

A TEST OF THE CATERING THEORY OF DIVIDENDS: EMPIRICAL EVIDENCE FROM AN EMERGING ECONOMY INDIA

Nishant B. Labhane

School of Management, National Institute of Technology Warangal – 506004, TS, India

E-mail: nishant.labhane@hotmail.com

ABSTRACT

The present study examines the catering theory of dividends proposed by M. Baker and J. Wurgler in 2004 for 781 sample firms listed on National Stock Exchange (NSE) in India during 1994–1995 to 2014–2015. The dividend premium, a proxy to measure the time-varying investors' desire for dividends, is captured in each year during the study period. The dividend premium is negative for most of the years of the study period which is consistent with the previous research studies in the U.S. The results for the relationship between the dividend payment variables and the investors' demand for dividend indicate that when the dividend premium is high the non-dividend paying firms initiate dividend payment in the following year whereas, when the dividend appear at the stock market dividend discount the dividend-paying firms omit (not continue) paying dividend in the subsequent year. The empirical results suggest that the decision to initiate and continue dividend payment have strong predictive power for the future excess share returns of dividend-paying firms over non-dividend paying firms. Thus, our results support the notion that the managers of Indian firms cater rationally to investors demand for dividends by paying dividends when investors place a premium on dividend-paying firms and vice versa.

Keywords: dividends, dividend policy, catering theory of dividend, dividend premium, investor sentiment

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INTRODUCTION

Corporate dividend policy refers to the payout policy that a company follows in determining the size and pattern of cash distributions to the shareholders over time. The research on corporate dividend policy has captured the maximum attention from the financial economists since the emergence of Miller and Modigliani (1961) dividend irrelevance theorem. On the basis of a set of perfect capital market assumptions (e.g., no taxes, transaction and agency costs, and free and full availability of information) the dividend irrelevance theorem posits that in a perfectly competitive world, investment policy is the sole determinant of firm value, and dividend policy does not have any role in determining the value of the firm. Over the years, relaxing all these unrealistic assumptions taken by Miller and Modigliani (1961), a large number of studies have been carried out on firms' dividend policy to answer two broad research questions such as: (i) does dividend policy affect the value of the firm, and (ii) what are the major factors that determine the dividend policy of the company?

The research on these issues has led to number of competing theories such as tax clientele theory (Litzenberger & Ramaswamy, 1979), signaling theory (Bhattacharya, 1979; Aharony & Swary, 1980; Asquith & Mullins, 1983), agency theory (Jensen & Meckling, 1976; Rozeff, 1982; Easterbrook, 1984), and firm life cycle theory (Grullon, Michaely, & Swaminathan, 2002; DeAngelo, DeAngelo, & Stulz, 2006; Bulan & Subramanian, 2009; Denis & Osobov, 2008), to explain the dividend policy of the companies. The tax clientele theory states that investors in low tax bracket prefer the high dividend paying stock and vice versa. The advocates of signaling theory argue that the payment of dividend conveys private information about firms' current and future prospectus to the investors. The agency cost theory views that dividend payments would reduce the agency problem arising between the shareholders and managers. The life cycle theory of dividends argues that more mature firms are more likely to pay dividends due to higher accumulated profits, retained earnings and fewer growth opportunities as compared to young firms.

Baker and Wurgler (2004a) give a different explanation regarding why firms pay dividends by proposing a new theory of dividend policy. In their catering theory of dividend Baker and Wurgler (2004a) suggest that the firms' managers cater rationally to the time-varying investors' demand for dividends by paying dividends to the investors when they put a premium on dividend-paying stocks and vice versa. They construct several proxies reflecting the dividend premium to capture time-varying investors' demand for dividends. Baker and Wurgler (2004a) find a positive relationship between the rate of dividend initiation and

the dividend premium, and also observe that the propensity to pay dividends as suggested in Fama and French (2001) is positively related with the dividend premium.

The research interest in this new catering theory of dividends is growing since the seminal paper of Baker and Wurgler's (2004a) and many researchers (see Baker & Wurgler, 2004b; Hoberg & Prabhala, 2009; Li & Lie, 2006; Neves, Pindado, & De La Torre, 2006; Ferris, Jayaraman, & Sabherwal, 2009; Jiang, Kim, Lie, & Yang, 2013; Tangjitprom, 2013) have examined the influence of the catering incentives on the firms decision to pay dividends. Most of the previous studies have investigated the impact of catering incentives on dividend policy decisions in developed capital markets like United States (Baker & Wurgler, 2004a; Baker & Wurgler, 2004b; Julio & Ikenberry, 2004; Hoberg & Prabhala, 2005; Li & Lie, 2006; Kale, Kini, & Payne, 2012) and to some extent in the U.K. (Ferris, Sen, & Yui, 2006) whereas, there are few studies examining the catering effect of dividends in emerging capital markets (Tangjitprom, 2013). Also, the empirical results of previous studies are mixed and far from conclusive to explain whether the investors desire for dividends influence the dividend payment decisions. Therefore, it is important to test the catering theory of dividends in emerging capital markets like India and examine whether the catering theory of dividends is able to explain the dividend policy decisions.

The present study examines whether the catering incentives of dividends can influence firms' dividend payment decisions in India during 1994–1995 to 2014–2015. The remainder of the article is organised as follow: The article first reviews the empirical literature on catering incentives and dividend policy; then it specifies the variables employed in the study; next it describes the model specification and methodology; then it describes the data and characteristics; next it discusses the empirical results of the study; and finally the article concludes the study.

LITERATURE REVIEW

This section reviews empirical literature on how the time-varying investors' desire for dividends as captured by dividend premium can influence firms' dividend payment decisions. The empirical literature on the influence of catering incentives of dividends on dividend payment decisions is not very large. Considering the non-financial and non-utilities U.S. firms data collected from COMPUSTAT during 1962–2000, Baker and Wurgler (2004a) find that the dividend payment decision, i.e. to initiate or to omit dividends is determined by prevailing investor preference for dividends and managers rationally cater to investors demand for

dividends by paying dividends to investors when they put a share price premium on dividend-paying firms and by not paying dividends to investors when they prefer non-dividend paying firms.

Further, Baker and Wurgler (2004b) investigate the impact of catering incentives on the determination of propensity to pay the dividends and detect a total of four distinct trends specifically two appearances and two disappearances between 1963 and 2000 in the propensity to pay dividends. The term “propensity to pay” is defined as the difference between the actual percentage of dividend payers and the expected percentage of dividend payers based on prevailing sample characteristics (Fama & French, 2001). They find a strong connection between these four trends in the propensity to pay dividends and the corresponding variation in the stock market dividend premium which is a proxy for catering incentives. When the investors place a premium on dividend payers, managers cater to investors demand for dividends by paying dividends and the propensity to pay dividends arise. The propensity to pay dividends decline when the stock market dividend premium is negative and investors place demand for “growth stocks”, i.e. characteristically non-dividend paying firms.

