV	-0.319***	-0.321***	-0.320***	-0.314***
	(0.00)	(0.00)	(0.00)	(0.00)
Log Market Cap	0.256***	0.262***	0.255***	0.224***
	(0.00)	(0.00)	(0.00)	(0.00)
Cash/TA	-0.782***	-0.867***	-0.874***	-0.754***
	(0.00)	(0.00)	(0.00)	(0.00)
ROA	4.635***	4.691***	4.705***	4.735***
	(0.00)	(0.00)	(0.00)	(0.00)
Long-term Debt/Total Assets	-0.781***	-0.766***	-0.772***	-0.848***
	(0.00)	(0.00)	(0.00)	(0.00)
Firm Age	0.272***	0.273***	0.272***	0.257***
	(0.00)	(0.00)	(0.00)	(0.00)
Institutional Ownership (IO)	0.099	0.067	0.087	0.087
	(0.41)	(0.58)	(0.47)	(0.46)

	(1)	(2)	(3)	(4)
Industry Median IO	0.757***	1.040***	0.973***	0.190
	(0.00)	(0.00)	(0.00)	(0.38)
Analyst Coverage	-0.022***	-0.023***	-0.023***	-0.019***
	(0.00)	(0.00)	(0.00)	(0.00)
Intercept	-6.607***	-6.527***	-6.313***	-4.715***
	(0.00)	(0.00)	(0.00)	(0.00)
Year Dummy	Yes	Yes	Yes	Yes
Pseudo R^2	0.207	0.209	0.206	0.202
Number of Obs. Dummy = 1	1197	1197	1197	1197
Number of Obs. Dummy = 0	38138	38138	38138	38138

Logistic regression coefficients for the likelihood of initiating a dividend relative to non-dividend-paying firm. The dependent variable is equal to 1 if it is the dividend initiating firm, and equal to 0 if it is the non-dividend-paying firm. Industry paying intensity is calculated as number of dividend-paying firms divided by total number of firms in the same industry year. Industry median dividend is median dividend level. Industry dividend change is total dividend level minus last year total dividend level and divided by last year total dividend level. The control variables are defined in Table 1. Industry adjusted MV/BV is MV/BV minus industry median MV/BV. Herfindahl index is the sum of squared market shares of all firms in the industry. Firm age is calculated from the date the firm included in the CRSP. All variables are measured one year before initiation (t-1). P-values are in parentheses. ***, **, and * denote that the point estimate is significantly different from zero at the 1%, 5% and 10% levels, respectively.

Results for control variables are generally consistent with the dividend literature. The coefficient on industry adjusted market-to-book ratio, a proxy for investment opportunities, is significantly negative. This is consistent with previous literature that firms consider their funding needs for investment opportunities before making dividend policy (Brav et al., 2005; John and Lang, 1991; Lang and Litzenberger, 1989). In addition, firms with higher ROA and lower leverage are more likely to initiate dividends. These results are generally consistent with findings documented in Bulan, Subramanian, and Tanlu (2007) that dividend initiation firms tend to be larger and more profitable. Since both lower leverage and high ROA firms have more potential to fund dividends, the results here are also consistent with previous literature that firms consider funding when making dividend initiation decisions (Brav et al, 2005; Deshmukh, 2003). We also find that analyst coverage is significantly negatively related to likelihood of dividend initiation. It is possible that firms with low analyst coverage are more likely initiate a dividend to attract more attention.

We also note the significantly negative coefficient on the Herfindahl index, which implies that firms are less likely to initiate dividends in few-firm industries. The degree of competition among peers in the industry can affect firms' earning stability and subsequently affect their dividend policy. Given the importance of industry structure in our empirical framework, we further examine the effect of industry dividend structure on the dividend initiation decision by dividing initiating firms into terciles based on Herfindahl index. We then re-estimate the models in Table 2. This subsample analysis can provide insight into whether the effects documented in Table 2 are clustered in industries with particular characteristics.

