Dividend Tax Effects – Evidence from India

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Abstract[*]: This paper studies changes in retail investor portfolios following a 2002 change in dividend tax law in India which impacted the retail investors more favorably than other investors. We also examine if firms change their dividend policies to suit the altered tax incentives of retail investors. We use the share of retail investors in a firm to indicate their preference to hold stocks of that firm relative to other investors' preference. Using difference-in-difference methodology, we find strong evidence to support that retail investors do rebalance their portfolios to take advantage of their relatively favorable tax status. We also find that firms' dividend policies are not impacted by retail investors' shareholdings.

1.   Introduction

The existence of dividend tax effects is a highly debated topic for the last five decades. On one hand, Modigliani (1982) argues that investors would prefer capital gains to dividends if capital gains tax was lower. On the other hand, Miller and Scholes (1982) argue that such dividend tax effects do not exist. Over the years the debate has continued without conclusive evidence on either side. Moser and Puckett (2009) show that tax-advantaged institutions change their preferences when the tax rate difference between dividend tax and capital gains tax changes. At the same time, Blouin, Raedy and Shackleford (2011) shows that retail investors in the US do not rebalance their portfolios when tax laws change to give them a relative advantage over other investors in dividend taxes. These studies examine the dividend tax effect in developed markets where the investor protection laws are stronger compared to developing markets (La Porta, Silanes, Shleifer and Vishny (1998)). However, in countries with weaker investor protection laws, the disciplining mechanism of dividends on managers (Easterbrook (1984) and Jensen (1986)) may become more important, thereby diluting the relative importance of tax effects of dividends. Furthermore, omitted variable bias is also another issue prevalent in most of the existing literature.

In this paper, we study the existence of dividend tax effects in India which has weaker shareholder protection than most developed markets (La Porta, Silanes, Shleifer and Vishny (1998)). We utilize the natural experiment provided by the change in dividend tax law in India in 2002 to examine whether investors factor in the dividend taxes while taking investment decisions. We use the difference-in-difference methodology to examine whether retail investors rebalance their portfolios when a change in dividend tax laws impacted the retail investors more favorably compared to other investors. The difference-in-difference methodology allows us to mitigate the issue of possible bias induced by time invariant omitted variables. Further, we examine whether firms change their dividend policies to suit the altered tax incentives of retail investors. We also control for the possibility that the investor demand for dividends and the firm response to investor demand may be endogenous.

We use the share of retail investors in a firm to denote their preference to hold a firm's stock relative to the preference of other investors. Evidence from our multivariate tests shows that the retail investors do rebalance their portfolios to move towards more tax advantageous stocks. We control for the endogeniety between investor and firm response by running our

tests for those firms which did not change their dividends, thereby making the firm's dividend policy exogenous to retail investors' investment decision.

We use the changes in dividend yields of a firm as a measure of the firm's propensity to change the dividend policy in order to align it with the altered tax incentives of retail investors. We find that changes in the dividend yields of firms are independent of retail investors' shareholding. We control the possible endogeniety between firm and investor response by running the tests on only those firms where changes in retail investors' share of the firm was very low. We find that our results hold even after controlling for endogeniety.

This study contributes to the existing literature by providing evidence that retail investors do consider dividend taxes while making their investment decisions even in a country where investor protection laws are weaker. This result is contrary to what Blouin, Raedy and Shackleford (2011) find regarding retail investors in the US in a similar setting. To the best of our knowledge, this is also the first study in an Indian context which controls for the possibility that the investor demand for dividends and firm responses to such demand may be endogenous. Considering the repeated changes in tax laws, this study would be useful for the regulators in determining the potential effects of any new law under consideration. The study is also important for any potential investors in India since the portfolio rebalancing by retail investors would help them in evaluating the extent to which dividend taxes can affect their investments.

The rest of this paper is structured as follows. Section 2 discusses prior research in this area and how our study differs from them; Section 3 develops the hypotheses that we test in the paper; Section 4 provides a description of the data; Section 5 discusses the research design and results; and Section 6 concludes the paper.

2.   Literature Review

Different tax rates for dividends and capital gains would change the net post-tax returns in the hands of the investors. Depending on their tax status, this may, in turn, change their preferred form of payout. Farrar and Selwyn (1967), Brennan (1970), Black (1976) and Modigliani (1982) argue that shareholders would prefer capital gains to dividends if the capital gains tax was lower. This posits a negative relationship between dividend preferences of taxable investors and dividend tax rates applicable to them thereby arguing for dividend clienteles based on their tax status. Some studies show the existence of such dividend tax clienteles

thereby implying that investors in higher tax brackets prefer shares with low dividend payouts and vice versa (Elton and Gruber (1970), Pettit (1977) and Litzenberger and Ramaswamy (1982)). Poterba and Summers (1984) use British data on frequent changes in the tax regime to establish that tax changes do affect investors' perceived value of dividends.

However, the dividend tax clientele theory is not without criticism. Lakonishok and Vermaelen (1983) use Canadian data to show that price changes on ex-dividend day reflect the effects of short-term trading activities and not the relative tax rate differences in dividends and capital gains. Similarly, Miller and Scholes (1982) argue that differential yields between high-dividend and low-dividend stocks are not due to the differences in tax rates between dividends and capital gains. Collins and Kemsley (2000) argue that shareholders cannot avoid the dividend taxes as they are implicitly priced in share prices. According to them, investors factor in both dividend and capital gains taxes in share prices.