Julio and Ikenberry (2004) find that the proportion of dividend-paying firms decline from 32% in 1984 to 15% in 2001 and the trend reversed when the proportion of firms paying dividends rose steadily to 20% by 2004 but did not find any compelling evidence for catering hypothesis. Hoberg and Prabhala (2005) also examine the “disappearing dividends” puzzle by using the sample and methodology of Fama and French (2001) and find that after controlling the risk factor catering incentives are no more significant in explaining the disappearing dividends puzzle among U.S. firms. Ferris et al. (2006) show that the propensity to pay a dividend has declined in the U.K. during 1988–2002, and it could be due to the shift in the catering incentives. Investigating whether investors demand for dividends have any influence on dividend payout, Hsieh and Wang (2006) examine the factors affecting the corporate payout policy for sample industrial firms in the U.S. They find that the dividend premium a proxy capturing investor’s demand for dividends significantly positively affects the dividend payout ratio.

Kale et al. (2012) find the evidence for most of the major theories of dividend policy such as residual, transaction costs, tax clientele, agency, and signaling in their logistic regression at a varying level during 1979–1998. In addition, they investigate Baker and Wurgler (2004a) catering theory of dividends and find a positive correlation between the dividend premium a proxy for investors’ sentiment for dividends and the dividends initiation decision and thus, support the catering theory of dividends. Examining a sample of non-financial and non-

utilities firms during 1963–2000, Li and Lie (2006) reveal that the stock market dividend premium that investors place on dividends have a significant positive impact on the dividend change decision and the magnitude of the dividend change decision. Further, they find that the dividend premium influences the stock market reaction to dividend changes and while making the decision to change dividend levels, the managers catering to investors' demand for dividends are rewarded by the capital market.

Using the Generalized Method of Moments (GMM), Neves et al. (2006) examines the influence of investor's demand for dividends on corporate dividend policy of a sample of non-financial firms across several eurozone countries during 1986–2003 and finds the presence of catering effect only in the companies with high liquid assets and the positive effect of catering is present only in the companies with valuable investment opportunities. Further, he finds that the firms with high free cash flow cater more considerably to their investors' demand for dividends. Examining the effect of dividend catering at international level Ferris et al. (2009) investigate a sample of 25,000 firm-year observations across 23 countries during 1995–2004 and find that the propensity to pay dividends varies considerably at the global level. As proposed by catering theory of dividends the probability of firms paying dividends increases with the increase in the dividend premium and the firms in common law countries cater more to their investors' demand for dividends than those in civil law countries. He also finds that the catering effect persists in the payment of dividends even after controlling for the life cycle effect.

Vieira (2011) analyses the impact of investor sentiment on market reaction to announcements of dividend change for the U.K. and French markets during 1994–2002 and for the Portuguese market during 1988–2002 and finds the evidence that when investor sentiment is increasing, the market reaction to announcements of dividend change is more sensitive to dividend increases for the U.K. market and it is less sensitive to dividend decreases for the French market. However, for the Portuguese market, he did not find any evidence for the influence of investor sentiment on market reaction to announcements of dividend change. Examining 15,022 firms and 156,469 firm-years data, Jiang et al. (2013) apply catering theory of dividends proposed in Baker and Wurgler's (2004a) to share repurchases during 1963–2010 and find that the probability of firms to initiate or continue share repurchases is directly associated with the share repurchase premium which is in line with the assumption that firms cater to the time-varying investors' demand for share repurchases. Lin, Lin and Liu (2012) examine the information content of dividend changes by considering the catering incentives of dividends during 1993–2006 for the U.S. firms and find that the investors demand

for dividend outweighs signaling process and provide signals to the managers to change the dividends only when the investors appraise the dividend changes.

After reviewing the available literature on catering effect of dividends we find certain research gaps in this issue. First, most of the previous research studies have largely focused on developed capital markets such as the U.S. and to some extent the U.K. In an Indian context, to date most of the previous studies have tried to figure out the factors affecting dividend payment decisions of Indian listed firms taken from the traditional theories of dividend policy such as tax clientele, signaling, agency cost, and life cycle theory of dividends (see Bhat & Pandey, 1994; Mohanty, 1999; Kumar, 2006; Singhania & Gupta, 2012; Labhane & Mahakud, 2016a; 2016b). But to best of our knowledge, there is no existing study that has investigated the catering effect of dividends on the dividend payment decisions of listed companies in emerging capital markets like India. Second, the results obtained in previous research studies in developed capital markets are mixed and far from conclusive regarding the impact of catering incentives on the dividend policy decisions. Therefore, it is important to investigate the catering effect of dividends in emerging capital markets like India.

VARIABLES

Proxies Capturing the Dividend Premium

Baker and Wurgler (2004a) specify several proxies for measuring the difference between market prices of companies with different dividend policies but with similar investment policies which reflect the dividend premium. They define four proxies to measure the dividend premium which according to them can explain the noticed fluctuation in dividend payment through the different time period. These four proxies are defined in the following way.

The first and the most important proxy is the dividend premium. The relative market valuation of dividend-paying firms versus non-dividend paying firms is captured by the proxy dividend premium. It is computed in the following way: Every year t , the equally-weighted or value-weighted average market-to-book ratio for dividend-paying firms and the average for non-dividend paying firms are calculated. The dividend premium (DP^{P-NP}_{t-1}) is the difference between the natural logarithm of these averages. The market-to-book ratio is equal to the market value of equity divided by the book value of equity. The ratio can either be equally-weighted or value-weighted across dividend-paying firms and non-dividend paying firms. Thus, the dividend premium (DP^{P-NP}_{t-1}) can be defined as the difference between the log-normally distributed equally or value weighted

average market-to-book ratio of dividend-paying firms and non-dividend paying firms:

$$DP_t^{P-NP} = \ln\left(\sum_i w_{ii}^p \frac{M_{ii}^p}{B_{ii}^p}\right) - \ln\left(\sum_i w_{ii}^{np} \frac{M_{ii}^{np}}{B_{ii}^{np}}\right) \quad (1)$$

where

DP_t^{P-NP}	=	Dividend premium in a given year t ,
w_{ii}^p	=	Weight of firm i in the subset of dividend paying firms in a given year t ,
M_{ii}^p	=	Market value of equity of firm i in the subset of dividend paying firms in year t ,
B_{ii}^p	=	Book value of equity of firm i in the subset of dividend paying firms in year t ,
w_{ii}^{np}	=	Weight of firm i in the subset of non-dividend paying firms in a given year t ,
M_{ii}^{np}	=	Market value of equity of firm i in the subset of non-dividend paying firms in year t ,
B_{ii}^{np}	=	Book value of equity of firm i in the subset of non-dividend paying firms in year t