TABLE 3
LIKELIHOOD OF INITIATING DIVIDENDS FOR HERFINDAHL INDEX TERCILES

	Low	Median	High
	(1)	(2)	(3)
Industry Paying Intensity	-2.371***	0.647*	2.977***
	(0.00)	(0.06)	(0.00)
Industry Dividend Change	-0.967***	-0.032	-0.284***
	(0.00)	(0.66)	(0.01)
Industry Median Dividend	-5.410	-41.136***	-20.882**
	(0.54)	(0.00)	(0.01)
Industry median adjusted MV/BV	-0.269***	-0.495***	-0.422***
	(0.00)	(0.00)	(0.00)
Log Market Cap	0.367***	0.527***	0.313***
	(0.00)	(0.00)	(0.00)
Cash/TA	-2.391***	0.054	0.323
	(0.00)	(0.87)	(0.30)
ROA	5.104***	4.632***	4.379***
	(0.00)	(0.00)	(0.00)
Long-term Debt/Total Assets	-0.807**	-1.130***	-0.701**
	(0.03)	(0.00)	(0.02)
Firm Age	0.230***	0.250***	0.194***
	(0.00)	(0.00)	(0.00)
Institutional Ownership (IO)	-0.232	-0.174	0.052
	(0.40)	(0.40)	(0.81)
Industry Median IO	1.383*	0.013	0.417
	(0.08)	(0.98)	(0.24)
Analyst Coverage	-0.042***	-0.051***	-0.017**
	(0.00)	(0.00)	(0.02)
Intercept	-7.105***	-6.739***	-7.205***
	(0.00)	(0.00)	(0.00)
Year Dummy	Yes	Yes	Yes
Pseudo R^2	0.170	0.189	0.171
Number of Obs. Dummy = 1	395	403	399
Number of Obs. Dummy = 0	6559	10707	22703

Dependent variable is equal to 1 for a dividend initiating firm, and equals 0 for a non-dividend-paying firm in the same industry as the dividend initiating firm. In each year, firms are divided into terciles based on Herfindahl index (the sum of squared market shares of all firms in the industry). The independent variables are the same as Table 2, and are measured one year before initiation (t-1). P-values are in parentheses. P-values are in parentheses. ***, **, and * denote that the point estimate is significantly different from zero at the 1%, 5% and 10% levels, respectively.

Table 3 contains logistic regression coefficients for these subsamples of firms. A notable result is that there are distinct differences in the effect of industry paying intensity on initiation likelihood in high and low Herfindahl industries. The positive coefficient reported in Table 2 obtains only for firms in relatively more concentrated industries (Columns (2) and (3)). This suggests that effects on the dividend initiation decision reported in Table 1 obtain only in few-firm industries where inter-firm rivalry is strong. In contrast,

the coefficient is negative and significant in Column (1) for low Herfindahl firms. This result suggests that in many-firm, competitive industries, where price competition is high and long-run economic profit is close to zero, firms will choose not to initiate if there appear to be sufficient numbers of existing dividend payers. This more competitive environment means more uncertainty in future earnings, which Brav et al (2005) cite as a key factor in determining firm dividend policy.

Level of Dividend Initiation

We next test hypotheses for the impact of industry dividend structure on the level at which firms initiate dividends. Table 4 reports OLS regression coefficients for the sample of dividend initiating firms. The dependent variable is dividends scaled by total assets, and independent variables are the same as Table 2. We note here that results are robust to scaling dividends by price or earnings. The Table shows no effect of industry paying intensity and industry dividend change on the level of dividend initiation. However, Columns (3) and (4) show that industry median dividend is significantly positively related to the dividend initiation level. This is consistent with our hypothesis that new dividend payers will try to match peers' dividend level when choosing their own initiation level.