Despite five decades of research on the topic, the debate is far from over. Recent studies have such as Moser & Puckett (2009) and Blouin, Raedy & Shackleford (2011) utilize the changes in dividend tax laws to study the existence of dividend tax clienteles. Moser and Puckett (2009) analyze the changes in dividend tax rates and capital gains tax rates. The difference in the two tax rates gives a measure of how tax disadvantaged (advantaged) dividends are on average. They term this measure dividend tax penalty and examine the changes in the investment portfolio of tax-advantaged and tax-disadvantaged institutions, as this dividend tax penalty changes. They find that tax-advantaged institutions do prefer stocks with higher dividend yields when the dividend tax penalty is high. Blouin, Raedy and Shackelford (2011) study the effects of the 2003 tax rate reduction on dividends for retail investors in the US on how these investors rebalance their portfolios and how managers change dividend yields to realign them with investor needs. They find that retail investors (except insiders) do not rebalance their portfolios in order to maximize their post-tax returns, and that firms increased dividend distributions following the change in the tax law to retain or attract higher interest from retail investors.

This paper studies another tax law change in India which impacts retail investors more favorably compared to other categories of investors. This implies that the net post-tax returns to retail investors would be higher than that to other investors for dividend paying stocks. We examine whether retail investors rebalance their portfolios to move towards more tax-advantaged stocks as they would if they consider dividend taxes to be important. At the same

time, we also study the possibility that firm managers may also change the dividend policies of their firms as they may try to bring the dividend policies in alignment with their shareholders' preferences.

Our study differs from existing literature in two ways. Firstly, we study the investment behavior of retail investors in India where the investor protection laws are much weaker (La Porta, Silanes, Shleifer and Vishny (1998)). The weaker investor protection laws may make the agency effects of dividends (Easterbrook (1984) and Jensen (1986)) much more prominent as compared to tax effects. Secondly, we use the difference-in-difference methodology which allows us to mitigate the effects of possible biases induced by time invariant omitted variables.

3.   Hypothesis Development

When tax laws change, they can change the incentives of the investors to hold certain stocks if they have a differential impact on post-tax returns of investors. A differential impact on post-tax returns may cause the investors with higher post-tax returns in a particular segment of stocks to move towards that segment and vice versa. Such rebalancing in investor portfolios may occur even if the effective tax rate of the marginal investor does not change. We study one such change in dividend tax laws in India which impacted post-tax returns of investors differentially. Table 1 shows the applicable tax laws as amended by Finance Act announced in a particular year.

-----------------------Insert Table 1 here---------------------

The change which is of interest is the one amended by the 2002 Finance Act. This Act made dividends taxable at normal income tax rates in the hands of the investor changing it from a flat dividend distribution tax of 10% applicable to the firm distributing the tax. This change caused the effective dividend tax rates for all institutional investors to increase to 30% since they were charged a flat income tax of 30% on their normal income. However, instead of a flat tax rate, retail investors were taxed in a slab structure wherein the applicable tax rate started at zero and keeps increasing, up to a maximum of 30%, as the taxable income of the investor increased. This slab structure of taxation caused the effective tax rates for retail investors to be lower than 30% as the part of income which is below the threshold limit of higher applicable tax rates is taxed at the lower tax rates. Additionally, some retail investors

do not have enough income to reach the highest tax rate bracket of 30%. Hence, the effective average tax rate for retail investors is lower than 30%. Figure 1 explains this pictorially. The solid horizontal lines for all years except for the financial year (FY) 2002-03 indicates that although dividend tax rates have changed over the years, the effective tax rates are same for all categories of investors. In FY 2002-03, the solid horizontal line at the top of the bar indicates an effective tax rate of 30% for all entities except the retail investors. The shaded bar indicates that effective tax rate for retail investors is not constant but can vary from 0% to 30% depending on the taxable income of the investor.

-----------------------Insert Figure 1 here--------------------

This implies that the tax disadvantage on dividends is lesser for retail investors than it is for other investors[1,2]. Rational retail investors would then realize that they have higher post-tax returns from dividend paying stocks as compared to other investors. This would increase retail investors' preference for dividend paying stocks relative to the preference of other investors. This higher relative preference would cause the retail investors to rebalance their portfolios in favor of dividend paying stocks after the tax law change is announced. Since the Finance Act was announced on February 28, 2002, but the annual firm data is available for March 31, 2002, any such change in retail investor portfolios would be captured only in the annual data of firm ownership for the Financial Year (FY hereafter) 2002.

We use the share of retail investors in a firm to capture their preference to hold a company's stock relative to the preference of other investors[3]. An increased preference for dividend paying stocks by retail investors should translate into an increase in the share of retail investors in firms which pay dividends. This leads us to our first hypothesis.

Hypothesis 1: The shareholding patterns of dividend paying firms would show an increased share of retail investors in the financial year 2002.

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[1] We acknowledge that this is not true for all retail investors as those with very high incomes would be close to an effective tax rate of 30%. However, this measurement error makes it difficult for us to find a statistically significant result.
[2] When promoters are individuals, they are also taxed at same slab rates as retail investors. However, they are not included in retail investors for this analysis since promoter' incomes are normally so high compared to other retail investors that their effective tax rates are close to the flat tax rates of 30%. Moreover, the motivations of promoters to hold a stock might differ from those of retail investors and may not vary with dividend tax rates.
[3] Since the total shareholding of all investors combined is constant at 100%, the share of retail investors in a firm is a measure of their preference for the stock relative to the preference of other investors

It is also possible that managers of firms would change their dividend policies in order to align them with the altered tax incentives of their retail investors (Blouin et al (2011)). If the managers do wish to change dividend policies to align them with the incentives of retail investors, then they would increase dividends so that the retail investors can get higher dividend yields. This tendency of managers to increase the dividend yields should be higher for firms where the proportion of retail investors is high. This leads us to our second hypothesis.

