Mutual Fund Dividend Policy*

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Abstract

In contrast with the large literature on firms' dividend policy, mutual fund dividend policy has received little attention. In this paper, we define mutual fund dividend policy as the policy that determines the frequency of distribution of dividends that are paid out to fund shareholders. Mutual funds' dividend policy is not as flexible as firms', because regulation essentially requires mutual funds to pay out nearly all dividends each year. However, mutual funds can still decide the frequency of dividend distributions. This paper argues that multi-dividend policy hurts mutual fund shareholders and investigates the reasons why some mutual funds distribute dividends more frequently than mandated. I propose that funds deliberately set dividend policy to increase assets under management and, thus, fee revenues. In determining their dividend policy, mutual funds need to solve two conflicts of interest: (1) between new and existing investors, and (2) within existing investors, since they may have different dividend preferences. The empirical results show that the probability of a fund choosing a multi-dividend policy is associated with fund characteristics that affect both conflicts of interest. We also find some evidence that multi-dividend policy alters the sensitivity of mutual fund net flows to the fund characteristics that affect both conflicts of interest.

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1 Introduction and Literature Review

A mutual fund[1] is defined as regulated investment company in the US.[2] As such, a mutual fund also pays dividends to its shareholders like other types of corporates.[3] However, mutual fund dividend policy is different from the dividend policy of corporates in many aspects, such as sources, distributions, and regulations. Therefore, it is surprising that mutual fund dividend policy receives no attention in contrast to the large body of literature on corporate dividend policy. This paper investigates how a mutual fund determines its dividend policy and its impact on investors.

One possible reason for the lack of academic attention to mutual fund dividend policy is that a mutual fund has less flexible dividend policy compared with a corporate. A corporate determines its dividend policy in terms of "how much, when and how" during the life of the corporate (DeAngelo et al., 2008). However, a mutual fund, as described below, is highly regulated in all aspects and has to pay out all dividends in the form of cash each year. Yet, the rule does not restrict the frequency of dividend payout. A mutual fund could pay dividends, if there is any, once or more times per year to mutual fund investors. Therefore, a mutual fund can still have a dividend policy, i.e., the number of times it pays dividends during the year.

Dividend policy varies across mutual funds. In my example, 30% of funds choose multi-dividend policy, i.e., a fund pays dividends more than once during a year. Intuitively, multi-dividend policy is costly for both investors and mutual funds. For example, there are transaction costs for mutual funds to pay dividends. Some of the costs (e.g., transference fees) might be fixed for each distribution. Therefore, a multi-dividend fund may incur higher transaction costs, which are ultimately paid by investors. Multi-dividend funds also lose fee revenue on dividends that not automatically reinvested before the end of the year. It raises an interesting and important question: Why do many funds choose to pay dividends more

[1] Throughout the paper, we use "mutual funds" or "funds" to refer to retail equity mutual funds if not specified.
[2] See http://www.sec.gov/answers/mfinvco.htm and http://www.sec.gov/answers/mutfund.htm.
[3] We use corporate to refer to the company other than regulated investment company.

than the mandated times?

One reasonable answer is that mutual funds could attract inflows to the funds and, therefore, increase fee revenue by deliberately setting dividend policy. This paper proposes that dividend policy results in, as described later, two conflicts of interest: between existing and new investors, and within existing investors with different dividend preferences. As a consequence, it is reasonable to suspect that mutual funds trade off interest within investors. This paper asks three questions: Does multi-dividend policy hurt existing investors? Do some mutual funds choose dividend policy to trade off interest within different investors? Do investors respond to dividend policy?

Retail investors have to pay income taxes on dividends received in the current year. New investors would prefer to purchase funds with less undistributed dividends and, therefore, pay less taxes. To attract new investors, some mutual funds might pay dividends more frequently than the minimum-required times (e.g., multi-dividend policy) to lower tax burdens for new investors. However, this policy might hurt existing investors who, on the contrary, prefer single-dividend policy. Therefore, mutual funds trade off interest between existing investors and new investors.

The trade-off aforementioned extends the previous literature on mutual fund agency problem. The paper shows evidence that a mutual fund might choose the optimal dividend policy to maximize its flow and revenue at the cost of investors. A mutual fund management company's compensation is mostly derived from management fees in the form of a percentage of assets under management. Mutual funds use two ways to maximize their interest: attracting more flows and/or increasing the fees. For example, Chevalier and Ellison (1997) and Busse (2001) show that fund managers alter the riskiness of portfolios depending on the fund's past performance. This operation might increase the expected inflow because of the convex shape of the relationship between performance and flows. Barclay et al. (1998) show that mutual funds trade off the welfare of their existing and new shareholders in choosing the realization policy of unrealized capital gains. These authors provide evidence on an agency problem resulting from the demand for the new investment of mutual fund man-

agers. To attract new fund inflows, fund managers may realize and pass through unrealized capital gains and reduce the tax overhang caused by unrealized gains at the cost of existing investors. More recently, Harris et al. (2012) show that some mutual funds purchase high dividend yield stocks before dividend payment dates for the purpose of increasing dividend incomes, and therefore, receiving larger inflows. Mutual funds also trade off interest within different types of investors by setting fees. Christoffersen and Musto (2002) argue that the pricing of mutual funds depends on their demand curves. As such, mutual funds might charge high fees to the certain type of investors. Gil-Bazo and Ruiz-Verdú (2008) theoretically show that some funds might charge higher fees to unsophisticated investors in equilibrium. Consistently to their prediction, Gil-Bazo and Ruiz-Verdú (2009) find a negative relation between fees and before-fee performance in the cross section of US equity funds. Moreover, Bergstresser et al. (2009) document little or no benefit from brokers when investors are charged large distribution fees.

This paper also extends the literature on the conflicting preferences of existing investors and fund strategy behavior. More specifically, I argue that mutual funds need to resolve a conflict within existing investors with different dividend preferences by choosing a dividend policy. Existing investors have different interests. Johnson (2004) documents that the transaction costs of investors depend on the investment horizons. Short-term investors transfer transaction costs to long-term investors. Christoffersen et al. (2005) show that retirement and nonretirment accounts have different tax preferences. Consequently, mutual funds make trade offs within two types of accounts. More related to our topic, differences in dividend preferences across investors are well documented in the literature (see, for example, Thaler and Shefrin, 1981; Scholz, 1992; Graham and Kumar, 2006; Becker et al., 2011). One explanation of the existence of dividend clientele is that some investors may use regular stock dividend income streams to finance consumption (Graham and Kumar, 2006; Becker et al., 2011). If this argument is true, these investors prefer not only high dividend assets but also more frequent distributions.

The empirical analysis in this paper proceeds in two parts. In the main test, I investi-

gate how dividend policy is related to fund characteristics that affect the conflicts of interest. In the second test, I examine how investors respond to multi-dividend policy. Specifically, I regress net relative flows on fund characteristics and interaction terms between fund characteristics and dummy for multi-dividend policy.

The main results are summarized as follows. First, I find evidence that mutual funds deliberately choose dividend policy. The dividend policy is persistent over time, and, to large extent, independent from market characteristics, i.e., market average stock dividend ratio. Second, I find that multi-dividend policy potentially hurts investors. Multi-dividend funds on average have more stable dividend payout ratios over time and obtain worse raw returns than single-dividend funds. The results suggest that multi-dividend funds chase dividends and hold liquid assets. Third, I document that the frequency of dividend payment is positively associated with dividend ratio, a variable that affects the conflict of interest between new and existing investors. I also find that participation costs, proxied by marketing expenses, are positively related with dividend frequency. Funds are more likely to pay dividends more frequently in the years when the risk-free interesting rates decrease. Finally, I show evidence that funds with higher dividend ratios and participation costs attract more net flows if they use multi-dividend policy, given other things equal. The investors in multi-dividend funds are less sensitive to high performance than the ones in single-dividend funds. The results are consistent with dividend clientele and those investors use dividends to finance their consumption.

The rest of the article is organized as follows. Section 2 covers the relevant background. Section 3 provides the hypotheses. Section 4 describes the data. Section 5 shows the empirical results. Finally, section 6 concludes.

2 Background

Mutual funds are categorized as regulated investment companies in the US. Under the tax rules in subchapter M of the Internal Revenue Code (IRC), mutual funds do not pay taxes on their income, i.e., dividend or interest received from asset under management, or capital

gains as long as they fulfill certain requirements. One requirement on distribution is that a mutual fund should "pass through" at least 90% of incomes to their shareholders in the US each taxable year. The mutual fund may retain up to 10% of its incomes and all capital gains, which are taxed at regulated corporate tax rate. The IRC also imposes an excise tax, at 4% rate, on mutual funds unless a mutual fund distributes 98% of its ordinary income during the calendar year before December 31 and 98% of capital gains earned in the 12-month period ending on October 31.[4] Therefore, mutual funds usually distribute nearly all dividends and realized capital gains each year to avoid unnecessary taxes.[5]

It is worthy to mention that dividend received by mutual funds and dividend received by fund shareholders are different in terms of quantity. Although mutual funds have to "pass through" dividends to their shareholders, it does not necessarily follow that shareholders receive all dividends that a mutual fund receives from its assets. A fund uses dividends received from assets under management to offset expenses. As a result, the dividend received by shareholders is the dividend received by the fund from its assets under management net of the expense. Thus, in rare cases, realized dividend frequency is not equal to scheduled frequency if the expense a fund charges is higher than the dividend it is supposed to pass through.