Baker and Wurgler (2004a) contend that managers cater to prevailing investors' demand for dividends by paying dividends when investors put a stock premium on dividend-paying firms and by not paying dividends when investors prefer non-dividend paying firms. Baker and Wurgler (2004a) in their empirical study found that the dividend premium is highly correlated with the changes in the propensity to pay dividends. To understand these investors' demand for dividends which is time-varying Baker and Wurgler review articles from *The New York Times* and notice that the dividend premium is negative when investors put the demand for growth stocks, i.e. commonly the non-dividend paying firms. On the other hand dividend premium is positive when the investors' demand for "safe" stocks are high complying the crashes in growth stocks. The "safe" stocks are the stocks that render regular payments of cash dividends instead of hope regarding future profitability, i.e. usually the dividend-paying firms.

Apart from dividend premium as the main proxy Baker and Wurgler define three other proxies to measure investor's sentiments. The second proxy is based on the different forms of dividend payment, i.e. cash dividend and stock dividend and it is defined as the price difference between Citizens Utilities' (CU) cash-dividend and stock-dividend share classes over the period 1962–1989.

Between 1956 and 1989 the CU had two classes of shares that differed in the form of dividend payment and not in the level of payouts. The third proxy is the recent dividend initiation's average three-day announcement effect. The assumption is that when the investors prefer dividends, their reaction to dividend initiation observed by the announcement effect will be positive. The fourth proxy is the difference between the future excess share returns of dividend-paying firms and non-dividend paying firms. There will be a negative correlation between the rate of dividend initiation and the difference between the future stock return of dividend-paying firms and non-dividend paying firms when the firms exploit market mispricing by initiating dividends. Due to the data constraint, we have mostly used the dividend premium for the analysis and the difference between the expected excess stock return of payers and the non-payers variable has been used to know whether the stock return differences are driven by the dividend payment decision or not.

Dividend Payment Variables

The dividend payment variables used in our study is based on the dividend payment measures defined in Baker and Wurgler (2004a). Dividend payers are the firms that pay a positive dividend in year t , whereas, non-payers are the firms that pay zero dividends in year t . Following Baker and Wurgler (2004a) the firm-level data is aggregated into useful time series data by using two aggregate identities: first specifies the number of payers and the second depicts the evolution.

$$Payers_t = New Payers_t + Old Payers_t + List Payers_t \quad (2)$$

$$Old Payers_t = Payers_{t-1} - New Nonpayers_t - Delist Payers_t \quad (3)$$

where

- $Payers$ = the total numbers of dividend-paying firms in current year t ;
- $New Payers$ = the number of initiators i.e. the firms that do not pay any dividend in previous year $t - 1$ but start to pay any dividends in current year t ;
- $Old Payers$ = the number of dividend-paying firms in current year t that also paid dividends in previous year $t - 1$;
- $List Payers$ = the number of dividend-paying firms in current year t that were not in the sample in previous year $t - 1$;

New Nonpayers = the number of non-dividend paying firms in current year t among dividend-paying firms in previous year $t - 1$;

Delist Payers = the number of dividend-paying firms in previous year $t - 1$ that are not in the sample in current year t .

The *List Payers* and *List Non-Payers* are the firms that are added to the National Stock Exchange (NSE) whereas; the *Delist Payers* and *Delist Non-Payers* are the firms that are removed from the NSE. In Baker and Wurgler's catering model, investors classify firms on the basis of whether they pay dividends and not on the basis of how much dividends they pay. We now define three dividend payment variables that capture the dividend payment dynamics as specified in Baker and Wurgler (2004a).

$$Initiate_t = (New Payers_t) / (Nonpayers_{t-1} - Delist Nonpayers_t) \quad (4)$$

$$Continue_t = (Old Payers_t) / (Payers_{t-1} - Delist Payers_t) \quad (5)$$

$$Listpay_t = (List Payers_t) / (List Payers_t - List Nonpayers_t) \quad (6)$$

The dividend initiation rate, *Initiate* is defined as the proportion of surviving non-dividend paying firms from previous year $t - 1$ that become new dividend-paying firms in current year t . *Continue* is the rate at which firms continue paying dividends and it is defined as the proportion of surviving dividend-paying firms from previous year $t - 1$ that continue to pay a dividend in the current year t also. The continuation rate can be defined as one minus the rate at which the firms omit dividend payments. The *Listpay* variable is self-explanatory that is the rate at which new lists in the sample pay *Listpay*. These variables *Initiate*, *Continue* and *Listpay* consider the firms' decision whether to pay or not to pay dividends and not how much dividends to pay. The study has not taken into consideration the firms that are newly listed or delisted from the stock exchange. Therefore, we have not measured the *Listpay* variable. To measure the initiation and continuation rate the default value for the delist payers and delist non-payers have been taken as zero.

MODEL SPECIFICATIONS AND METHODOLOGY

Model Specification

To examine the basic relationship between the dividend payment variables and the investors' demand for dividend which is measured by the equal-weighted or value-weighted dividend premium the following models are estimated:

$$Initiate_t = \alpha + \beta DP^{P-NP}_{t-1} + \varepsilon_t \quad (7)$$

$$Continue_t = \alpha + \beta DP^{P-NP}_{t-1} + \varepsilon_t \quad (8)$$

where $Initiate_t$ is the dividend initiation rate and it is defined as the proportion of surviving non-dividend paying firms from previous year $t - 1$ that become new dividend-paying firms in current year t ; $Continue_t$ is the rate of continuation and it is defined as the rate at which firms continue paying dividends and it is defined as the proportion of surviving dividend-paying firms from previous year $t - 1$ that continue to pay dividend in current year t also; Alternatively, continuation rate can be defined as one minus the rate at which the firms omit dividend payments; DP^{P-NP}_{t-1} is the equal-weighted or value-weighted dividend premium and is defined as the difference between the log-normally distributed equally-weighted or value-weighted average market-to-book ratio of dividend-paying firms and non-dividend paying firms; α is a constant; β is the slope coefficient; and ε_t is the error term in period t .