> **Hypothesis 2: The changes in dividend yields of firms would be positively related to the proportion of their shareholding by retail investors in the financial year 2002.**

The reader might argue that an opposite effect should be seen for 2003, since in 2003 the tax law reverted to dividend taxes being paid by the firm distributing the tax. This argument would have been true if that had been the only tax law change; but in 2003, the long-term capital-gains tax on equities was also removed. This encouraged all investors to invest more in equities. The individual effect of two law changes being announced in the same Finance Act is difficult to predict as the impact of removal of long-term capital gains tax may be different for different categories of investors. Thus, we do not make any prediction about the investor behavior in 2003[4].

4.   Data Description

We collect data from CMIE Prowess database for all firms available on the database from FY 2001 till FY 2007. We extract interim and final dividends data and add these two to arrive at the total dividends distributed during a year by a firm.

Table 2 explains all the variables of interest and provides their descriptive statistics. All continuous variables have been winsorized at 1 and 99 percentiles.

-----------------------Insert Table 2 here---------------------

Retail Ownership in firms varies from 1.79% to 74.14%. The mean retail ownership is 24.42%. There is a wide variation in dividend yield as well which varies from 0% to 15.34%,

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[4] In robustness checks though, we show that the results in 2003 are as expected opposite in sign to those in 2002.

having a mean of 2.42%. We can see from the table above that all variables of interest have wide variation.

Table 3 shows the correlation matrix between the primary variables of interest. We can see from the table that multi-collinearity is not a cause for concern in this study.

-----------------------Insert Table 3 here---------------------

5.   Research Design and Empirical Results
5.1   Primary Results

<u>Hypothesis 1</u>

We employ a difference-in-difference methodology to test our hypotheses. This helps us in mitigating concerns about any time invariant omitted variables biasing our results since the effect of all such variables would be removed when we take the difference across time. We use the share of retail investors in a firm to denote their preference to hold the stock relative to other investors. Change in this variable from FY 2001 to FY 2002 represents how the retail investors' preference to hold stocks relative to other investors changes when the tax law changes. We use the change in the share of retail investors in a firm as the dependent variable. The primary explanatory variable is Divdum (a dummy variable which takes a value of 1 if a firm pays dividends and 0 otherwise). Hypothesis 1 posits that the change in the share of retail investors in a firm must be higher for dividend paying firms than for non-dividend paying firms. Thus, we expect the coefficient on this dummy variable Divdum to be positive and statistically significant.

The control variables are summarized below. Annual Return on a stock is used to control for the propensity of retail investors to consider past returns before making investment decisions [Graham and Kumar (2006)]. Vol is defined as the daily average trading volume as a proportion of its total outstanding shares. The average volume has been measured for the 90 days prior to the financial year end on March 31. Volume has been used to control for the effect of trading volumes on ownership decisions of investors. Beta is defined as the CAPM beta of the firm and is used to control for systematic risk of the firm. Ln(MVE) is defined as the natural log of the market value of equity for the firm and is used to control for firm size. MktToBk is defined as the ratio of a firm's market value of equity to its book value of equity. Book value of equity has been calculated as the sum of paid-up capital and Reserves and Funds. MktToBk has been included to control for growth characteristics of the firm.

Leverage is defined as the ratio of debt to book value of equity and has been included as a control for financial structure of the firm.

Column 1 of Table 4 shows the results. We can see that the coefficient on the Divdum is positive and statistically significant at 1% level. The coefficient value of 1.74 implies that on an average retail investors increased their shareholding in dividend paying firms by 1.74 percentage points after the tax law was changed. Compared to the median retail investor shareholding of 22.2%, a change of 1.74% is economically significant.

-----------------------Insert Table 4 here--------------------

Since firm managers may also change their dividends in order to align them with the interests of their shareholders, the changes in retail investors' ownership and dividend policy of the firm are endogenous variables. We address this endogeniety concern by running the above regression for only those firms where the firm managers do not change the dividends paid out[5]. This makes the dividend policy of the firm exogenous. We replace the dummy variable Divdum with another dummy variable Nodivchgdum which takes a value of 1 when the company pays dividend but does not change its dividend and a value of 0 when the company does not pay dividends at all. We expect the coefficient on this new dummy variable to be positive and statistically significant. Column 2 of Table 4 shows the results of this regression. We can see that the coefficient on the Nodivchgdum is positive and statistically significant even after controlling for endogeniety. The magnitude of coefficient has changed only marginally (1.76 from 1.74). One possible reason for this small change could be that a change in a firm's dividend policy does not cause any economically significant change in the retail investors' behavior. Another explanation for the small change in magnitude is that even in our original results without controlling for this endogeniety, there was little impact of managerial policy actions. The results of our second hypothesis would make the reason clear.

Hypothesis 2

We use change in dividend yield as a measure of a firm's inclination to change dividend policy to align it with shareholders' tax incentives. We take yield in this case and not raw changes in dividends since investors would consider dividend yield to be more important than raw dividends. If managers want to influence investor behavior, they would target a metric

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[5] We use constant raw value of dividends rather than dividend yields since changes in market value of firms would cause a change in the dividend yields without an active change in dividend payments by firm managers.

that shareholders would consider to be important. We take a dummy variable Retaildum (which equals 1 when retail ownership in a firm is greater than median retail ownership in all firms and 0 otherwise) as our primary explanatory variable. According to hypothesis 2, the tendency of managers to increase dividend yields would be higher for firms with a higher proportion of retail ownership. Thus, hypothesis 2 posits that the coefficient on Retaildum must be positive and statistically significant.