TABLE 4
OLS REGRESSION COEFFICIENTS FOR DIVIDEND INITIATION LEVEL

	(1)	(2)	(3)	(4)
Industry Paying Intensity	0.008			0.001
	(0.75)			(0.97)
Industry Dividend Change		-0.006		-0.009
		(0.46)		(0.26)
Industry Median Dividend			1.755***	1.771***
			(0.00)	(0.00)
Herfindahl index	-0.056	-0.055	-0.051	-0.051
	(0.26)	(0.27)	(0.30)	(0.29)
Industry median adjusted MV/BV	0.004	0.004	0.004	0.005
	(0.48)	(0.47)	(0.37)	(0.35)
Log Market Cap	-0.007**	-0.007**	-0.008**	-0.007**
	(0.03)	(0.03)	(0.02)	(0.02)
Cash/TA	0.142***	0.142***	0.134***	0.135***
	(0.00)	(0.00)	(0.00)	(0.00)
ROA	-0.032	-0.032	-0.035	-0.037
	(0.29)	(0.28)	(0.23)	(0.22)
Long-term Debt/Total Assets	0.062***	0.062***	0.065***	0.065***
	(0.00)	(0.00)	(0.00)	(0.00)
Firm Age	-0.001	-0.001	-0.001	-0.001
	(0.99)	(0.97)	(0.80)	(0.76)
Institutional Ownership (IO)	-0.006	-0.006	-0.005	-0.005
	(0.68)	(0.67)	(0.73)	(0.74)
Industry Median IO	0.005	0.009	0.027	0.026
	(0.88)	(0.75)	(0.32)	(0.40)
Analyst Coverage	0.312	0.267	0.406	0.370
	(0.53)	(0.59)	(0.40)	(0.45)

	(1)	(2)	(3)	(4)
Intercept	0.022	0.022	-0.016	-0.017
	(0.63)	(0.63)	(0.72)	(0.70)
Year Dummy	Yes	Yes	Yes	Yes
Number of Obs.	1197	1197	1197	1197
Adjusted R-Square	0.030	0.030	0.066	0.065

The dependent variable is the level of the first dividend paid by the initiating firm scaled by total assets. The independent variables are the same as Table 2, and are measured one year before initiation (t-1). P-values are in parentheses. P-values are in parentheses. ***, **, and * denote that the point estimate is significantly different from zero at the 1%, 5% and 10% levels, respectively.

We follow the approach from Table 3 and re-estimate the coefficients for subsamples of firms in each Herfindahl index terciles and report results in Table 5. Although insignificant in the sample overall, Column (1) shows that the coefficient on paying intensity is negative and significant for the low Herfindahl index subsample. This indicates that for firms in more competitive industries, greater numbers of dividend paying firms exert downward pressure on the level at which the dividend is initiated. Together with the results in Column (1) of Table 3, this result demonstrates that firms in high paying intensity competitive industries are reluctant to initiate a dividend, and if they choose to initiate, do so at relatively lower levels. Table 5 also shows that the positive coefficient on industry median dividend documented in the full sample only obtains for the median and high Herfindahl subsamples. Thus, the tendency to match peers in terms of dividend initiation level is clustered in more concentrated industries. This demonstrates the power of inter-firm rivalry in few-firm industries, and is consistent with results in MacKay and Phillips (2005), who find that in concentrated industries firms tend to match their peers in financial leverage.

TABLE 5
DIVIDEND INITIATION LEVEL FOR HERFINDAHL INDEX TERCILES

	Low	Median	High
	(1)	(2)	(3)
Industry Paying Intensity	-0.087**	0.120	-0.011
	(0.03)	(0.12)	(0.57)
Industry Dividend Change	-0.005	-0.020	-0.013
	(0.78)	(0.16)	(0.21)
Industry Median Dividend	-0.015	2.329*	1.859***
	(0.98)	(0.07)	(0.00)
Industry median adjusted MV/BV	0.008	0.005	-0.002
	(0.18)	(0.71)	(0.71)
Log Market Cap	-0.004	-0.024***	0.002
	(0.35)	(0.01)	(0.47)
Cash/TA	0.029	0.320***	0.005
	(0.30)	(0.00)	(0.80)
ROA	-0.012	-0.130**	0.004
	(0.78)	(0.04)	(0.91)
Long-term Debt/Total Assets	0.011	0.136***	-0.033*
	(0.69)	(0.00)	(0.07)

	Low (1)	Median (2)	High (3)
Firm Age	-0.001 (0.85)	-0.009 (0.41)	0.002 (0.54)
Institutional Ownership (IO)	0.001 (0.96)	-0.011 (0.77)	0.010 (0.43)
Industry Median IO	-0.004 (0.94)	0.010 (0.91)	0.016 (0.48)
Analyst Coverage	-0.148 (0.80)	2.783* (0.05)	-0.854** (0.04)
Intercept	0.094 (0.14)	-0.011 (0.92)	-0.017 (0.67)
Year Dummy	Yes	Yes	Yes
Number of Obs.	395	403	399
Adjusted R-Square	-0.010	0.082	0.330

The dependent variable is the level of the first dividend paid by the initiating firm scaled by total assets. In each year, firms are divided into terciles based on Herfindahl index (the sum of squared market shares of all firms in the industry). The independent variables are the same as Table 2, and are measured one year before initiation (t-1). P-values are in parentheses. P-values are in parentheses. ***, **, and * denote that the point estimate is significantly different from zero at the 1%, 5% and 10% levels, respectively.