It may happen that apart from the dividend premium, a proxy measuring investor's demand for dividends, there are other variables that may affect the rate of initiation and continuation. For the robustness of the results, we inculcate other variables that may affect the dividend payment decision apart from the dividend premium variables in the Equations (7) and (8). These variables include the average market-to-book ratio, dividend yield, tax and year. These models are as specified in the following equations:

$$Initiate_t = \alpha + \beta_1 VWDP^{P-NP}_{t-1} + \beta_2 VWNonpayersMBR_{t-1} + \beta_3 VWDYLD_{t-1} + \beta_4 DDT_{t-1} + \beta_5 YEAR_{t-1} + \varepsilon_t \quad (9)$$

where $Initiate_t$ is as explained in Equation (7), $VW DP^{P-NP}_{t-1}$ is value-weighted dividend premium which is defined as the difference between the log-normally distributed value-weighted average market-to-book ratio of dividend-paying firms and non-dividend paying firms; $VW Nonpayers MBR_{t-1}$ is the value-weighted averaged market-to-book ratio of non-dividend paying firms; $VW DYLD_{t-1}$ is value-weighted average dividend yield and the dividend yield is defined as the ratio of annual dividend paid per share to market price per share; DDT_{t-1} is the ratio of dividend distribution tax to the net profit after tax; $YEAR_{t-1}$ is the calendar year; α is a constant; β_s are the slope coefficient; and ε_t is the error term in period t .

$$Continue_t = \alpha + \beta_1 VWDP^{P-NP}_{t-1} + \beta_2 VWPayersMBR_{t-1} + \beta_3 VWDYLD_{t-1} + \beta_4 DDT_{t-1} + \beta_5 YEAR_{t-1} + \varepsilon_t \quad (10)$$

where $Continue_t$ is as explained in Equation (8); VW Payers MBR_{t-1} is the value-weighted average market-to-book ratio of dividend-paying firms; $VW DP^{P-NP}_{t-1}$, $VW DYLD_{t-1}$, DDT_{t-1} , and $YEAR_{t-1}$ are as explained in Equation (9); α is a constant; β_s are the slope coefficient; and ε_t is the error term in period t . In order to examine whether the dividend payment decisions such as the decision to initiate or continue dividend payment have predictive power for the relative future excess share returns of dividend-paying firms over non-dividend paying firms we estimate following two equations:

$$Y_t = \alpha + \beta Initiate_t + \varepsilon_t \quad (11)$$

$$Y_t = \alpha + \beta Continue_t + \varepsilon_t \quad (12)$$

where the dependent variable Y_t in Panel A of Table 6 is equal to the differences in returns between dividend-paying firms r_p and non-dividend paying firms r_{NP} . The dependent variable Y_t in Panel B of Table 6 are the returns of dividend paying firms r_p . The dependent variable Y_t in Panel C of Table 6 are the returns of non-dividend paying firms r_{NP} ; In Panel A of Table 6, $r_{Pt+i} - r_{NPt-i}$ is the difference between i -year ahead future return on value-weighted indexes of dividend-paying firms and non-dividend paying firms where $i = 1, 2$ and 3 ; R_{t+i} indicate the cumulative future return from $t + 1$ year through $t + i$ year. In Panel B of Table 6, r_{Pt+i} is the i -year ahead future return of dividend-paying firms where $i = 1, 2$ and 3 . In Panel C of Table 6, r_{NPt-i} is the i -year ahead future return of non-dividend paying firms where $i = 1, 2$ and 3 . Payers, i.e. dividend-paying firms are those firms that pay positive dividend in year t . Non-payers, i.e. non-dividend paying firms are the firms that pay zero dividends in year t . $Initiate_t$ and $Continue_t$ are as explained in Equations (7) and (8), respectively; α is a constant; β is the slope coefficient; and ε_t is the error term in period t .

Methodology

We regress the rate of dividend initiation and continuation on the equally and value-weighted measure of dividend premium. The ordinary least square (OLS) regression analysis method is used to estimate the Equations (7) and (8) in order to investigate the basic relationship between the dividend payment variables and the dividend premium measuring investor's demand for dividends. We report the value of OLS coefficients in Table 4. Again, the Equations (9) and (10) are estimated by utilising the OLS regression analysis method and we report in Table 5 the value of OLS coefficients.

The univariate regression of future excess returns of dividend-paying firms over non-dividend paying firms on the rate of initiation and continuation are

carried out in order to investigate the influence of decision to initiate or continue dividend on the future excess returns of dividend-paying firms over non-dividend paying firms. Again, the OLS regression analysis method is used to estimate the Equations (11) and (12) and the values of OLS coefficients are reported in Table 6.

DATA AND CHARACTERISTICS

Data

The empirical study is primarily based on the data collected from the PROWESS database maintained by the Centre for Monitoring Indian Economy (CMIE) which is a leading business and economic database and research company in India. The period of study is from the financial year 1994–1995 to 2014–2015. In India, the government considers its financial year from 1 April to 31 March midnight. Henceforth, the financial year 1994–1995 will be referred as 1995 and accordingly, the financial year 2014–2015 as 2015. Presently, 1730 firms are enlisted on NSE which consists of 179 financial services firms, 28 utilities sector firms, and 35 public sector undertaking firms. Following the sample selection procedure by Fama and French (2001) and several other subsequent studies, we exclude financial services and utilities sector companies due to the differences in the accounting practices and the regulation norms followed by these companies. Public sector undertaking companies are excluded from the sample as the dividend policies of these companies are highly influenced by government financial considerations and social obligations. Out of the remaining 1488 non-financial services, non-utilities sector, and non-public sector companies, we obtain maximum possible data of all explanatory variables without missing values for 781 companies. Hence, our final samples for empirical study in this article consist of 781 companies.

Characteristics

In order to examine the impact of investors' demand for dividends on dividend payment decision we construct dividend premium variable similar in Baker and Wurgler (2004a) a proxy to capture investors' sentiments for dividends. In this case, we measure the difference between the market prices of companies with different dividend policies but with similar investment policy, i.e. dividend premium. Table 1 presents equal and value-weighted dividend premium from 1994–1995 through 2014–2015. To measure dividend premium, we first calculate the market-to-book ratio for sample firms during 1995–2015 where the market-to-book ratio is calculated as the market value of equity divided by the book value of

equity. Then each year we take equal and value-weighted averages of market-to-book ratio separately for dividend-paying firms and non-dividend paying firms. The difference between the logs of these averages is the dividend premium.