In this paper, we only focus on the dividend and its policy. Mutual funds typically generate three types of current of potential cash flow for investors who do not sell their shares. These are the following: (1) incomes, i.e., dividends payments, including income in the form of dividends and interest on the securities in its portfolio (minus disclosed expenses)[6]; (2) realized capital gains, i.e., appreciation of securities in value, which are already sold minus any capital losses (it includes short-term realized capital gains and long-term realized capital gains); (3) unrealized capital gains, i.e., appreciation of a fund's assets in value, which are not sold yet by fund managers. The virtue of addressing mutual fund dividends rather than capital gains (realized or unrealized) is obvious. First, a fund's dividend yields are highly

[4] See Section 852 in Subchapter M of the IRC for more details.

[5] See the chapter "Tax Features of Mutual Funds", Investment Company Fact Book, ICI, 2012, for more details.

[6] www.sec.gov/investor/pubs/sec-guide-to-mutual-funds.pdf.

representative of the fund's ex ante dividend policy because dividends are predicable. Meanwhile, a fund's capital gains and their realization are highly dependent not only on ex ante policy but also on other market factors, such as stock prices and fund flows (Christoffersen et al., 2005). Second, the dividend distribution is observable for investors from the prospectus and past fund distributions, but unrealized capital gain is not. Third, dividends have more direct and large impact on investors than capital gains (for more details, see Barclay et al. (1998) and section 3.2). Fourth, although dividends and realized capital gains have the same framework and impact on investors, dividend policy is more heterogeneous than capital gain policy across funds because mutual funds typically save realized capital gains until the end of the year because it could be used to offset capital loss, but not for dividends.

We define dividend policy as the frequency of dividend distributions that a mutual fund intends to pay out during one year. This definition is similar to, if any, dividend distribution schedules in their prospectuses. For example, the Fidelity Equity-Income Fund claims that its dividend distributions are in April, July, October, and December.[7] The scheduled frequency of the Fidelity Equity-Income Fund is four times per year. It could be seen as the promise to investors. I verify that a mutual fund should strictly follow the schedule in its prospectus, if any, to pay dividends. As the consumer service of Fidelity Investments replies to my request, "within a mutual fund's composition, cash is set aside to pay dividends to shareholders of the security. If the fund is scheduled to pay a distribution on a quarterly basis, it will pay one as long as enough cash within the fund is available." There is no reason to suspect that a fund documents a multi-dividend policy in prospectus and it actually intends to apply single-dividend policy. It is costly for the fund if such behavior is found, and investors who purchase this fund because of dividend policy might flee from the fund when they find the realized dividend policy is not the same as they expected.

[7] https://fundresearch.fidelity.com/mutual-funds/fees-and-prices/316138106.

3 Hypotheses

3.1 Does Multi-Dividend Policy Hurt Investors?

Dividend distribution is not cost-free. When a mutual fund passes dividends to its shareholders, it incurs transaction fees (e.g., transference costs). Some of the costs might be fixed for each distribution. Therefore, multi-dividend funds might need to pay more cost than single-dividend funds. These transaction fees are ultimately paid by shareholders. As a consequence, one could expect multi-dividend funds on average charge higher transaction fees than single-dividend funds. The extra charged fees may erode fund performance.

Hypothesis 1. *Multi-dividend funds underperform single-dividend funds, other things equal.*

The costs that multi-dividend policy brings is not always explicit. One important dimension of hidden costs from multi-dividend policy is tax. Figure 1 illustrates the potential cost of investing in a multi-dividend fund resulting from taxes. We assume two identical funds with different dividend policies (semiannual and annual). The expected return is zero and the reinvestment rate is 100%. The funds in both panels have the same expense ratio, 2%, and receive the same amount of dividends, 1.5%. We assume that the expense is uniformly charged during the year. Both funds receives \$0.015 dividends per each dollar from stocks in the first half year and \$0 in the second half year. At the beginning of year, an individual invests \$1 in each fund in panel A and panel B. In the middle of the year, the investor receives 0 dividend from fund A and \$0.005 from fund B. The investor holds \$0.99 of each fund. At the end of the year, the investor receives 0 dividend from each fund and holds \$0.98 of each fund. The investor pays tax on \$0.005 dividends received from fund B. As a results, the before-tax payoffs are the same for both funds in panel A and B. Yet, the fund A dominates the fund B since the investor pays taxes on the dividends that she receives.

The tax cost of multi-dividend policy results from the mismatch between the period of personal income tax and that of dividend distribution, i.e., personal income tax is calculated

on a yearly basis while the dividends are distributed on a shorter basis. Therefore, a multi-dividend fund could avoid potential tax cost caused by dividend policy if the outcomes of dividend payout (e.g., pay or not pay) in each period are the same as the outcomes when the fund uses the single-dividend policy. It implies that the dividend payments are stable over the time, i.e., a fund keeps paying dividends or not over the time.

There are two ways for multi-dividend funds to stabilize dividend payments. The first way is to stabilize the dividends that a fund receives from the stocks, given the fees charged by funds are relatively fixed. It is not difficult to predict how many and when a stock is going to pay dividends from its characteristics and past dividend history (Fama and French, 2001; Hartzmark and Solomon, 2013). The funds, therefore, could make the corresponding adjustments on their holdings and generate the amount of dividends they wish. Harris et al. (2012) provide evidence that some mutual funds change their holdings before dividend payment (ex-day). The dividend stability also stems from the pressure of investors. In section 3.3, we argue that individuals invest in multi-dividend funds for the purpose of obtaining constant and stable dividend flows. If a multi-dividend fund targets these investors, it should keep net dividend stable in terms of quantity in each dividend period or the investors would flee away for it. However, single-dividend funds are not attractive for these investors, and consequently, do not have any incentive to stabilize the dividend because it is costly.

A mutual fund can also keep dividend payment stable through setting its expense ratio. For example, a fund could set a low expense ratio if it hopes to pay dividends to investors. As such, a multi-dividend fund could charge low fees, including waive or reimburse fees, to generate more available dividends passing through to its shareholders if the fund could expect the future dividends would be stable and low. This operation actually benefits the investors. Meanwhile, a fund has no incentive to charge high fees while it uses multi-dividend policy.

Hypothesis 2A. *Multi-dividend funds have more stable dividend ratios than single-dividend funds, other things being equal.*

Hypothesis 2B. *The dividend frequency is negatively related to expense ratio, other things being equal.*

3.2 Conflict between Existing and New Investors

Figure 2 illustrates that existing and new investors might have different preferences on dividend policy. Assume that two identical funds, X and Y, have different dividend policies (annual and semiannual). We assume that the expected return is 0, the total net asset (TNA) is \$100, and the reinvestment rate is 100%. Both funds only have one shareholder A. Funds receive \$10 dollars as dividend at the beginning of the year and no other dividends in the rest of year. X would pay out the dividends at the end of the year, and Y would pay out in the middle of the year. A new investor B invests \$20 dollars into both funds (the relative flow is 20%) after Y pays out the dividends. Investors A and B would have the same payoffs from fund A and B, other things being equal. However, investor B has to pay the taxes for the dividends received from fund X. Table 1 shows the payoffs of both investors from X and Y from two funds. For existing investor A, fund X, which uses single-dividend policy, is better than multi-dividend fund Y. On the other hand, new investor B would find multi-dividend fund Y is more favorable. It shows that the dividend policy most attractive to new investors may be costly for existing investors. Hence, compared with single-dividend policy, multi-dividend policy might attract new investors and, consequently, increase mutual fund's inflows. Yet, multi-dividend policy also brings potential costs to existing investors. A mutual fund needs to trade off interest between existing and new investors to maximize its size.

Mutual funds pay distributions (e.g., dividends) following the equal allocation rule, i.e., each share would receive the same amount of dividends. Investors as of a distribution date would share dividends according to the proportion of shares they hold in the whole portfolio, regardless of their purchase date or whether their shares appreciate or not. That is to say, a new investor would share the undistributed dividends accumulated from the nearest dividend distribution to purchase time with existing investors. It follows that a new investor

would receive more dividends in the current year and pay unnecessary income taxes. The investor would try to avoid funds with a high overhang of undistributed dividends. This argument is in spirit to that of Bergstresser and Poterba (2002). They find a fund with heavy-taxed returns (e.g., undistributed dividends), receives lower inflows than funds offering similar pretax returns but lower tax burdens. Johnson and Poterba (2010) show that retail investors time their purchase of mutual fund to avoid tax acceleration with distributions. If more frequent dividend distributions could lower the tax burdens of new investors, mutual funds would have incentive to pass through dividends to relieve dividend overhang as soon as possible, such as using multi-dividend policy.