Abnormal Returns to Dividend Initiating Firms

Results presented above indicate that firms are more likely to initiate dividends if they are in industries with high paying intensity, low recent dividend change, and low average dividend level. Firms that do initiate a dividend do so at a higher level if they are in industries with high average dividends. In this section, we investigate whether differences in abnormal returns for subsamples of initiating firms formed on these industry characteristics align with these documented firm preferences with respect to dividend initiation policy. Following Firth (1996), we use the standard market model to calculate expected returns:

$$E(R)_{it} = \alpha_i + \beta_i R_{mt} \quad (1)$$

$E(R)_{it}$ is expected daily return for firm i in time t. R_{mt} is daily return on the CRSP equal-weighted market index in time t. We calculate α and β from t-60 and to t-10, where t=0 is the dividend announcement date. Abnormal announcement returns (CARs) are measured over the periods t-1 to t+4 and t-1 to t+9, where t is the announcement date.

We begin by reporting mean and median CARs for dividend initiators compared to their dividend-paying and non-paying peers in Panel A of Table 6. Column (1) shows positive and significant CARs for initiating firms, which is consistent with the literature that dividend initiation is good news (e.g., Asquith and Mullins, 1983). Column (2) shows that non-dividend- paying industry peers do not experience a significant announcement return effect in the shorter (-1, 4) window, however, they have significantly negative CARs in the longer (-1, 9) window. Thus, the initiation announcement conveys a positive signal for initiating firms and to some extent positions non-dividend payers as less profitable. This is similar to results in Erwin and Miller (1998) that firms experience negative stock returns when a rival announces an open market share repurchase program, suggestive of a change in the competitive position of the repurchasing firm.

Column (3) shows that industry peers that are already dividend payers experience significantly positive abnormal returns around the dividend initiation announcement, although their CARs are lower in magnitude than those of sample firms. In general, these results indicate positive (negative) spillover effects

of the dividend initiation announcement for dividend payers (non-payers), suggesting that when initiating a dividend signals good news about future cash flows of dividend-paying firms in the industry.

Our tests for investor reaction to dividend initiations by industry structure sorts are reported in Panel B of Table 6. We report mean and median CARs for dividend initiators in low and high industry structure tercile groups: paying intensity, dividend change, and dividend level. Results show that initiating firms in low paying intensity industries have average announcement returns that are higher than those in high paying intensity industries, especially in the longer (-1, 9) window. Earlier analysis showed that firms in industries with relatively lower paying intensity were significantly less likely to initiate dividends. It appears that the announcement of a new payer in a low intensity industry is either more of a surprise or more positive news for the market. The latter would be consistent with a move towards equilibrium in the demand and supply for dividends, or may also be interpreted as the market reacting more favorably to dividend initiations when they are not driven by peer effects. In either case, it suggests that investors place a lower value on dividend initiation when the industry is already somewhat saturated with payers. Thus, the propensity for dividend initiation in high dividend paying industries may be indicative to some extent of a behavioral or peer pressure effect in the sense that investors do not value these initiations as highly as those in low pay intensity industries.

The remaining results in Panel B show that announcement returns are significantly higher for initiating firms in low dividend change industries in the longer (-1, 9) window.