We include NIchg as a control variable, which is the percentage change in Net Income of a firm, to control for income available for appropriation to the firm. We drop Vol from the list of control variables as we do not see any theoretical reason why trading volume should impact dividend policy. Other control variables have been retained from Table 4. Column 1 of Table 5 shows the results of this regression. We can see from the Table that the coefficient on Retaildum is not statistically significant.

-----------------------Insert Table 5 here---------------------

As in the case of hypothesis 1, retail investors' portfolio rebalancing might cause an endogeniety issue. We address this concern by doing the regression for only those firms where the absolute change in retail investors' share in the firm is less than 25th percentile point (less than 0.6 percentage points). We believe that such a small change does mitigate the endogeniety issue by making the changes in retail investors' share exogenous[6]. The results of this regression are shown in Column 2 of Table 5. We find that the coefficient on Retaildum is not statistically significant even after controlling for endogeniety. Thus, we conclude that firms do not alter their dividend policies to align them with the altered tax incentives of retail investors. This result could be explained by the highly fragmented nature of retail investors which implies that retail investors may not have any power to influence management.

Our results support the dividend tax clientele theory by providing evidence that retail investors do rebalance their portfolios towards tax-advantaged stocks. However, we do not find support for the hypothesis that firm managers change their dividend policies to align them with altered tax incentives of the retail investors. A possible reason for this could be the difference in shareholder protection laws in India and US. India has weaker shareholder

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[6] This would not be true if the sensitivity of firm response to retail investors' portfolio rebalancing is very high. If this were the case, this would have biased the results in favor of our finding a statistically significant positive coefficient when we run the regression without endogeniety control. But we have already seen that the coefficient on retaildum is not statistically significant in column 1 of table 5.

protection laws [La Porta, Silanes, Shleifer and Vishny (1998)] compared to the US; also retail investors in India are fragmented and thereby have little power on firm management. The two factors combined may allow firm managers in India to ignore retail investors' incentives.

5.2 Robustness Tests

Hypothesis 1

We conduct two robustness tests for our primary results for hypothesis 1 reported in Table 4. The first test is to dispel the possibility that our results in Table 4 are driven by a skewed distribution of dividend paying firms. To ensure that this is not the case, we divide all dividend paying firms into three categories based on their dividend yields. Firms which have dividend yield less than 30th percentile point of dividend yields are classified as Low-Dividend firms. Firms which have dividend yields between 30th percentile and 70th percentile points are classified as Medium-Dividend firms. Firms which have dividend yields higher than the 70th percentile point are classified as High-Dividend firms. We create a dummy variable for each of these categories. Lowdivdum, Meddivdum and Highdivdum are dummy variables which take a value of 1 if the firm is Low-Dividend firm, Medium-Dividend firm and High-Dividend firm respectively and 0 otherwise. All three dummy variables take a value of zero for firms which do not pay dividend. We replace the Divdum by these three dummy variables and run the primary regression again. If our results are robust and not driven by skewed distribution of dividend paying firms, then we should see both the magnitude of coefficient and its statistical significance increasing as we move from Lowdivdum to Highdivdum. Table 6 shows the results of this regression.

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We can see that the coefficients on Medivdum and Highdivdum are positive and statistically significant. The coefficient for Highdivdum is also stronger than the coefficient on Medivdum in both magnitude and statistical significance. However, we find that the coefficient on Lowdivdum is not statistically significant. This implies that investors do not consider the tax benefits from low dividend paying firms to be substantial enough to rebalance their portfolios. We should mention here that the dividend yield on all firms in the Low-Dividend category were lower than 1.65%. The small dividend yields in such firms might imply that the benefit of higher post-tax returns in such stocks compared to other

investors may not be enough to overcome the transaction costs associated with the trades required to rebalance the portfolios. This would explain why the investors do not rebalance their portfolios for stocks with low dividend yields.

The second robustness test is to establish that the results in 2002 are driven by the tax law changes and not some time-varying omitted variable[7]. If our results are due to the changes in dividend tax law in 2002, then we should not find statistically significant positive coefficient on Divdum in years when tax law did not change in favor of retail investors. To test this, we run the same regression as given in Column 1 of Table 4 for the years 2003 to 2007. Table 7 shows the coefficients and their statistical significance.

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Table 7 shows that we do not find a statistically significant positive coefficient on Divdum in any of the years 2003 to 2007. Also, the coefficient in 2003 is negative and statistically significant which is expected since the relative tax benefit to retail investors was removed in 2003 and dividends were taxed at a flat rate again. This would imply that compared to the year 2002, retail investors were worse off in 2003 and hence would rebalance their portfolios in the opposite direction. We also find a statistically significant negative coefficient in 2005. One possible explanation for this result is that retail investors were moving away from high dividend stocks towards high capital gains stocks in order to take advantage of the bull run in the Indian markets which started in 2004 (portfolio changes would be visible in 2005 data). Further examination of 2005 results shows that there is a statistically significant positive coefficient on beta as well which indicates that retail investors were moving towards high risk stocks in 2005 which is consistent with the above reason as high risk stocks are expected to yield high capital gains during the bull market.