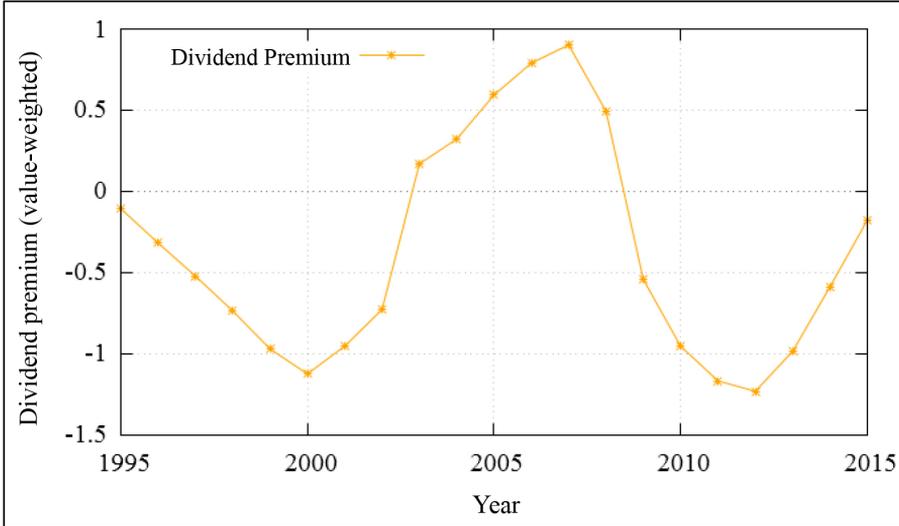


Figure 1. Dividend premium (value-weighted)

Figure 1 plots the value-weighted dividend premium for 1995–2015. The dividend-paying firms start with the dividend discount in the first year of the sample. When the lognormally distributed average market-to-book ratio of dividend-paying firms is lower than non-dividend paying firms, i.e. the difference between the lognormally distributed average market-to-book ratio of dividend-paying firms and non-dividend paying firms is negative, we infer that the stocks of the dividend-paying firms are trading at dividend discount relative to the non-dividend paying firms and vice versa. The stocks of dividend-paying firms sale at dividend discount relative to that of non-dividend paying firms from 1995 to 2002. The dividend premium is positive during the period from 2003 through 2008 which suggests that the stocks of dividend-paying firms are trading at dividend premium relative to that of non-dividend paying firms during 2003–2008. Again from 2009 through 2015 the dividend premium falls and the dividend-paying firms appear to trade at dividend discount. The dividend premiums are negative for most of the years of the study which is consistent with the previous research studies in the U.S. (see Baker & Wurgler, 2004b).

Table 1
Equal and value-weighted dividend premium, 1995 to 2015

Year	Payers		Non-payers		Dividend premium DP^{P-NP}_{t-1}	
	<i>EW MBR</i>	<i>VW MBR</i>	<i>EW MBR</i>	<i>VW MBR</i>	<i>EW</i>	<i>VW</i>
1995	-4.934	-3.824	-1.003	-2.285	-0.186	-0.107
1996	-4.982	-4.558	-4.564	-4.728	-0.418	-0.318
1997	-5.195	-4.818	-4.171	-4.371	-0.689	-0.522
1998	-5.163	-4.933	-5.801	-6.095	-0.731	-0.737
1999	-4.531	-4.474	-5.191	-5.066	-0.789	-0.971
2000	-5.288	-5.149	-5.330	-4.440	-0.944	-1.125
2001	-5.523	-5.434	-5.337	-5.362	-1.023	-0.954
2002	-5.354	-5.283	-3.444	-3.555	-0.491	-0.728
2003	-4.996	-4.777	-8.091	-5.099	0.043	0.169
2004	-4.933	-4.534	-3.988	-4.164	0.239	0.322
2005	-4.614	-4.118	-3.826	-3.893	0.639	0.593
2006	-4.702	-4.220	-3.972	-5.255	0.660	0.790
2007	-4.570	-4.062	-2.253	-1.976	0.746	0.902
2008	-5.878	-5.268	-5.190	-4.015	0.254	0.493
2009	-5.157	-4.610	-4.586	-2.656	-0.210	-0.543
2010	-5.174	-4.690	-4.406	-2.522	-0.571	-0.954
2011	-5.621	-5.227	-5.860	-3.926	-0.621	-1.168
2012	-5.274	-5.009	-5.064	-2.484	-0.768	-1.232
2013	-5.322	-4.999	-4.702	-2.140	-0.487	-0.986
2014	-5.107	-4.806	-4.770	-4.556	-0.581	-0.588
2015	-5.125	-4.674	-4.385	-3.303	-0.012	-0.178
Mean	-5.116	-4.736	-4.568	-3.900	-0.283	-0.373
Standard Deviation	0.341	0.434	1.390	1.197	0.538	0.680

Note: Payers are those firms that pay positive dividend in year t ; Non-payers are the firms that pay zero dividends in year t ; The market-to-book ratio is equal to market value of equity divided by the book value of equity; The ratio can either be equally weighted or value-weighted across dividend-paying firms and non-dividend paying firms; The dividend premium (DP^{P-NP}_{t-1}) can be defined as the difference between the log-normally distributed equally or value weighted average market-to-book ratio of dividend-paying firms and non-dividend paying firms; *EW MBR* is equally weighted average market-to-book ratio; *VW MBR* is a value-weighted average market-to-book ratio.

Table 2
Initiation and continuation rate, 1994–1995 to 2014–2015

Year	Payers			Non-payers			Payments rate	
	Total	New	Old	Total	New	Old	<i>Initiate</i>	<i>Continue</i>
1995	621	32	459	160	39	203	0.15	0.83
1996	627	43	582	154	38	118	0.27	0.94
1997	605	26	562	176	50	130	0.17	0.90
1998	553	15	513	228	76	165	0.09	0.85
1999	508	16	466	273	63	225	0.07	0.84
2000	514	44	441	267	37	244	0.16	0.87
2001	495	22	426	286	47	259	0.08	0.83
2002	471	20	395	310	53	286	0.07	0.80
2003	488	48	389	293	20	291	0.15	0.83
2004	520	50	420	261	10	261	0.17	0.86
2005	562	58	445	219	11	213	0.22	0.86
2006	597	43	475	184	13	181	0.20	0.85
2007	599	27	483	182	24	167	0.15	0.81
2008	602	29	488	179	27	162	0.16	0.81
2009	554	20	457	227	70	169	0.11	0.76
2010	592	61	458	189	22	178	0.27	0.83
2011	580	26	459	201	35	174	0.14	0.78
2012	520	14	417	261	73	195	0.07	0.72
2013	512	27	401	269	36	241	0.10	0.77
2014	542	30	470	239	47	213	0.13	0.85
2015	564	36	450	217	32	194	0.16	0.81
Mean	554	33	460	227	39	203	0.15	0.83
Standard Deviation	47	14	49	47	20	48	0.06	0.05