TABLE 6
CUMULATIVE ABNORMAL RETURNS AROUND DIVIDEND INITIATION ANNOUNCEMENTS

Panel A: Dividend Initiators, Non-Payers and Payers

Period		(1)	(2)	(3)	Difference	
		Initiator	No Dividend	Dividend Paying	(1) - (2)	(1) - (3)
-1, 4	Mean	0.0261***	-0.0003	0.0020***	0.0264***	0.0241***
	Median	0.0155***	-0.0010	0.0016***	0.0165***	0.0139***
-1, 9	Mean	0.0284***	-0.0002	0.0037***	0.0286***	0.0247***
	Median	0.0224***	-0.0017	0.0039***	0.0241***	0.0185***

Panel B: Dividend Initiating Firms by Industry Dividend Structure Sorts

Period	-1, 4		-1, 9	
	Mean	Median	Mean	Median
Low Industry Paying Intensity	0.0290***	0.0197***	0.0373***	0.0293***
High Industry Paying Intensity	0.0230***	0.0099***	0.0211***	0.0153***
Difference (Low-High)	0.0060	0.0098	0.0162**	0.0140**
Low Industry Dividend Change	0.0312***	0.0176***	0.0412***	0.0316***
High Industry Dividend Change	0.0214***	0.0083***	0.0205***	0.0140***
Difference (Low-High)	0.0098	0.0093*	0.0207**	0.0176**
Low Industry Median Dividend	0.0263***	0.0103***	0.0277***	0.0218***
High Industry Median Dividend	0.0271***	0.0140***	0.0256***	0.0173***
Difference (Low-High)	-0.0008	-0.0037	0.0021	0.0045

Abnormal returns are calculated as return minus market model expected return (CAR). Cumulative abnormal returns are measured over t-1 to t+4 and t-1 to t+9, where t is the dividend announcement date. Panel A reports abnormal

returns for dividend initiation firms, and for dividend-paying and non-dividend-paying firms in the same industry as dividend initiators. Panel B reports abnormal returns for dividend initiation firms in low/high industry paying intensity, industry dividend change or industry median dividend. The table contains results for the full sample of 1197 firms. ***, **, and * denote that point estimate is significantly different from zero at the 1%, 5% and 10% levels, respectively.

Results in Table 2 showed that firms in low dividend change industries are more likely to initiate a dividend, consistent with our hypothesis that firms are more likely to choose to initiate in such environments because it provides more flexibility and less implicit pressure of expected dividend increases. The results here in Table 6 for announcement returns speak to investors' relative valuations and indicate that on average they place greater value on initiations when the industry supply of dividends is low. Overall, these results suggest that investors and firms may have differing motivations for dividend initiations, but the event is nonetheless value-increasing to the firm.

CONCLUSION

This paper examines the impact of the industry structure of dividends on the dividend initiation decision. We define industry structure using three variables that describe the firm's industry dividend environment: dividend paying intensity, recent dividend change, and average dividend level. We develop and test hypotheses for the impact of these industry variables on the likelihood of dividend initiation and the level at which the dividend is initiated. We also examine abnormal stock return around initiation announcements for subsamples formed on the industry structure variables.

We first examine the likelihood of dividend initiation and find that industry structure of dividends has a significant effect on a firm's decision to initiate a dividend. Firms in industries with relatively more dividend payers are more likely to initiate dividends. We do find, however, that investors place relatively more value on dividend initiations in low paying intensity industries, suggesting that investor and firm motives for initiation are not perfectly aligned. We also find that firms in industries with higher dividend levels or higher recent change in dividend level are less likely to initiate dividends. This suggests that non-payers are reluctant to initiate dividends in an environment that might demand higher and increasing dividends. Abnormal stock returns around dividend initiation reveal higher average returns for initiators in low dividend change industries. Thus, there is closer alignment of investor and firm incentives in this case although firm motives are likely to preserve flexibility to determine dividend levels, while investor motives are likely for increased supply of dividends. OLS regression analysis of the impact of industry dividend structure on the initiation level yields a positive coefficient on industry median dividend level, which is consistent with an attempt by new payers to match their peers in choosing the level at which to initiate the dividend.

The results in this paper enhance our understanding of how firms make the dividend initiation decision. We demonstrate that the industry structure of dividends has significant impacts on both the likelihood and level of dividend initiation. We also find that stock price revisions around dividend initiations are significantly related to industry dividend structure variables. Overall, our evidence indicates that both firms and investors consider dividend policy of industry peers in making and evaluating the dividend initiation decision, and suggests an industry equilibrium dividend policy.

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