Hypothesis 2

We conduct another robustness test to verify that the lack of our results in hypothesis 2 is not due to lack of sufficient variation in Retaildum variable. To test this, we created two more dummy variables with higher variation. Retail30dum is a dummy variable which takes a value of 1 when retail ownership in a firm is greater than the 70th percentile point in retail ownership and a value of zero when the retail ownership in a firm is less than the 30th

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[7] Time invariant omitted variables are already accounted for in our methodology.

percentile point in retail ownership. Similarly, Retail10dum is a dummy variable which takes a value of 1 when retail ownership in a firm is greater than the 90th percentile point in retail ownership and a value of zero when the retail ownership in a firm is less than the 10th percentile point in retail ownership. The variation in retail ownership between 0 and 1 values for the new dummy variables is much sharper than the variation in Retaildum. We repeat the regression reported in Column 1 of Table 5 using these new dummy variables one at a time instead of Retaildum. Table 8 shows the results of these regressions. We can see from Table 8 that the coefficients on the dummy variables Retail30dum and Retail10dum are still not statistically significant. Thus, we confirm our finding that firms do not change their dividend policies to align them with the altered tax incentives of retail shareholders.

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5.3   Additional Tests

We examine whether the preference of retail investors for dividend paying stocks in 2002 is impacted by the changes in promoter ownership. We also examine whether retail investors' preference for dividend paying stocks is different for business-group-owned and other firms. We do not find either of these factors to be statistically significant. The results of these tests are detailed in the Appendix.

6.   Conclusions

This study examines the existence of dividend tax clienteles by studying the investment behavior of retail investors post the change in tax law of 2002 which impacted them more favorably compared to other investors. We find that in 2002 retail investors increased their shareholding in high dividend yield firms as this translated into higher post-tax returns for them vis-à-vis other investors. Thus, we find evidence supporting the existence of dividend tax clienteles in India. The study also examines if firm managers changed their dividend policy to align it with the altered tax incentives of their retail investors and finds no evidence to support this hypothesis. We control for possible endogeniety between firm and investor decisions and find that our results hold even after controlling for endogeniety.

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Figure 1: Effective dividend tax rates by year and investor type
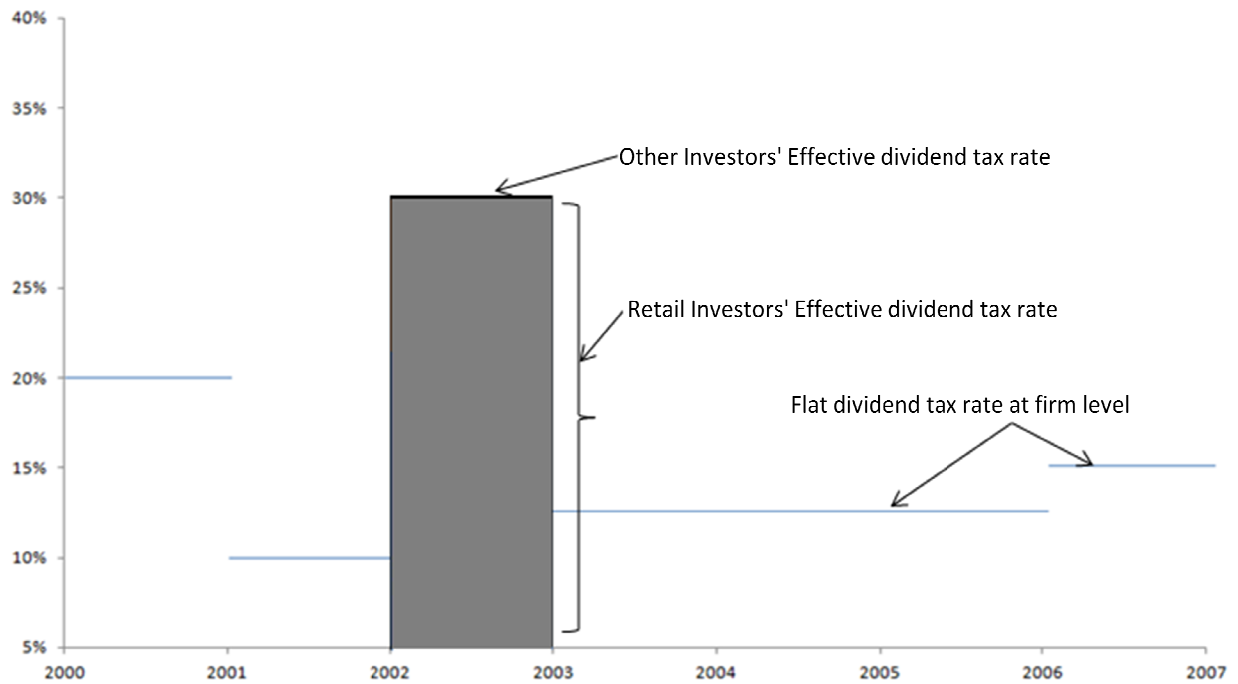
The solid horizontal lines for all years except financial year (FY) 2002-03 indicate that although dividend tax rates have changed over the years, the effective tax rates are same for all categories of investors. In FY 2002-03, the solid horizontal line at the top of the bar indicates a 30% effective tax rates for all entities except retail investors. The shaded bar indicates that effective tax rate for retail investors is not constant but can vary from 0% to 30% depending on the actual taxable income of the investor.