Note: Payers are those firms that pay positive dividend in year t ; Non-payers are the firms that pay zero dividends in year t ; New Payers are the firms that do not pay any dividend prior to current year t but start to pay any dividends in current year t ; Old Payers are the number of dividend-paying firms in current year t that also paid dividends in previous year $t - 1$; New Non-payers are the number of non-dividend paying firms in current year t among dividend-paying firms in previous year $t - 1$; Old Non-payers are the number of non-dividend paying firms in current year t that do not pay any dividends in previous year $t - 1$ also; The dividend initiation rate *Initiate* is defined as the proportion of surviving non-dividend paying firms from previous year $t - 1$ that become new dividend-paying firms in current year t ; *Continue* is the rate at which firms continue paying dividends and it is defined as the proportion of surviving dividend-paying firms from previous year $t - 1$ that continue to pay dividend in the current year t also.

Table 2 presents the total, new and old numbers of dividend-paying firms and non-dividend paying firms during the period 1994–1995 to 2014–2015. It also indicates the value of the dividend payment variables used in the study, i.e. the rate of initiation and continuation during 1995–2015. The rate at which firms initiate and continue dividend payment does not show any clear trend rather they vary throughout the period of study 1995–2015. The rate of continuation is higher than that of initiation rate whereas, the rate of initiation is more volatile than the continuation rate from 1995 to 2015. Figure 2 plots the value-weighted dividend premium and the rate of initiation from 1995 to 2015.

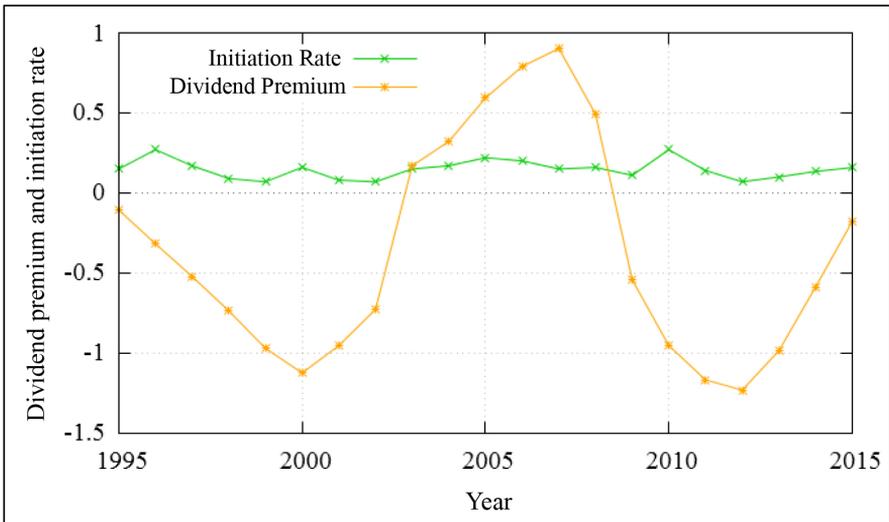


Figure 2. Dividend premium (value-weighted) and initiation rate

RESULTS AND DISCUSSION

Table 3 shows the correlation coefficients among value-weighted dividend premium ($VWDP^{P-NP}_{t-1}$), equal weighted dividend premium ($EWDP^{P-NP}_{t-1}$), future excess return ($r_{Pt+1} - r_{NPt+1}$) and cumulative future excess return ($R_{Pt+3} - R_{NPt+3}$). The extent to which these four variables capture the investors demand for dividends, we expect that the value-weighted and equal-weighted dividend premium to be positively correlated with each other and negatively correlated with future excess returns of dividend-paying firms over non-dividend paying firms.

As expected, there is significant strong and positive correlation of value-weighted dividend premium with that of the equal-weighted dividend premium. In addition, both the value-weighted and the equal-weighted dividend premium are

negatively but insignificantly correlated with the cumulative future excess returns of dividend-paying firms over non-dividend paying firms from $t + 1$ through the $t + 3$ period.

Table 3
Correlation matrix for dividend premium and future returns variables

	Dividend premium		Future returns	
			$r_{Pt+1} - r_{NPt+1}$	$R_{Pt+3} - R_{NPt+3}$
$VWDP^{P-NP}_{t-1}$	1.000			
$EWDP^{P-NP}_{t-1}$	0.949***	1.000		
$r_{Pt+1} - r_{NPt+1}$	-0.001	-0.115	1.000	
$R_{Pt+3} - R_{NPt+3}$	-0.323	-0.254	0.199	1.000

Note: The dividend premium (DP^{P-NP}_{t-1}) is defined as the difference between the log-normally distributed equally or value-weighted average market-to-book ratio of dividend-paying firms and non-dividend paying firms; $VW DP^{P-NP}_{t-1}$ is value-weighted dividend premium; $EW DP^{P-NP}_{t-1}$ is equally weighted dividend premium; $r_{Pt+1} - r_{NPt+1}$ is the difference between one year ahead future return on value-weighted indexes of dividend-paying firms and non-dividend paying firms; $R_{Pt+3} - R_{NPt+3}$ is cumulative difference in future returns from year $t + 1$ to $t + 3$; *** indicates significance at 1% level, ** indicates significance at 5% level and * indicates significance at 10% level.

Table 4 presents the results for the basic relationship between the dividend payment variables and the investors’ demand for the dividend. Panel A of Table 4 shows the results for determination of the initiation rates based on Equation (7) whereas, Panel B of Table 4 shows the results of regression analysis for the rate of continuation based on Equation (8). The first column of Panel A indicates that the value-weighted dividend premium has a positive relationship with the initiation rate and is significant at the 5% level of significance. The result suggests that an increase of one standard deviation in the value-weighted dividend premium is related to a 1.380 percentage point increase in the rate of initiation in the subsequent year. The value-weighted dividend premium is able to explain 18.70% of the time-series variation in the initiation rate.

The second column of Panel A shows that the equal-weighted dividend premium has a similar impact on the initiation rate as that of the value-weighted dividend premium. The equal-weighted dividend premium is statistically significant at 5% level of significance and has a positive association with the rate of initiation rate. The value of R^2 suggests that a 24.30% time-series variation in the rate of initiation is explained by the variation in equal-weighted dividend premium. The first and second column of Panel B depicts that both the value-weighted as well as equal-weighted dividend premium is statistically significant at 10% level of significance. This result indicates that the value-weighted dividend premium, as well as the equal-weighted dividend premium, has an impact on the

rate of continuation in the subsequent year. Overall, the results suggest that when the dividend premium is high the non-dividend paying firms *Initiate* dividend payment in the following year whereas, when the dividend appear at the stock market dividend discount the dividend-paying firms *omit* (not *Continue*) paying dividends in the subsequent year.