The equal allocation rule also causes unrealized capital gain overhang (UCGO) (Barclay et al., 1998; Bergstresser and Poterba, 2002). Dividend overhang (DO) in this paper is different from UCGO in two aspects. First, DO affects new investors by transferring capital gain taxes in the future to dividend income taxes at the current year, or vice versa for existing investors. Because tax rates for capital gains and dividend income are different, DO changes tax burdens not only in time but also in quantity. Yet UCGO only retimes the capital gains tax liability of investors, if any, but not tax quantity (Bergstresser et al., 2003). As such, some short-term investors may not be affected by UCGO but by DO. Second, DO can have a larger impact on low-income investors. If an investor' income tax rate is 10% or 15%, his or her capital gain rate is 0%. As a result, the investor needs to pay the taxes on dividend income but not on long-term capital gains.

The dividend overhang problem would exist in a fund unless a fund pays out undistributed dividends every day. Figure 3 intuitively shows when a mutual fund receives dividends and when it distributes them. Panel A shows how the S&P 500 dividend index evolves from January, 2009 to December, 2011[8]. Panel B illustrates the frequency of dividend distribution each month during the same period. It is easy to observe that a mutual fund typically pays out dividends at the end of year/quarter, but it receives dividends all the time.

[8]The S&P 500 dividend index measures the total dividends paid in the underlying index since the previous rebalancing date. The index resets to zero on a quarterly basis. The data is downloadable at S & P index website.

Assume a fund receives dS from the underlying assets it holds, where d is the dividends received for each dollar in the portfolio and S is the total net assets of the portfolio held by existing investors in dollar. We assume the expense ratio is 0. Thus, the fund would pay dS of dividends. Just before the distribution, a new investor buys s dollars of this fund. As a consequence, the new investor would receive $\frac{dS}{S+s}$ per dollar as dividends. At the end of the year, the investor needs to pay $\frac{dS}{S+s}t_d$ as income tax for each dollar invested, where t_d is the income tax rate. If the dividend ratio $\frac{dS}{S+s}$ is, for example, 1% and the income tax rate t_d is 33%, the new investor loses 0.33% of the principal. This number increases with the dividend ratio. So the potential tax cost for the new investors is positively related to dividend ratio. As a result, new investors might avoid buying funds with high dividend ratios. Consequently, those funds have incentives to pay dividends more frequently (e.g., multi-dividend policy) to attract new investors.

Because of the equal allocation rule, existing investors receive the same amount of dividends as new investors, $\frac{dS}{S+s}$ per dollar, and pay the corresponding income tax. In another scenario without new investors, existing investors would receive d per dollar. The difference of the dividends received by existing investors in two scenarios is $d - \frac{dS}{S+s} = \frac{ds}{S+s}$. Existing investors always receive less dividends in the scenario with the existence of new investors. Therefore, existing investors would prefer a fund with larger dividend ratios to use single-dividend policy so that more new investors could share the dividends. They would prefer the single-dividend funds since they could receive more dividends from multi-dividend funds than from single-dividend funds, other things being equal.

Yet, it is worthy to note that existing investors are less affected by dividend policy than new investors. With the aforementioned notations, the difference of taxes an existing investor would pay is $\frac{ds}{S+s}t_d$ per dollar in the current year, whereas the difference for a new investor between two scenarios is $\frac{dS}{S+s}t_d$. Therefore, a new investor incurs more unnecessary costs for choosing wrong dividend policy than existing investors in the current year ($\frac{ds}{S+s} < \frac{dS}{S+s}$) when the relative flows are not too huge ($\frac{s}{S} < 1$)[9]. Moreover, existing investors

[9] In my sample, more than 96% observations have relative flows smaller than 1.

still need to pay capital gain taxes on the dividends shared by new investors. They swap income taxes in the current year for capital gain taxes in the future in the scenario with new investors. When they sell the funds in the future, they have to pay $\frac{ds}{S+s}t_{cp}$ per dollar as capital gain tax. Therefore, without considering money's time value, the difference of taxes for existing investors between two scenarios turns to $dt_d - \frac{dS}{S+s}t_d - \frac{ds}{S+s}t_{cp}$, or $\frac{ds}{S+s}(t_d - t_{cp})$, where t_{cp} is the capital gain tax rate and $t_d > t_{cp}$. This result suggests that dividend policy has much smaller impact on existing investors than on new investors, and therefore, exiting investors are less sensitive to the dividend policy than new investors. Funds might benefit from multi-dividend policy by attracting new investors and not losing too many existing investors.

Hypothesis 3. *Mutli-dividend policy is positively associated with dividend ratio ($\frac{dS}{S+s}$), controlling for other characteristics.*

Some investors in the market may seek regular income streams. They might buy fixed-income assets, i.e., money or bond market funds, bank accounts, and short-term paper, since they distribute dividends more frequently and stably. However, it does not favor mutual fund management companies' interest. The expenses charged by equity funds are much higher than that by fixed-income assets, such as bond funds. Therefore, fund management companies might encourage money flows from fixed-income assets to equity funds.

One way to attract money from fixed-income assets is through divided policy. As Fidelity Investments posts in its website, "with today's rates already very low, bond market return dynamics may look different moving forward, and these changes may help to make dividends (of equity funds) look attractive."[10] Some investors even might equal multi-dividend equity funds to fixed-income assets without considering their risks are different[11].

Equity funds face two competitions for intriguing investors from fixed-income assets. The first competition is between equity funds and fixed-income assets. In equilibrium, equity funds might increase dividend frequency when fixed-income assets are more attractive,

[10] https://www.fidelity.com/learning-center/trading/all-about-dividends/new-era-for-dividends

[11] For example, CNN reports that some investors might mistake multi-dividend funds as fixed-income portfolios. See http://money.cnn.com/2011/11/03/pf/expert/bond_funds/index.htm

i.e., yields on fixed-income assets are higher, and vice versa. The second competition is within the equity funds. When yields on fixed-income assets are lower, money flows from fixed-income assets to equity funds. As such, an equity fund needs to compete with other equity funds by increasing the dividend frequency. However, the domination of these two competitions is still unclear.

We use risk-free interest rate to proxy for the return of fixed-income assets. Admittedly, the return on fixed-income assets is plausibly associated with the corporate dividend payment and, subsequently, affects the dividends received by mutual funds. In this paper, we do not consider it is important because (1) the impact of corporate dividend payment is the same for multi-dividend and single-dividend funds and (2) the impact of interest rate on corporate dividend payment is indirect whereas that on fixed income asset returns is direct.

Hypothesis 4. *Mutual funds are more likely to pay dividends more frequently when the return of fixed-income assets is higher, controlling for other fund characteristics.*

3.3 Conflict within Existing Investors

Existing investors of mutual funds have different interests. Mutual funds trade off interest within existing investors in order to maximize their size and, therefore, revenue (Christoffersen et al., 2005). Similarly, there are reasons to believe that existing investors have different preferences in dividend policy. Previous studies (Thaler and Shefrin, 1981; Scholz, 1992; Graham and Kumar, 2006; Becker et al., 2011) well document the existence of dividend clientele. These authors propose that some investors might prefer high dividend stocks for consumption or tax purposes.

Previous empirical studies based on dividends do not distinguish between consumption and tax rationale. The investors who have more pronounced needs to finance their consumption typically have lower tax rates. Mutual fund dividend policy provides a unique opportunity to test the purpose of investment from dividend clientele. Because of the pass-through regulation, the sum of the dividends for a year would be similar for most funds with small relative flows (see discussion in the previous section). Therefore, if the demand

for dividends stems from that some investors have a relative low tax rates, they would not show preference to multi-dividend funds because their tax burdens would be almost the same. Contrary to tax rationale, under the assumption that an investor uses dividends to finance his or her consumption, he or she would prefer regular income streams, as in multi-dividend funds, because of self-control (Thaler and Shefrin, 1981). The following argument in this section is under the consumption rationale.

If the purpose of investing in a mutual fund is to gain regular income streams, investors can realize this purpose via two ways related to equity funds: holding multi-dividend funds and partially selling single-dividend funds. Under the assumptions of Miller and Modigliani (1961), the dividend policy is irrelevant to investors' choices in the absence of transaction costs since they could generate regular dividend streams by themselves. Investors could always cancel out a firm's dividend policy by realizing "homemade dividends", i.e., partly selling shares. However, redeeming shares could be expensive. One type of cost is related to the information cost. To redeem shares, they probably want to forecast the future returns of the funds and choose the time to sell the funds. As such, investors need to actively or passively collect and analyze information. They might even regret after they sell the funds if they made the wrong decisions. Another type of cost is related to transaction cost. Investors need to pay, if any, front/back-end loads, brokerage fees, when they sell and reinvest the funds. There is also the opportunity cost of time spent trading shares. Following Huang et al. (2007), I term those costs participation costs. As such, investors who are seeking for regular income streams might avoid investing in funds with high participation costs if they use a single-dividend policy. In equilibrium, a multi-dividend fund is more likely to have participation costs than a single-dividend fund if they both target dividend clientele. Admittedly, some single-dividend funds may not target dividend clientele. Therefore, their investors are more likely to pose obtaining better fund performance as the primary goal of investing funds and, consequently, be performance-sensitive. They buy and sell funds more frequently. As such, those investors would avoid single-dividend funds with high participation costs. As a result, a multi-dividend fund has higher participation costs than a

single-dividend fund.