Table 1: Applicable Dividend Tax Rates as Amended by Finance Act every Year

Finance Act	Dividend Tax
2000	Firm pays: 20% of dividend distributed
2001	Firm pays: 10% of dividend distributed
2002	Investor pays: Normal tax rates
2003	Firm pays: 12.5% of dividend distributed
2004	-
2005	-
2006	-
2007	Firm pays: 15% of dividend distributed
2008	-
2009	-
2010	-
2011	-
2012	-
2013	-

A "-" indicates that there has been no change from the previous year by the Finance Act in that year

Table 2: Descriptive Statistics

Retail Ownership is defined as the proportion of ownership by retail investors. *Dividend Yield is* defined as the dividend divided by the market capitalization of the firm. *Vol* is defined as the daily average trading volume as a proportion of its total outstanding shares. The average has been taken for the 90 days prior to the financial year end on March 31. *Beta* is defined as the CAPM beta of the firm as extracted from the Prowess database. *MktToBk* is defined as the ratio of firm's market value of equity to its book value of equity. Ln(MVE) if the natural log of market value of equity. Book value of equity has been calculated as the sum of paid-up capital and Reserves and Funds as reported by CMIE Prowess. *Leverage* is the ratio of debt to book value of equity. Annual Return is the annual stock return as calculated on March 31.

Variable	Mean	Median	Std. Dev.	Min	Max
Retail Ownership (%)	24.42	22.20	14.38	1.79	74.14
Dividend Yield (%)	2.42	1.13	3.26	0.00	14.34
Vol (%)	0.51	0.13	1.25	0.00	9.30
Beta	0.87	0.83	0.38	0.07	1.96
Ln(MVE)	7.13	6.99	2.11	3.01	12.65
MktToBk	1.79	0.89	2.65	-1.64	16.19
Leverage	1.00	0.67	2.49	-9.50	13.25
Annual Return (%)	10.04	7.61	67.22	-199.19	176.64

Table 3: Correlation Matrix of Key Variables

Retail Ownership is defined as the proportion of ownership by retail investors. *Dividend Yield is* defined as the dividend divided by the market capitalization of the firm. *Vol* is defined as the daily average trading volume as a proportion of its total outstanding shares. The average has been taken for the 90 days prior to the financial year end on March 31. *Beta* is defined as the CAPM beta of the firm as extracted from the Prowess database. Ln(MVE) is log of market capitalization of the firm. *MktToBk* is defined as the ratio of firm's market value of equity to its book value of equity. Book value of equity has been calculated as the sum of paid-up capital and Reserves and Funds as reported by CMIE Prowess. *Leverage* is the ratio of debt to book value of equity. Annual Return is the annual stock return as calculated on March 31.

	Retail Ownership	Dividend Yield	Vol	Beta	Ln(MVE)	MktToBk	Leverage	Annual Return
Retail Ownership	1.00							
Dividend Yield	0.02	1.00						
Vol	0.10	-0.12	1.00					
Beta	0.23	-0.25	0.30	1.00				
Ln(MVE)	-0.47	-0.02	0.16	0.03	1.00			
MktToBk	-0.28	-0.15	0.07	-0.02	0.55	1.00		
Leverage	-0.07	0.03	-0.03	-0.09	0.01	0.18	1.00	
Annual Return	-0.15	-0.06	0.10	-0.09	0.32	0.28	0.04	1.00

Table 4: Changes in Retail Ownership on Dividend Dummy

This Table shows the results of regression of changes in retail ownership on Divdum and Nodivchgdum. Retail Ownership is defined as the proportion of ownership by retail investors. Divdum is a dummy variable which takes a value of 1 if a firm pays dividends and zero otherwise. Nodivchgdum is a dummy variable which takes a value of 1 if a firm pays dividend but does not change it in 2002 and 0 if the firm does not pay dividend. Annual Return is the annual stock return as calculated on March 31. *Vol* is defined as the daily average trading volume as a proportion of its total outstanding shares. The average has been taken for the 90 days prior to the financial year end on March 31. *Beta* is defined as the CAPM beta of the firm as extracted from the Prowess database. Ln(MVE) is log of market capitalization of the firm. *MktToBk* is defined as the ratio of firm's market value of equity to its book value of equity. Book value of equity has been calculated as the sum of paid-up capital and Reserves and Funds as reported by CMIE Prowess. *Leverage* is the ratio of debt to book value of equity.

	(1) Dividend Vs No dividend firms ΔRetail Ownership	(2) Constant dividend Vs No dividend firms ΔRetail Ownership
Divdum	**1.74***	
	(0.000)	
Nodivchgdum		**1.76***
		(0.002)
Annual Return	-0.75	0.45
	(0.566)	(0.738)
ΔVol	12.7	-53.5
	(0.763)	(0.596)
ΔBeta	**10.7***	**12.3***
	(0.000)	(0.000)
Δln(MVE)	**-3.08**	**-4.79***
	(0.029)	(0.007)
ΔMktToBk	0.211	0.25
	(0.305)	(0.149)
ΔLeverage	-0.03	-0.04
	(0.818)	(0.759)
Constant	-0.53	-0.52
	(0.279)	(0.334)
R Square	**0.13**	**0.16**
N	**731**	**398**

Values in parenthesis indicate p-values

*,** and *** indicate significance at 10%, 5% and 1% levels respectively

Table 5: Changes in Dividend Yield on Retail Ownership Dummy

This Table shows the results of regression of changes in dividend yields of firms on Retaildum for all firms and for only those firms where the retail ownership changes were less than 25th percentile. Dividend Yield is defined as the dividend paid by the firm divided by market capitalization of the firm. *Retaildum is a dummy variable which takes a value of 1 if retail investors' share in the firm is higher than median retail investors' share in all firms and 0 otherwise. NIchg is defined the percentage change in net income of the firm from previous year.* Annual Return is the annual stock return as calculated on March 31. *Beta* is defined as the CAPM beta of the firm as extracted from the Prowess database. Ln(MVE) is log of market capitalization of the firm. *MktToBk* is defined as the ratio of firm's market value of equity to its book value of equity. Book value of equity has been calculated as the sum of paid-up capital and Reserves and Funds as reported by CMIE Prowess. *Leverage* is the ratio of debt to book value of equity.