Table 4
Payment of dividend and investors' sentiments for dividends: Basic relationships

	Panel A: <i>Initiate</i> _{<i>t</i>}		Panel B: <i>Continue</i> _{<i>t</i>}	
<i>VW DP</i> ^{<i>P-NP</i>} _{<i>t-1</i>}	1.380** (2.332)		1.216* (1.837)	
<i>EW DP</i> ^{<i>P-NP</i>} _{<i>t-1</i>}		1.550** (2.556)		1.407* (1.723)
R ²	0.187	0.243	0.150	0.167
N	20	20	20	20
F-statistics	F(1,18) = 5.437 (0.033)	F(1,18) = 7.597 (0.014)	F(1,18) = 0.701 (0.415)	F(1,18) = 0.180 (0.677)

Note: The dividend initiation rate *Initiate* is defined as the proportion of surviving non-dividend paying firms from previous year $t - 1$ that become new dividend-paying firms in current year t ; *Continue* is the rate at which firms continue paying dividends and it is defined as the proportion of surviving dividend-paying firms from previous year $t - 1$ that continue to pay dividend in the current year t also; The dividend premium (DP^{P-NP}_{t-1}) is defined as the difference between the lognormally distributed equally-weighted or value-weighted average market-to-book ratio of dividend-paying firms and non-dividend paying firms; $VW DP^{P-NP}_{t-1}$ is value-weighted dividend premium; $EW DP^{P-NP}_{t-1}$ is equally-weighted dividend premium; R² is the R-squared value; N is the number of observations; The figures in the parentheses are the *t*-statistics; *** indicates significance at 1% level, ** indicates significance at 5% level and * indicates significance at 10% level.

To examine the robustness of the results obtained from the estimation of regression model based on Equations (7) and (8) in Table 4 we include other control variables in Equations (7) and (8). These control variables are value-weighted averaged market-to-book ratio of non-dividend paying firms in Panel A and value-weighted averaged market-to-book ratio of dividend-paying firms in Panel B and value-weighted average dividend yield, dividend distribution tax and calendar year in both the Panels A and B of Table 5. Table 5 shows the results of the estimation of a regression model based on Equations (9) and (10). Panel A in Table 5 reports the results for the relationship of the initiation rate with the share market measure of investor's desire for dividends, i.e. dividend premium and other control variables whereas, Panel B in Table 5 reports the results for the relationship of the continuation rate with the dividend premium and other control variables.

Table 5
Payment of dividend and investors' sentiments for dividends: Other controls variables

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: <i>Initiate_t</i>						
<i>VW</i>	0.036* (1.843)	0.031* (1.828)	0.042* (1.794)	0.0258* (1.752)	0.004* (1.731)	0.011* (1.902)
<i>VW Nonpayers MBR_{t-1}</i>	-0.022** (-2.200)	-0.026** (-2.470)	-0.032** (-2.370)			
<i>VW DYLD_{t-1}</i>				1.745** (2.027)	3.453*** (6.516)	4.625*** (5.602)
<i>DDT_{t-1}</i>		2.457 (1.597)	2.712 (0.607)		5.579 (2.458)**	1.358 (0.272)
<i>YEAR_{t-1}</i>			0.007 (1.307)			0.011 (0.977)
N	20	20	20	20	20	20
R ²	0.358	0.421	0.457	0.328	0.541	0.624
Panel B: <i>Continue_t</i>						
<i>VW</i>	0.024* (1.733)	0.101* (1.851)	0.204* (1.705)	0.024* (1.753)	0.007* (1.808)	0.001* (1.869)
<i>VW Payers MBR_{t-1}</i>	0.009 (1.158)	0.003 (0.795)	0.010 (1.497)			
<i>VW DYLD_{t-1}</i>				-1.241* (-1.850)	-1.191*** (-4.277)	-2.260*** (-5.312)
<i>DDT_{t-1}</i>		-6.633*** (-7.713)	-2.100 (-0.851)		-7.943*** (-10.650)	-1.624 (-0.826)
<i>YEAR_{t-1}</i>			-0.007 (-1.021)			-0.010 (-0.870)
N	20	20	20	20	20	20
R ²	0.087	0.736	0.778	0.152	0.790	0.892

Note: $VWDP^{NP-NP}_{t-1}$ is value-weighted dividend premium which is defined as the difference between the log-normally distributed value-weighted average market-to-book ratio of dividend-paying firms and non-dividend paying firms; *VW Payers MBR_{t-1}* and *VW Non-payers MBR_{t-1}* are the value-weighted averaged market-to-book ratio across dividend-paying and non-dividend paying firms respectively where, the market-to-book ratio is defined as the market value of equity divided by the book value of equity; *VW DYLD_{t-1}* is value weighted average dividend yield where dividend yield is defined as the ratio of annual dividend paid per share to market price per share; *DDT_{t-1}* is the ratio of dividend distribution tax to the net profit after tax; *YEAR_{t-1}* is the calendar year; The dividend initiation rate *Initiate_t* is defined as the proportion of surviving non-dividend paying firms from previous year $t - 1$ that become new dividend-paying firms in current year t ; *Continue_t* is the rate at which firms continue paying dividends and it is defined as the proportion of surviving dividend-paying firms from previous year $t - 1$ that continue to pay dividend in the current year t also; The figures in the parentheses are the t -statistics; R² is the R-squared value; N is the number of observations; *** indicates significance at 1% level, ** indicates significance at 5% level and * indicates significance at 10% level.