Hypothesis 5. *Dividend frequency is positively associated with participation costs.*

4 Data

I obtain data from the CRSP Survivor-Bias Free Mutual Fund Database spanning from 2000 to 2011. The original sample contains all open-end mutual funds that are active from 2000 to 2011. From the initial sample, I retain domestic equity mutual funds defined by the lipper objective codes.[12] I also exclude index and institutional funds identified by CRSP identifiers, i.e., *index_fund_flag* and *inst_fund*. I identify funds with multiple share classes by *crsp_cl_grp* provided by CRSP and compute the fund characteristics as the asset-weighted means of class characteristics. In some rare cases, the dividend payment varies across classes even in the same fund. It stems from that classes in the same portfolios have different fee structures. For example, assume one portfolio has two classes with expense ratios 1.55% and 1.50%, respectively. The dividend ratio before fee is 1.52%. As a consequence, one class in this portfolio pays dividends whereas the other class does not. I define a fund pays a dividend payment if any class in its portfolio pays. Following Elton et al. (2011) and Evans (2010), I drop the smallest funds, i.e., total net assets below $15 million, and the young funds, i.e., the age is less than 36 months. This leaves a sample of 3,257 distinguish funds and 18,574 fund-year observations.

I am interested in examining how a mutual fund determines the frequency of dividend distributions that the fund intends to pay out. As such, I estimate dividend policy as the realized frequency of dividend distributions during a calendar year plus one if a fund does not pay dividends in December and zero otherwise. There are two considerations for the definition. First, we use realized dividend frequency, rather than scheduled dividend policy, to calculate dividend policy. Empirically, realized dividend frequency is typically consistent

[12] We consider the fund is a domestic equity fund when the fund is classified as one of the following categories by *lipper_class*: LCVE, MLVE, EI, EIEI, LCCE, MLCE, LCGE, MLGE, MCVE, MCCE, MCGE, SCVE, SCCE, and SCGE.

with intended dividend frequency. In some rare cases, a fund does not pay dividends to its shareholders if the fund does not collect enough dividends to offset fees. However, funds can easily avoid this situation. A mutual fund can simply buy stocks before the dividend distribution date to collect enough dividends (Harris et al., 2012). As such, realized dividend frequency is representative of mutual fund intention. Another reason is that the real dividend policy that a fund intends to use is difficult to observe. Not all funds report scheduled dividend frequency in the prospectus and funds might change their intentions over time. Second, a mutual fund can choose fiscal or calendar year as its taxable year.[13] However, excise tax rule suggests that all mutual funds need to distribute, if any, dividends at the end of December. Therefore, we assume that all mutual funds intend to apply this rule, i.e., they all plan to pay dividends in December, even if it ends up that they do not pay any dividend in December. Empirical results support this assumption. In my sample, more than 98% mutual funds that have one dividend distribution choose to pay it in December. I use the realized frequency of dividend distributions and the expected dividend frequency, i.e., the maximal dividend frequency over the past three years. The results are robust.

Table 2 provides the summary statistics for our sample. All definitions of the variables of fund characteristics are similar to previous literature. My main variables are dividend frequency and dividend ratio. Some mutual funds pay dividends[14] several times in the same month or in the same day, typically when dividends belong to different types (e.g., income dividend and qualified income dividend). Therefore, I consider dividend distributions in the same month as one time. I calculate dividend frequency as the numbers of months when a mutual fund pays dividends (from 0 to 12). I define multi-dividend dummy equals to 1 if dividend frequency is larger than one time, and zero otherwise. The yearly dividend ratio is calculated as the sum of dividend ratios, defined as the distribution amount over reinvestment price, for each dividend distribution throughout the year.

In panel A of table 2, I report the summary statistics for all funds in the sample. Among those funds that at least pay dividend once in the year, nearly 30% are multi-dividend funds.

[13] http://www.irs.gov/Businesses/Small-Businesses-%26-Self-Employed/Tax-Years

[14] I identify dividend distributions as mutual fund dividends if the first letter of *dis_type* in CRSP is "D".

Funds, on average, pay dividends 1.7 times per year. Panel B provides the mean and the standard deviation of variables of interest for funds paying dividends one, two, three or four times and larger than four times: 70.4% fund-years use single-dividend policy and pay dividend once per year. 14.93% and 12.64% fund-years pay dividends twice and three or four times per year, respectively; and 2% fund-years pay dividends more than four times. In panel B, apart from the observations with dividend frequency equal to 1, dividend ratio, load, and risk-free interest rate increase with dividend frequency whereas the past 12-month raw return is negatively associated to dividend frequency, suggestive of our hypotheses. The univariate relationship between variables of interest and dividend policy fits our hypotheses across all dividend frequencies. In the robustness test (unreported), I drop the observations that there is no dividend payment during the year to avoid suspicious missing observations. The results are mainly the same.

Since mutual fund segments have their own objectives, they might have the corresponding dividend policies across segments. To offer a broader view of the database, Table 3 reports the summary statistics relating to fund segments. Panel A reports the summary statistics of dividend frequency and dividend ratio in each segment. The first observation is that mutual fund dividend policy varies across mutual fund segments. Consistent with my expectation, dividend frequency is highly associated with dividend ratio. Income, large-cap funds, which have large dividend ratios, pay dividend distributions more frequently. Growth and small-cap funds are more likely to use single-dividend policy. However, the relationship between dividend frequency and dividend ratio is not perfect. For example, although the funds in segment "MLVE" have larger dividend ratios than the ones in segment "LCCE", the average of dividend ratio in the former segment is smaller than that in the latter segment. The second observation is that the dividend policy varies across mutual funds within the same segment. Even in the segment with the lowest dividend ratio, there are some funds pay dividends more frequently than the mandated time. Panel B provides the percentage of mutual fund segments changes over time. The largest five segments in terms of percentage in 2011 are "LCCE", "MLCE", "LCGE", "SCCE" and "LMGE". They represent segments with

different dividend policies.

5 Empirical Strategy and Results

5.1 Dividend Distribution Frequency as Strategic Choice

I begin my empirical test by examining whether mutual funds consider dividend distribution frequency as a strategic choice. Under this hypothesis, we should expect that a mutual fund's dividend distribution frequency would depend on its strategy rather than market characteristics (e.g., market dividend yields). The first prediction is that mutual funds' dividend policy is persistent from year to year. If a fund chooses its dividend policy randomly, the frequency of dividend distributions would vary over years. Many mutual funds report their dividend distribution schedules in their prospectuses. This promise, if any, to a large extent, ensures the persistence of dividend policy. To formally examine the persistence of dividend policy, following the methodology in Carhart (1997) and Berk and Tonks (2007), I count the numbers of funds that keep (change) their dividend policy from year t to year t+1, as well as from year t to year t+2. Table 4 reports the results. The results show that 91% of mutual funds have persistent dividend policy in the next year and 90% of funds' dividend policy remains persistent in the year t+2.

Another prediction is that the frequency of dividend distributions is, to some extent, independent from the market characteristics. Figure 4 illustrates that the market average frequency of dividend distribution is irrelevant to the stock market dividend payout. It shows how the average mutual fund dividend frequency, the dividend ratio, and the S&P 500 dividend yield evolve over time. S&P 500 dividend yield (blue line) increases from 2000 to 2011 with a peak in 2008. The dividend ratio (bottom line) has a shape similar to S&P 500 dividend yield, but smoother. If a mutual fund does not manipulate the dividend distribution frequency, the mutual fund average frequency and the market dividend yield are supposed to follow the same distribution and increase. However, to the contrary, the average frequency of dividend distribution (top line) gradually decreases from 2000 to 2011.

However, this result might be driven by the decrease of the percentage of segments with high dividend distribution frequencies in the market.

To further examine this prediction, I consider the only possible scenario that a mutual fund does not follow the schedule to pay dividends: when a mutual fund does not collect enough net dividend, defined as dividends received subtract fees, it would pay nothing to its shareholders in the scheduled dates. Therefore, the mutual fund has a lower dividend frequency than scheduled. It is supposed to be common in the market if a mutual fund does not have any dividend preference. A typical expense ratio for a mutual fund is 1.5%, and the S&P 500 dividend yields range from 1.1% to 3% in the period from 2000 to 2011.[15] In my sample, 27.66% of the fund-year's expense ratio is higher than the S&P 500 dividend yield. Therefore, the percentage of the fund-year, which pays dividend distributions less frequently than the scheduled, proxied by the maximum distribution frequency in the past three years (from t-2 to t), would be around this number. However, this number is only 6.85%. This large difference implies that mutual funds do not choose dividend policy randomly. They deliberately choose dividend policy and keep it persistent.