	(1) All firms ΔDividend Yield	(2) Firms where retail ownership changes < 0.6% ΔDividend Yield
Retaildum	-0.0027	-0.0022
	(0.229)	(0.579)
Annual Return	0.0136	-0.0180
	(0.536)	(0.230)
NIchg	0.0010**	0.0006
	(0.047)	(0.169)
ΔBeta	0.0012	0.0038
	(0.881)	(0.802)
Δln(MVE)	-0.0288	0.0074
	(0.244)	(0.582)
ΔMktToBk	0.0006	0.0003
	(0.331)	(0.592)
ΔLeverage	-0.0002	-0.0002
	(0.390)	(0.479)
Constant	-.0055***	-.0050**
	(0.001)	(0.021)
R Square	**0.13**	**0.03**
N	**731**	**239**

Values in parenthesis indicate p-values

*,** and *** indicate significance at 10%, 5% and 1% levels respectively

Table 6: Changes in Retail Ownership on High, Medium and Low Dividend firms

This Table shows the results of regression of changes in retail ownership on dummy variables for low, medium and high dividend yield firms. Retail Ownership is defined as the proportion of ownership by retail investors. Lowdivdum is a dummy variable which takes a value of 1 if a firm's dividend yield is less than 30 percentile point (1.65%) of dividend yields and zero otherwise. Meddivdum is a dummy variable which takes a value of 1 if a firm's dividend yield is between 30 percentile and 70 percentile points (4.73%) and zero otherwise. Highdivdum is dummy variable which takes a value of 1 if the firm's dividend yield is higher than 70 percentile point in dividend yields and zero otherwise. Annual Return is the annual stock return as calculated on March 31. Vol is defined as the daily average trading volume as a proportion of its total outstanding shares. The average has been taken for the 90 days prior to the financial year end on March 31. Beta is defined as the CAPM beta of the firm as extracted from the Prowess database. Ln(MVE) is log of market capitalization of the firm. MktToBk is defined as the ratio of firm's market value of equity to its book value of equity. Book value of equity has been calculated as the sum of paid-up capital and Reserves and Funds as reported by CMIE Prowess. Leverage is the ratio of debt to book value of equity.

	(1) High/Medium/Low Dividend Vs No dividend firms ΔRetail Ownership
Lowdivdum	0.70
	(0.381)
Meddivdum	**1.85***
	(0.002)
Highdivdum	**1.92***
	(0.000)
Annual Return	-0.77
	(0.569)
ΔVol	15.5
	(0.718)
ΔBeta	**10.9***
	(0.000)
Δln(MVE)	-3.01**
	(0.040)
ΔMktToBk	0.20
	(0.332)
ΔLeverage	-0.02
	(0.841)
Constant	-0.50
	(0.311)
R Square	**0.13**
N	**731**

Values in parenthesis indicate p-values

*,** and *** indicate significance at 10%, 5% and 1% levels respectively

Table 7: Changes in Retail Ownership on Dividend Dummy for Non-event Years

This Table shows the coefficient on Divdum (dummy variable which takes a value of 1 for dividend paying firms and 0 otherwise) when it is used to explain the changes in retail ownership. The regression equation is same as the one in Column 1 of Table 4. The results are shown for financial years 2003 - 2007.

Year	Coefficient on DivDum
2003	**-0.811***
	(0.008)
2004	-0.764
	(0.214)
2005	**-3.207***
	(0.000)
2006	-0.954*
	(0.086)
2007	-0.207
	(0.655)

Values in parenthesis indicate p-values

*,** and *** indicate significance at 10%, 5% and 1% levels respectively

Table 8: Changes in Dividend Yield on High Variation Retail Dummies

This Table shows the results of regression of changes in dividend yield on dummy variables which divide the sample into firms with high retail ownership Vs low retail ownership. Dividend Yield is defined as the dividend paid by the firm divided by market capitalization of the firm. *Retail10dum is a dummy variable which takes a value of 1 if retail ownership in the firm is higher than 90 percentile point in retail ownership and 0 if the retail ownership in a firm is less than 10 percentile point in retail ownership. Retail30dum is a dummy variable which takes a value of 1 if retail ownership in the firm is higher than 70 percentile point in retail ownership and 0 if the retail ownership in a firm is less than 30 percentile point in retail ownership. NIchg is defined the percentage change in net income of the firm from previous year.* Annual Return is the annual stock return as calculated on March 31. *Beta* is defined as the CAPM beta of the firm as extracted from the Prowess database. Ln(MVE) is log of market capitalization of the firm. *MktToBk* is defined as the ratio of firm's market value of equity to its book value of equity. Book value of equity has been calculated as the sum of paid-up capital and Reserves and Funds as reported by CMIE Prowess. *Leverage* is the ratio of debt to book value of equity.