Table 6

Dividend payment decision and investor sentiment for dividends: Predicting returns, 1995 to 2015

	<i>Initiate_t</i>				<i>Continue_t</i>			
	Coefficient	<i>p</i> -value	R ²	N	Coefficient	<i>p</i> -value	R ²	N
Panel A: Relative Returns								
$r_{Pt+1} - r_{NPt+1}$	-7.818**	0.018	0.220	21	-7.146***	0.000	0.247	21
$r_{Pt+2} - r_{NPt+2}$	-3.796*	0.058	0.078	21	-14.161**	0.0324	0.226	21
$r_{Pt+3} - r_{NPt+3}$	-5.082*	0.067	0.020	21	-7.397	0.350	0.093	21
$R_{Pt+3} - R_{NPt+3}$	-18.34***	0.001	0.174	21	-2.434	0.409	0.043	21
Panel B: Payers Returns								
r_{Pt+1}	-0.497	0.764	0.002	21	-0.970	0.681	0.005	21
r_{Pt+2}	-1.303	0.770	0.003	21	-3.865	0.293	0.018	21
r_{Pt+3}	2.854	0.563	0.025	21	-0.402	0.948	0.003	21
R_{Pt+3}	0.977	0.689	0.011	21	0.210	0.935	0.003	21
Panel C: Non-Payers Returns								
r_{NPt+1}	-4.963	0.395	0.081	21	-7.015	0.213	0.107	21
r_{NPt+2}	1.800	0.679	0.010	21	-2.894	0.362	0.018	21
r_{NPt+3}	1.876	0.539	0.018	21	-0.613	0.891	0.001	21
R_{NPt+3}	-1.285	0.845	0.001	21	-10.523*	0.056	0.085	21

Note: $r_{Pt+i} - r_{NPt+i}$ is the difference between i -year ahead future return on value-weighted indexes of dividend-paying firms and non-dividend paying firms where $i = 1, 2$ and 3 ; R_{t+i} indicate the cumulative future return from $t + 1$ year through $t + i$ year; r_{Pt+i} is the i -year ahead future return of dividend-paying firms where $i = 1, 2$ and 3 ; r_{NPt+i} is the i -year ahead future return of non-dividend paying firms where $i = 1, 2$ and 3 ; Payers i.e. dividend paying firms are those firms that pay positive dividend in year t ; Non-payers, i.e. non-dividend paying firms are the firms that pay zero dividends in year t ; The dividend initiation rate $Initiate_t$ is defined as the proportion of surviving non-dividend paying firms from previous year $t - 1$ that become new dividend-paying firms in current year t ; $Continue_t$ is the rate at which firms continue paying dividends and it is defined as the proportion of surviving dividend-paying firms from previous year $t - 1$ that continue to pay dividend in the current year t also; R² is the R-squared value; N is the number of observations; *** indicates significance at 1% level, ** indicates significance at 5% level and * indicates significance at 10% level.

It may happen that the non-dividend paying firms initiate paying dividend not because of a relative market price premium on dividend-paying stocks but due to lower investment opportunities available. Therefore, for robustness of the results, we consider two measures of investment opportunities the average market-to-book ratio and value-weighted dividend yield. The results in Panel A of Table 5 indicate that the non-dividend paying firms are less likely to initiate dividends when the average market-to-book ratio is high and the dividend yield is low. The residual explanatory power of dividend premium for the initiation rate become insignificant once average dividend yield enters into the model. For the

continuation rate in Panel B, these two variables enter with the opposite sign from that in Panel A and the dividend premium variable remains significant.

Next, to test if the firms' managers are catering to tax clienteles, we examine the effect of inclusion of dividend distribution tax on the residual explanatory power of dividend premium. The results in Panel A show that even after the inclusion of dividend distribution tax the dividend premium coefficient remains significant at 5% level for initiation rate and the dividend distribution tax is positively associated with the rate of initiation. Also, for the continuation rate, the dividend premium coefficient remains significant at 5% level. When we include a common time trend, i.e. calendar year with the dividend premium, the coefficient on the dividend premium for the initiation rate as well as for the continuation rate remains significant at 5% level in both the Panels A and B respectively of Table 5.

Table 6 presents the results for the relationship between the dividend policy and our second proxy capturing investors' demand for dividends, i.e. the future excess share returns of dividend-paying firms over non-dividend paying firms. It shows the univariate regressions of future excess share returns of dividend-paying firms over non-dividend paying firms. Each panel in Table 6 investigates one-, two-, and three-year ahead future share returns and cumulative three-year future share return. The dependent variable in Panel A of Table 6 is the difference between the future share returns on value-weighted indexes of dividend-paying firms and non-dividend paying firms. In order to investigate whether the relative returns results are certainly coming from the difference in returns as the theory underlines, or from dividend-paying or non-dividend paying firms returns alone, we separately look at the returns on dividend-paying and non-dividend paying firm. Panel B in Table 6 shows the future share returns of dividend-paying firms; whereas Panel C shows the future share returns of non-dividend paying firms as the dependent variable.

It is observed from the results obtained in Panel A of Table 6 that for the relative future share returns the decision to initiate dividend payment, i.e. initiation rate has strong predictive power. If the initiation rate increases by one standard deviation it would forecast a decrease in the relative future share returns of dividend-paying firms of eight percentage points in the following year, and 18 percentage points over the following three years. This is a considerable magnitude indicating that the firm's managers are catering investor's demand to some extent. The result in Panel A of Table 6 also indicates that the decision to continue dividend payment, i.e. continuation rate has similar strong predictive power for the relative future share returns. The results for payers and non-payers

returns in Panels B and C, respectively of Table 6 indicate that the dividend payment decisions do not have any predictive power for the returns of dividend-paying or non-dividend paying firms alone. As per the theory, it is the relative future excess share returns of dividend-paying firms over non-dividend paying firms that matters the most.

CONCLUSIONS

The present study examines the catering theory of dividends proposed by Baker and Wurgler (2004a) for 781 sample firms listed on NSE in India during 1994–1995 to 2014–2015. The dividend premiums, a proxy to measure the time-varying investors' desire for dividends, are captured in each year during the study period. The dividend premiums are negative for most of the years of the study which is consistent with the previous research studies in the U.S. The rate of initiation and continuation are calculated to measure the firms' decision whether to pay or not to pay dividends. The rate at which firms initiate and continue dividend payment does not show any clear trend rather they vary throughout the period of study 1995–2015. The rate of continuation is higher than that of initiation rate whereas, the rate of initiation is more volatile than the continuation rate from 1995 to 2015.

The results for the basic relationship between the dividend payment variables and the investors' demand for dividend suggest that when the dividend premium is high the non-dividend paying firms *initiate* dividend payment in the following year whereas, when the dividend appear at the stock market dividend discount the dividend-paying firms *omit* (not *continue*) paying dividends in the subsequent year. The decision to initiate and continue the dividend payment, i.e. rate of initiation and continuation respectively have strong predictive power for the future excess share returns of dividend-paying firms over non-dividend paying firms. Thus, our results support the notion that managers of Indian firms cater rationally to investors demand for dividends by paying dividends when investors place a premium on dividend-paying firms and vice-a-versa. This study has implication for the management. The investors in the Indian capital market show a preference for dividend payment. The firms' manager could use these catering incentives in deciding dividend payment to investors.

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