5.2 Dividend Policy and Fund Characteristics

In this section, we examine the hypotheses in section 2, i.e., how a mutual fund determines its dividend policy. I model multi-dividend policy as a function of fund characteristics, which are associated with how mutual funds resolve the conflicts of interest between existing and new investors as well as within existing investors. Table 5 reports the results of our multivariate regressions. Columns (1), (3), (5) and (7) present the results for the logit regressions of the dummy for multi-dividend policy on fund characteristics. The dependent variable is *Multidiv*, which equals 1 if a fund pays dividends more than one time during one year and 0 if a fund only pays dividend once. The first, the second, and the third rows for every variable correspond the coefficient, the marginal effect, and the test statistics (Z-statistics). Columns (2), (4), (6) and (8) report the coefficients and t-statistics for the pooled OLS regressions of

[15] Source: Shiller (2006), www.irrationalexuberance.com

the dividend frequency in the current year on fund characteristics. Standard errors in all columns are clustered by fund and year. Regressions in the first four columns include year and segment fixed effects. The other two regressions include segment fixed effects.

We start with examining whether multi-dividend policy potentially hurts investors. The coefficients of *FundRet* is negative in columns (1), (2), (7) and (8), although not significant in columns (2) and (8), implying multi-dividend policy is associated with worse raw returns. Meanwhile, the coefficients on *FundRetRA* are insignificant in columns (3) and (4) suggesting risk-adjusted returns are not different across dividend policy. The results provide very limited evidence supporting Hypothesis 1. The transaction costs caused by dividend policy might be marginal to the performance. One possible explanation of the association between raw returns and dividend policy is that multi-dividend funds may continuously keep a large proportion of low-return assets (e.g., cash) in their portfolios and therefore get a low raw returns. The dividends can only be paid in the form of cash. Funds need to keep larger proportion of cash in the portfolio before each distribution. As such, the portfolio in multi-dividend funds on average are more liquid than that in single-dividend funds.

To investigate whether multi-dividend policy leads to a more stable dividend income as suggested by Hypothesis 3, I construct a new variable *Stability* defined as follows:

$$\text{Stability}_{i,t} = -ln(1 + |\frac{\text{Dividend Ratio}_{i,t} - \text{Dividend Ratio}_{i,t-1}}{\text{Dividend Ratio}_{i,t-1}}|) \tag{1}$$

Where Dividend Ratio is the sum of the dividend ratio, defined as distribution amount over reinvestment price, for each dividend distribution during the whole year. *Stability* is 0 when the dividend ratio in year t is the same as the dividend ratio in year t-1, and smaller when the difference between two variables, either positive or negative, is larger. Therefore, *Stability* is positively associated with dividend ratio stability. A mutual fund having more stable dividend ratios would get a higher value in *Stability*. The coefficients of *Stability* are positive and significant in columns (1) to (8). The results imply that dividend ratio stability is negatively associated with multi-dividend dummy and dividend frequency. It is consistent with the prediction of Hypothesis 2A.

In Hypothesis 2B, I predict that multi-dividend funds have lower expense ratio. Contrary to this prediction, the coefficients on *ExpRatio* are insignificant in columns (7) and (8), suggesting that expense ratio is not statistically different across dividend policy. Multi-dividend funds do not lower the expense ratio, a way that benefits investors, to collect sufficient dividend income.

We now turn our attention to another question: Do mutual funds trade off the interest between existing and new investors to attract new money? As denoted is section 4, in the segments with higher average dividend ratios, funds tend to pay dividends more frequently. Multivariate analysis also provides strong evidence at the fund level: the coefficients on *LnDivratio* are positive and significant in all columns. This shows that multi-dividend dummy and dividend frequency are positively associated with dividend ratio after controlling for other fund attributes.

I also find limited evidence supporting Hypothesis 4. The coefficients of risk-free interest rate in columns (5) and (6) are negative, though not significant in column (6), given other fund characteristics. The results suggest that funds are more likely to increase the dividend frequency when the interest rates go lower. It is consistent with the competition within equity funds.

Finally, we examine the hypothesis that mutual funds trade off interests within the existing investors with different dividend preferences. I use 12B-1 fees plus one fourth of front loads, as proposed by Huang et al. (2007), to proxy for participation costs. The coefficients on *PartCost* are positive across the first four columns, suggesting that dividend frequency increases with participation costs, consistent with Hypothesis 5. The results are also consistent with our argument that mutual funds have to solve the conflict of interest within existing investors.

5.3 Reaction of Investors

In this section, I answer the last question whether and how investors respond to multi-dividend policy. The ultimate objective for mutual funds is to increase the assets under

management. Mutual funds choose the dividend policy that could maximize their assets. Therefore, I expect that multi-dividend policy increases the net inflows controlling for other fund characteristics. To test this hypothesis, I regress yearly mutual fund net inflows on multi-dividend dummy, fund characteristics including yearly dividend ratio, and their interaction terms following previous literature (e.g., (Barber et al., 2005; Kumar et al., 2012))[16]. Table 6 reports the results. The first column (left) in each specification reports the main effects of fund attributes on mutual fund relative flows. The right column in each regression reports coefficients and t-statistics on interaction terms between *MultiDiv* and fund attributes. It describes how multi-dividend policy alters the main effect coefficients in the left column.

We first investigate the main effects of *LnDivRatio* on the net mutual fund flows. The coefficients on *LnDivRatio* are negative, suggesting that mutual funds with high dividend ratios have smaller net flows than those with low dividend ratios. It shows that investors on average avoid investing in the funds with high dividend overhang. This result is consistent with Graham and Kumar (2006). They find that retail investors, as a group, prefer non-dividend-paying stocks over dividend-paying stocks.

Our primary focus is the relationship between dividend policy and fund flow. We would concentrate on the interaction term between fund characteristics one period lag behind and *MultiDiv*. The coefficients on interaction term *MultiDiv-LnDivRatio* are significant in the columns (1) and (2). It shows that multi-dividend policy positively alters the sensitivity of flows to dividend ratio. The absolute value of the coefficients on the interaction term is much larger than that of the coefficients on *LnDivRatio*. It suggests that dividend ratio is negatively associated with net fund flows in single-dividend funds whereas positively in multi-dividend funds. It is consistent with our hypothesis that multi-dividend policy reduces the dividend overhang problem and attracts more new investors. However, the sensitivity of new flow to risk-free interest rate is not significant in column (3), which contradicts our prediction.

[16]I exclude the variable *Stability* in this regression since it greatly decreases the sample size. Yet, even if I include that variable, the main results remain the same and the coefficients on that variable are not significant.

Then we examine how investors react to the trade-off within investors with different dividend preferences. The regression reports that the coefficients on *MultiDiv-PartCost* is positive and significant. It shows that a multi-dividend fund has a smaller outflow caused by the participation costs than a single-dividend fund, which supports our hypothesis 5. The results is also consistent with the hypothesis that dividend clientele prefer dividends in the purpose of obtaining incomes for consumption.

6 Conclusions

Corporate dividend policy has been extensively investigated in the literature. However, mutual fund dividend policy, which is quite different from corporate dividend policy, draws little attention in the literature. This paper asks the question how and why mutual funds determine their dividend policy.

This paper presents evidence that multi-dividend policy hurts investors and proposes that multi-dividend policy is the outcome of mutual funds optimally balancing two different conflicts of interest. The first conflict stems from the asymmetry of tax burdens between existing and new investors. New investors have preference to buy funds with low dividend overhang. To attract new investors, mutual funds have incentives to use multi-dividend policy in order to decrease dividend overhang. The second conflict of interest stems from the different dividend preferences of existing investors. Some investors might prefer high frequent distributions whereas some do not. Mutual funds have to trade off their interest when choosing dividend policy. To examine the hypotheses, I first relate the dummy for multi-dividend policy and dividend frequency to fund characteristics. I find dividend policy is associated with fund characteristics that affect both conflicts of interest. Then we regress fund net flows on fund characteristics, multi-dividend dummy, and their interaction terms. I find empirical evidence that multi-dividend policy attracts net flows related to dividend ratio, a variable associated to the conflict of interest between new and existing investors. The results show that multi-dividend policy is positively associated with net flows related to participation cost, a variable that measures the severity of the conflict of interest within

investors. This result implies that some investors purchase mutual funds for the purpose of generating constant dividend income.

This paper starts a new dimension in mutual fund analysis. We relate an important variation among mutual funds, dividend policy, to investor purchase decision. The two trade-offs documented in this paper broaden two different areas. The first trade-off is associated with the agency problem that some mutual funds might not favor existing investors but new investors in order to maximize their benefits. The second trade-off, on the opposite, represents a delegation of investment decisions. Both trade-offs stem from the managers' desire to maximize the asset size under their management. This study helps us to understand managers' behaviors on dividend policy and redesign a better mutual fund fee structure.

This paper also contributes to a large body of literature in corporate dividend policy. First, we provide a new and different type of dividend policy. Mutual fund dividend policy is highly regulated and different from the one of other corporates. Therefore, it is possible to test the hypotheses in payout policy literature while isolating some other factors. For example, DeAngelo and DeAngelo (2006) argue that Miller and Modigliani (1961) imposes an assumption to mandate 100% free cash flow payout in every period. It is difficult to find such corporates that pay out all free cash flows in empirical tests. However, mutual funds naturally fulfill this requirement. Second, we first provide evidence on investment purposes of dividend clientele. Previous literature suspects dividend clientele demands high dividends for financing their consumption or they have lower tax rates (Becker et al., 2011). Yet the real reason is difficult to test since some group of investors (e.g., older and low-income investors) have both characteristics (Graham and Kumar, 2006; Becker et al., 2011). We present evidence on that some investors chase dividends for the propose of consumption by showing that some investors react to dividend policy, which tax rationale cannot explain.