	(1) ΔDividend Yield	(2) ΔDividend Yield
Retail 10dum	0.0057	
	(0.201)	
Retail30dum		-0.0024
		(0.380)
Annual Return	-0.0129	-0.0133*
	(0.386)	(0.066)
NIchg	0.0006	0.0017***
	(0.403)	(0.008)
ΔBeta	-0.0176	0.0088
	(0.213)	(0.368)
Δln(MVE)	-0.0069	0.0005
	(0.667)	(0.952)
ΔMktToBk	0.0020	0.0000
	(0.294)	(0.976)
ΔLeverage	-0.0005	-0.0003
	(0.201)	(0.294)
Constant	-0.0136***	-0.0041**
	(0.000)	(0.041)
R Square	**0.14**	**0.05**
N	**141**	**464**

Values in parenthesis indicate p-values

*,** and *** indicate significance at 10%, 5% and 1% levels respectively

Table 9: Changes in Retail Ownership on Dividend Dummy and Promoter Changes

This Table shows the results of regression of changes in retail ownership on Divdum and changes in promoter shareholding. Retail Ownership is defined as the proportion of ownership by retail investors. Divdum is a dummy variable which takes a value of 1 if a firm pays dividends and zero otherwise. Promoter is the shareholing of promoters in the firm. Annual Return is the annual stock return as calculated on March 31. *Vol* is defined as the daily average trading volume as a proportion of its total outstanding shares. The average has been taken for the 90 days prior to the financial year end on March 31. *Beta* is defined as the CAPM beta of the firm as extracted from the Prowess database. Ln(MVE) is log of market capitalization of the firm. *MktToBk* is defined as the ratio of firm's market value of equity to its book value of equity. Book value of equity has been calculated as the sum of paid-up capital and Reserves and Funds as reported by CMIE Prowess. *Leverage* is the ratio of debt to book value of equity.

	ΔRetail Ownership
Divdum	**1.42***
	(0.004)
ΔPromoter	**-0.27***
	(0.001)
Divdum * ΔPromoter	-0.10
	(0.421)
Annual Return	-0.72
	(0.499)
ΔVol	4.74
	(0.912)
ΔBeta	8.85***
	(0.000)
Δln(MVE)	-2.56**
	(0.030)
ΔMktToBk	0.21
	(0.298)
ΔLeverage	-0.03
	(0.786)
Constant	0.07
	(0.878)
R Square	**0.29**
N	**714**

Values in parenthesis indicate p-values

*,** and *** indicate significance at 10%, 5% and 1% levels respectively

Table 10: Changes in Retail Ownership on Dividend Dummy and Business Group Dummy

This Table shows the results of regression of changes in retail ownership on Divdum and business group dummy variable. Retail ownership is defined as the proportion of ownership by retail investors. Divdum is a dummy variable which takes a value of 1 if a firm pays dividends and zero otherwise. Bizgrpdum is a dummy variable which takes a value of 1 if a firm does not have a business group associated with it and 0 otherwise. Annual Return is the annual stock return as calculated on March 31. *Vol* is defined as the daily average trading volume as a proportion of its total outstanding shares. The average has been taken for the 90 days prior to the financial year end on March 31. *Beta* is defined as the CAPM beta of the firm as extracted from the Prowess database. Ln(MVE) is log of market capitalization of the firm. *MktToBk* is defined as the ratio of firm's market value of equity to its book value of equity. Book value of equity has been calculated as the sum of paid-up capital and Reserves and Funds as reported by CMIE Prowess. *Leverage* is the ratio of debt to book value of equity.

	ΔRetail Ownership
Divdum	**2.10***
	(0.000)
Bizgrpdum	1.49
	(0.147)
Divdum * Bizgrpdum	-2.06
	(0.208)
Annual Return	-0.79
	(0.550)
ΔVol	11.9
	(0.778)
ΔBeta	**10.5***
	(0.000)
Δln(MVE)	**-3.10**
	(0.029)
ΔMktToBk	0.21
	(0.305)
ΔLeverage	-0.03
	(0.792)
Constant	-0.83
	(0.121)
R Square	**0.13**
N	**731**

Values in parenthesis indicate p-values

*,** and *** indicate significance at 10%, 5% and 1% levels respectively

APPENDIX

In this appendix, we explain some additional tests that we conduct to examine whether retail investors' preference for dividend paying stocks in 2002 is impacted by other factors.

Additional Test 1

Jim and Wang (2008) show that increase in insider ownership in a firm is negatively related to future dividend payouts. This could impact the preference of retail investors to hold high dividend paying stocks. We examine whether the dividend preference of retail investors relative to other classes of investors in 2002 is impacted by changes in promoter ownership. We include the changes in promoters' equity and its interaction with the dividend dummy in the regression which is reported in Column 1 of Table 4. Table 9 shows the results of this regression. We can see from the table that there is a statistically significant negative coefficient on changes in promoter equity. This implies that when promoters increase their shareholding, the retail investors reduce their equity in the firm. However, the coefficient on the interaction term is not statistically significant. This implies that the preference of retail investors to buy high dividend stocks in 2002 is not impacted by the changes in promoters' equity in the firm.

-----------------------Insert Table 9 here---------------------

Additional Test 2

We examine whether the dividend preference of retail investors relative to other investor classes in 2002 changes on the basis of whether or not a firm is business group owned. We use the CMIE Prowess classification of firms into business groups for this purpose. We use Bizgrpdum, a dummy variable which takes a value of 0 if a firm has a specific business group name associated with it and 1 otherwise. We include Bizgrpdum and its interaction with Divdum in the regression reported in Column 1 of Table 4. Table 10 shows the results of this regression. We can see from the Table that the coefficient on Bizgrpdum and the interaction term are not statistically significant. This implies that the dividend preference of retail investors relative to other investor classes in 2002 remains unaffected by whether a firm is owned by a business group or not.

-----------------------Insert Table 10 here---------------------