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Figure 1: Time line of taxes paid under different assumptions about the dividend policy of a mutual fund

Panel A: Single-Dividend Fund

At the beginning of the year
An investor purchases $1 of a single-dividend fund. The expense ratio is 2% and uniformly distributed over the year.

In the middle of the year
The investor receives 0 dividend from the fund.
The investor holds $0.99 of the fund.

At the end of the year
The investor receives 0 dividend from the fund.
The investor holds $0.98 of the fund.
The investor does not pay any tax on dividend.

Panel B: Multi-Dividend Fund

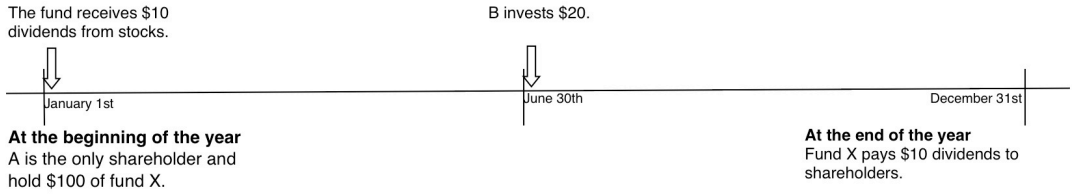
At the beginning of the year
An investor purchases $1 of a multi-dividend fund. The expense ratio is 2% and uniformly distributed over the year.

In the middle of the year
The investor receives and reinvests $0.005 dividend from the fund.
The investor holds $0.99 of the fund.

At the end of the year
The investor receives 0 dividend from the fund.
The investor holds $0.98 of the fund.
The investor pays tax on $0.005 dividend.

Figure 2: The Impact of Dividend Policy on After-tax Returns

Panel A: Fund X, Single Dividend Policy



Panel B: Fund Y, Multi-Dividend Policy

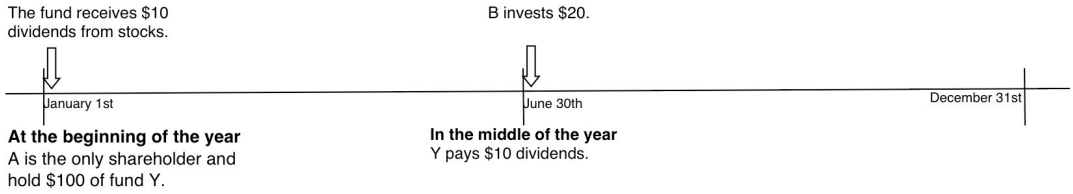


Figure 3: S&P 500 Dividend Index and Dividend Distributions

Panel A of this figure illustrates how S&P 500 dividend index evolves from 2009 to 2011. Panel B shows the monthly frequency of dividend distributions from 2009 to 2011. S&P 500 dividend index measures the total dividends paid in the underlying index since the previous rebalancing date. The index resets to zero on a quarterly basis. The monthly dividend distribution frequency is calculated as the times of dividend distributions during one month over the total times during the year.

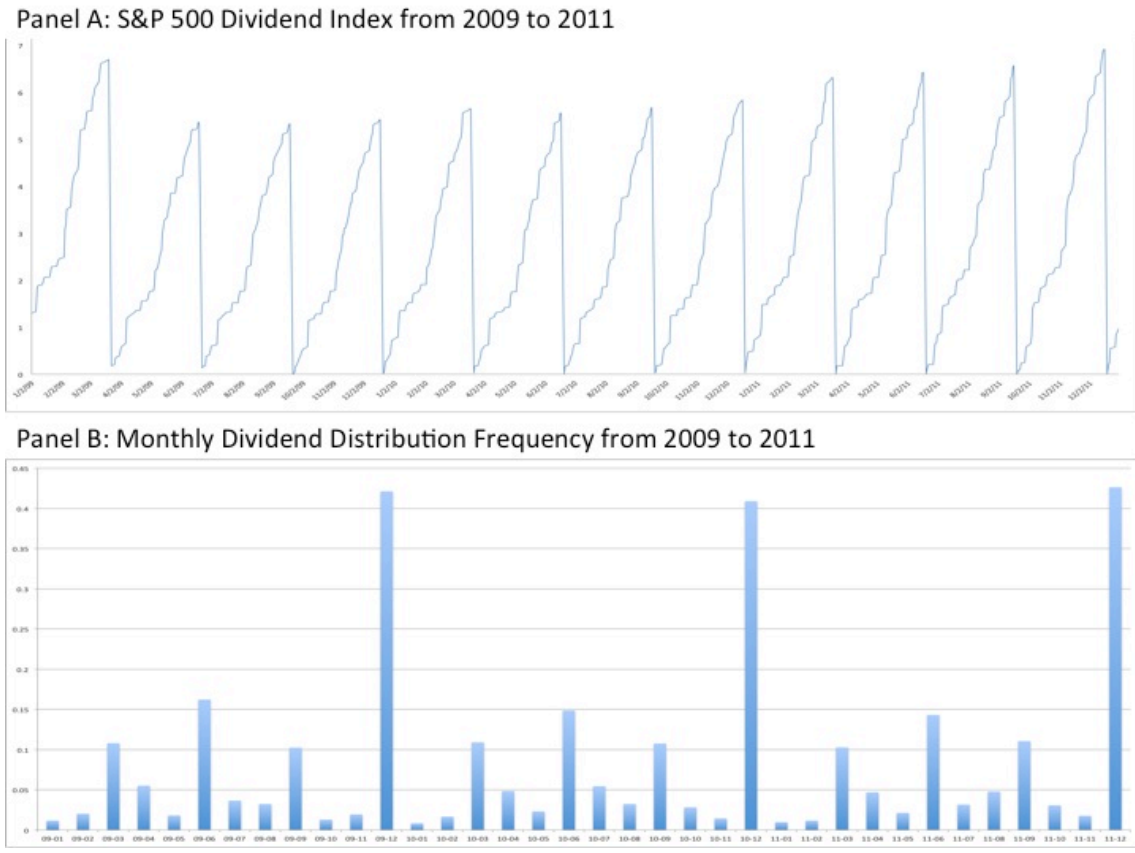


Figure 4: Dividend Policy over Time

The figure illustrates how average mutual fund dividend frequency, dividend ratio, and S&P 500 dividend yield evolve over time. Middle line is the dividend payout of stocks in S&P 500 index. Bottom line is average fund dividend ratio, defined as the cross-sectional mean of dividend ratio. Top line is the average fund dividend frequency, defined as the cross-sectional mean of dividend frequency.

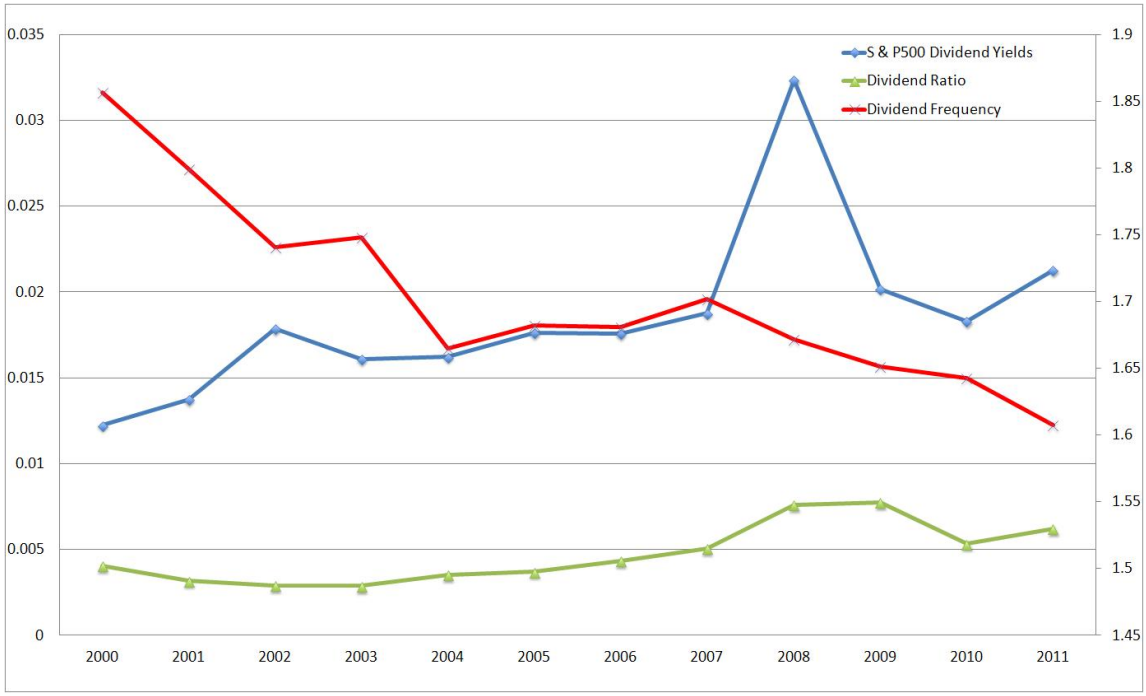


Table 1: Payout of Exiting and New Investors

Investor	Fund	Dividend	Tax	Returns
A	X	\$8.33	\$2.75	-2.75%
	Y	\$10	\$3.3	-3.3%
B	X	\$1.67	\$0.55	-2.75%
	Y	\$0	\$0	0

Table 2: Summary Statistics

This table presents the summary statistics for our database sample. Panel A provides the summary statistics for variables of interests. Panel B reports the summary statistics across the dividend frequency. DivRatio is the sum of the dividend ratio, defined as distribution amount over reinvestment price, for each dividend distribution during the whole year. LnDivRatio is the natural logarithm of the dividend ratio plus 1. DivFreq is the number of months when a fund pays dividends. MultiDiv is the dummy variable that equals 1 if DivFreq is larger than 1, and 0 if DivFreq is equal to 1. LnSize is the nature logarithm of total net asset under fund management. LnAge is the nature logarithm of age in months. FrontLoads is the front load. BackLoad is the back load for holding 48 months. ExpRatio is the expense ratio defined as total operating expenses divided by the year-end total net assets. TurnRatio is the turnover ratio. FundRet is the raw return for the past 12 months (buy and hold). Size is the total net asset under fund management. RF is the risk-free interest rates, defined as the one-month Treasury bill rate at the end of the year.

PANEL A: Summary Statistics for variables of interests

	Mean	SD	Median	1st perc.	99th perc.	N
DivRatio (%)	0.498	1.084	0.026	0.000	3.666	18574
LnDivRatio (%)	0.492	1.022	0.026	0.000	3.601	18574
DivFreq (times)	1.690	1.560	1	1	12	18574
MultiDiv	0.296	0.457	0	0	1	18574
LnSize ($ million)	5.856	1.613	5.752	2.918	9.997	18090
LnAge (month)	4.946	0.658	4.875	3.871	6.758	18574
FrontLoad (%)	1.766	2.118	0.000	0.000	5.750	18217
BackLoad	0.116	0.276	0.000	0.000	1.272	18217
ExpRatio (%)	1.321	0.430	1.315	0.203	2.413	16213
TurnRatio (%)	85.049	87.257	64	3	401	16097
Fundret (%)	4.382	20.849	7.427	-45.024	46.689	14826

PANEL B: Summary Statistics across Dividend Frequency

	DivFreq				All
	1	2	3 or 4	≥5	
N	13073	2773	2348	380	18574
DivRatio	0.250	0.985	1.096	1.801	0.498
(% per year)	(0.612)	(1.563)	(2.78)	(2.822)	(1.084)
LnSize	5.727	6.046	6.364	5.741	5.856
($ million)	(1.565)	(1.631)	(1.762)	(1.354)	(1.613)
LnAge	4.904	4.982	5.139	4.909	4.946
	(0.633)	(0.646)	(0.761)	(0.668)	(0.658)
FrontLoad	1.839	0.902	2.189	2.829	1.766
(%)	(2.102)	(1.781)	(2.276)	(2.067)	(2.118)
BackLoad	0.131	0.0399	0.112	0.175	0.116
(%)	(0.292)	(0.158)	(0.263)	(0.311)	(0.276)
ExpRatio	1.398	1.056	1.220	1.272	1.321
(% per year)	(0.417)	(0.423)	(0.370)	(0.341)	(0.430)
FundRet	4.307	5.289	4.200	2.475	106.550
(% per year)	(21.895)	(18.049)	(18.370)	(17.929)	(19.86846)
Rf	0.158	0.106	0.171	0.179	0.152
(% per year)	(0.151)	(0.144)	(0.156)	(0.150)	(0.152)

Table 3: Summary Statistics for Segments

Panel A summarizes dividend frequency across segments in the sample. Panel B provides the proportion of each segment in the sample over years. EIEI is equity income funds. LCVE is large-cap value funds. LCCE is large-cap core funds. MLVE is multi-cap value funds. MLCE is multi-cap core funds. MCVE is mid-cap value funds. MCCE is mid-cap core funds. SCVE is small-cap value funds. LCGE is large-cap growth funds. SCCE is small-cap core funds. MLGE is multi-cap growth funds. MCGE is mid-cap growth funds. SCGE is small-cap growth funds. DivFreq is the dividend frequency defined as frequency of dividend distribution during one year. DivRatio is the dividend ratio defined as sum of dividend distribution amount over the reinvestment price reported by funds during one year.

PANEL A: Dividend Frequency across Segments

Lipper Code	Class Name	DivFreq				DivRatio (%)	Obs.
		Mean	10%	Median	90%		
EIEI	Equity Income Funds	5.021	1	4	12	1.884	746
LCVE	Large-Cap Value Funds	2.486	1	2	4	1.066	1226
LCCE	Large-Cap Core Funds	2.132	1	1	4	0.741	2702
MLVE	Multi-Cap Value Funds	2.119	1	1	4	0.840	1201
MLCE	Multi-Cap Core Funds	1.579	1	1	3	0.656	2118
MCVE	Mid-Cap Value Funds	1.543	1	1	3	0.475	678
MCCE	Mid-Cap Core Funds	1.449	1	1	2	0.384	980
SCVE	Small-Cap Value Funds	1.337	1	1	2	0.391	861
SCCE	Small-Cap Core Funds	1.270	1	1	2	0.271	1713
LCGE	Large-Cap Growth Funds	1.253	1	1	2	0.153	2163
MLGE	Multi-Cap Growth Funds	1.106	1	1	2	0.010	1311
MCGE	Mid-Cap Growth Funds	1.051	1	1	1	0.037	1432
SCGE	Small-Cap Growth Funds	1.029	1	1	1	0.040	1443

Panel B: Percentage of Mutual Fund Types over Years (%)

Lipper Code	Year											
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
EIEI	5.274%	4.991%	4.208%	3.743%	3.331%	3.421%	3.141%	3.641%	3.979%	4.350%	4.180%	4.268%
LCCE	10.348%	13.047%	16.172%	18.182%	17.071%	15.359%	14.071%	12.549%	12.268%	13.712%	15.049%	15.619%
LCGE	10.846%	14.711%	12.954%	10.466%	10.132%	9.926%	10.537%	10.013%	11.207%	13.191%	12.912%	12.054%
LCVE	9.652%	6.042%	6.271%	5.882%	5.413%	5.701%	6.283%	6.307%	7.692%	6.761%	6.456%	7.176%
MCCE	3.184%	3.590%	3.960%	4.966%	6.107%	6.170%	5.497%	5.657%	5.172%	5.768%	6.224%	5.113%
MCGE	6.667%	7.968%	8.333%	8.403%	7.981%	8.317%	8.246%	8.323%	7.958%	7.612%	6.921%	6.567%
MCVE	5.672%	4.116%	3.795%	3.361%	3.331%	3.957%	4.450%	4.226%	4.178%	3.168%	2.183%	3.143%
MLCE	8.060%	6.743%	7.838%	9.626%	11.520%	12.072%	12.042%	13.199%	11.804%	12.199%	13.423%	13.180%
MLGE	11.841%	8.319%	5.776%	5.653%	6.801%	6.908%	6.283%	7.412%	7.095%	6.478%	6.595%	7.317%
MLVE	11.045%	11.384%	9.158%	8.327%	6.870%	6.707%	7.003%	5.722%	4.973%	4.303%	4.134%	4.268%
SCCE	4.279%	5.079%	6.353%	8.480%	9.160%	9.457%	9.817%	10.533%	10.809%	10.260%	11.426%	9.991%
SCGE	5.771%	7.706%	8.168%	7.945%	8.536%	8.250%	8.312%	8.062%	8.157%	8.038%	7.106%	7.083%
SCVE	7.363%	6.305%	7.013%	4.966%	3.747%	3.756%	4.319%	4.356%	4.708%	4.161%	3.391%	4.221%

Table 4: Persistence of Dividend Frequency

This table reports the number of the funds using different dividend policies. Multi-dividend implies a fund uses multi-dividend policy. Single-dividend implies a fund uses single-dividend policy.

Year t	Year t+1		Year t+2	
	Multi-dividend	Single-dividend	Multi-dividend	Single-dividend
Multi-dividend	3904	550	2922	549
Single-dividend	566	10297	574	8364

Table 5: Fund Characteristics and Dividend Policy

This table reports the regressions of dividend policy on fund characteristics. Columns (1), (3), (5) and (7) report the coefficients, marginal effects, and associated z-values from logit regressions for the probability of a fund using the multi-dividend policy. The first, second, and third rows of each variable reports coefficients, marginal effects and z-statistics, respectively. The dependent variables are dummy variables equal to 1 if a fund uses multi-dividend policy. Columns (2), (4), (6) and (8) report the coefficients and t-statistics from OLS regressions of dividend frequency on fund characteristics. Stability is the natural logarithm of the absolute value of the ratio of the difference between dividend ratio at t and dividend ratio at t-1 to dividend ratio at t-1 plus 1, defined in equation 1. FundRisk is the standard deviation of raw returns during one year. FundRetRA is the average monthly risk-adjusted alpha during the year. All other variables are defined in Table 2. Year FE and Segment FE shows whether we include year and segment fixed effects. Standard errors are clustered by fund and year. *** indicates significance at 1% level, ** indicates significance at 5% level and * indicates significance at 10% level.

	Dividend Policy							
	LOGIT	OLS	LOGIT	OLS	LOGIT	OLS	LOGIT	OLS
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$LnDivratio_{i,t}$	35.370***	37.959***	40.197**	33.384***	27.896***	34.256***	36.036***	38.005***
	8.489		9.775		6.706		8.649	
	(3.33)	(4.72)	(2.45)	(2.88)	(2.9)	(4.75)	(3.44)	(4.70)
$Stability_{i,t}$	0.452***	0.473***	0.553***	0.460***	0.446***	0.470***	0.443***	0.464***
	0.109		0.134		0.107		0.106	
	(4.98)	(7.39)	(5.21)	(6.67)	(4.99)	(7.35)	(4.87)	(7.26)
$ExpRatio_{i,t}$							-0.280	0.049
							-0.067	
							(-1.08)	(0.31)
$No12\text{-}1B_{i,t}$	-0.424	-0.017	-0.460	-0.122	-0.470*	-0.049		
	-0.102		-0.112		-0.113			
	(-1.59)	(-0.09)	(-1.49)	(-0.56)	(-1.83)	(-0.27)		
$PartCost_{i,t}$	0.254**	0.503***	0.277**	0.472***	0.183*	0.450***		
	0.061		0.067		0.044			
	(2.15)	(4.05)	(2.35)	(3.92)	(1.69)	(3.94)		
$FundRet_{i,t}$	-0.010**	-0.004			-8.993*	-7.670*	-0.011**	-7.670
	-0.003				-2.162		-0.003	
	(-2.00)	(-1.28)			(-1.90)	(-1.65)	(-2.08)	(-1.43)
$FundRetRA_{i,t}$			-0.010	-0.002				
			-0.002					
			(-1.17)	(-0.53)				
RF_t					-0.006**	-0.003		
					-0.002			
					(-2.43)	(-1.03)		
$FrontLoad_{i,t}$							0.086**	0.148***
							0.021	
							(2.41)	(4.00)
$BackLoad_{i,t}$	-0.040	0.365	-0.103	0.357	0.192	0.577**	0.153	0.528**
	-0.010		-0.025		0.046		0.037	
	(-0.15)	(1.42)	(-0.33)	(1.09)	(0.66)	(2.09)	(0.57)	(2.04)
$RelFlow_{i,t}$	-0.127**	-0.011*	-0.064	-0.021	-0.110*	-0.012**	-0.130**	-0.011*
	-0.030		-0.016		-0.026		-0.031	
	(-2.02)	(-1.9)	(-1.04)	(-0.89)	(-1.78)	(-2.08)	(-2.00)	(-1.91)
$LnSize_{i,t}$	0.000	-0.054	0.013	-0.056	0.014	-0.043	0.007	-0.051
	0.000		0.003		0.003		0.002	
	(0.00)	(-1.48)	(0.28)	(-1.51)	(0.34)	(-1.22)	(0.16)	(-1.41)
$TurnRatio_t$	0.001	0.000	0.002	0.000	0.001	0.000	0.001	-0.000
	0.000		0.000		0.000		0.000	
	(1.07)	(-0.33)	(1.34)	(0.46)	(1.42)	(0.13)	(0.94)	(-0.41)
$LnAge_{i,t}$	0.307**	0.128	0.346**	0.178*	-0.066	-0.122	0.262**	0.093
	0.074		0.084		-0.016		0.063	
	(2.95)	(1.35)	(2.84)	(1.89)	(-0.09)	(-0.21)	(2.43)	(0.97)
$FundRisk_{i,t}$	-6.948	-0.848	-6.772	-6.185	0.293***	0.120	-6.946	-0.990
	-1.668		-1.647		0.070		-1.667	
	(-1.07)	(-0.13)	(-0.92)	(-1.29)	(2.82)	(1.23)	(-1.07)	(-0.16)
YEAR FE	Y	Y	Y	Y	N	N	Y	Y
SEGMENT FE	Y	Y	Y	Y	Y	Y	Y	Y
N	5345	5345	3922	3922	5345	3922	5345	5345
Pseudo R-sq or R-sq	0.152	0.283	0.151	0.278	0.140	0.275	0.151	0.283

Table 6: Multi-Dividend Policy and Mutual Fund Flows

This table reports coefficients and associated t-statistics from OLS regressions of yearly relative flows on multi-dividend dummy, other fund characteristics, and their interaction terms. The dependent variables are yearly relative flows. The first column in each regression reports the main effects of fund attributes and multi-dividend dummy. The second column reports the interaction effects. All variables are defined in Table 2. Pquintile1 is the lowest performance quintile, defined as min(Prank, 0.2), where Prank is a fund's percentile performance relative to other funds in the same segment. It ranges from 0 (the worst funds) to 1 (the best funds). Pquintile2_4 is the second to fourth performance quintile, defined as min (Prank-Pquintile1, 0.6). Pquintile5 is the highest performance quintile, estimated as Prank-Pquintile1-Pquintile2_4. RelFlow is the yearly relative flow after winsorizing at 2% level. FundRisk is the standard deviation of raw returns during one year. ManFlow is the yearly relative net flows to fund *i*'s family. SegFlow is the yearly relative net flows to fund *i*'s segment. All other variables are defined in Table 2. Year FE, and Segment FE show whether we include year, and segment fixed effects. Standard errors are clustered by fund and year. *** indicates significance at 1% level, ** indicates significance at 5% level, and * indicates significance at 10% level.

	Yearly Relative Flow$_t$					
	(1)		(2)		(3)	
	Main Effect	Interaction	Main Effect	Interaction	Main Effect	Interaction
MultiDiv$_{i,t}$	-0.063		-0.087		-0.084	
	(-1.05)		(-1.35)		(-1.13)	
LnDivRatio$_{i,t-1}$	-0.660	1.797***	-0.912	1.948***	-1.186	2.047***
	(-1.17)	(2.96)	(-1.52)	(3.27)	(-1.95)	(3.36)
Fundret$_{i,t}$	0.007***	0.001***				
	(5.59)	(3.31)				
Pquintile1$_{i,t}$			0.053	0.005	0.066	-0.014
			(0.57)	(0.03)	(0.66)	(-0.07)
Pquintile2_4$_{i,t}$			0.094***	0.041	0.096***	0.040
			(4.38)	(1.41)	(4.68)	(1.2)
Pquintile5$_{i,t}$			0.540***	-0.362***	0.542***	-0.364***
			(5.79)	(-3.03)	(5.61)	(-2.9)
PartCost$_{i,t-1}$	-0.020***	0.023**	-0.019***	0.021*	-0.022***	0.020*
	(-2.63)	(1.96)	(-2.6)	(1.78)	(-2.91)	(1.66)
BackLoad$_{i,t-1}$	-0.05136	0.03655	-0.05535	0.048018	-0.04431	0.055293
	(-4.04)	(0.95)	(-4.42)	(1.17)	(-4.06)	(1.28)
No12B$_{i,t-1}$	-0.050 ***	0.000	-0.053***	0.004	-0.053***	0.008
	(-3.41)	(0.01)	(-3.7)	(0.22)	(-3.63)	(0.23)
LnSize$_{i,t-1}$	-0.015***	0.010***	-0.016***	0.010***	-0.016***	0.011***
	(-6.58)	(4.52)	(-6.23)	(4.53)	(-6.71)	(4.64)
TurnRatio$_{i,t-1}$	-0.000**	0.000	-0.000**	0.000	-0.000**	0.000
	(-2.26)	(0.96)	(-2.17)	(1.26)	(-2.32)	(1.33)
LnAge$_{i,t-1}$	-0.015***	-0.007	-0.017***	-0.005	-0.016***	-0.005
	(-2.83)	(-0.7)	(-2.75)	(-0.51)	(-2.65)	(-0.51)
FundRisk$_{i,t-1}$	-1.091*	0.070	-1.708***	0.138	-0.462	0.199
	(-1.91)	(0.18)	(-3.04)	(0.42)	(-1.36)	(0.31)
RF$_{i,t}$					-0.046	-0.035
					(-0.88)	(-0.44)
RelFlow$_{i,t-1}$	0.318***	0.028	0.315***	0.029	0.318***	0.027006
	(8.82)	(0.77)	(8.54)	(0.81)	(8.51)	(0.8)
ManFlow$_{i,t}$	0.002***		0.002***		0.002***	
	(2.6)		(2.39)		(2.28)	
SegFlow$_{i,t}$	0.126*		0.261***		0.398***	
	(1.79)		(2.78)		(7.52)	
Year FE	Yes		Yes		No	
Segment FE	Yes		Yes		Yes	
N	9362		9362		9362	
R^2	0.245		0.243		0.216	