Reinvesting Dividends*

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December 29, 2022

Abstract

We challenge conventional wisdom that retail investors largely consume dividends and rarely reinvest them. Using a German online brokerage dataset, we show that the decision whether to consume or reinvest dividends depends on the structure of an investor's brokerage account. Brokerage cash serves as a buffer that absorbs dividends, keeps them from being spent and, over the long run, is drawn down when dividends are reinvested. Using independent international survey evidence, we show that an account structure including brokerage cash is the rule, not an exception. Therefore, our results generalize to a large share of the retail investor population.

Keywords: dividend reinvestment, default effects, brokerage cash, mental accounting, household finance, retail investors

JEL Classification: D14, G11, G40, G41, G50, G51

*We thank Olga Balakina, Monika Burckhardt, Markku Kaustia, Jaemin Kim, Alexander Klos, Steffen Meyer, Terry Odean, Michael Ungeheuer, and Elona Xhulaj for helpful comments and thank Lukas Mertes for excellent research assistance. We value the feedback from participants at the Aarhus-Amsterdam-Kiel Finance Workshop and the Research in Behavioral Finance Conference, Amsterdam. We are grateful to a bank for providing us with the necessary data for this study and appreciate the neat preparation of these data by Daniel Dorn. We acknowledge financial support by the German Research Foundation (DFG grant WE 993/15-1).
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Say you own a stock portfolio worth USD 100,000 and one of your stocks pays a USD 500 dividend. Imagine the USD 500 are paid to your brokerage cash balance. What would you do? Now imagine the USD 500 are directly paid to your checking account instead. What would you do then? Our results suggest the following: In the first situation, you would leave the dividend as cash in your brokerage account until you eventually reinvest it as an add-on to another investment. In the second situation, you would consume the dividend or leave it in your checking account but you would not reinvest it back into your securities portfolio. The decision whether to reinvest dividends, consume them, or keep them as cash is largely driven by default effects, which can tilt the decision towards either alternative depending on the default destination of the dividends.

What determines investors' dividend reinvestment and consumption behavior? Previous studies (Baker, Nagel, and Wurgler 2007; Kaustia and Rantapuska 2012; Di Maggio, Kermani, and Majlesi 2020; Bräuer, Hackethal, and Hanspal 2022) find little reinvestment of dividends by retail investors and document a higher marginal propensity to consume out of dividend income than out of unrealized capital gains. Such a consumption pattern is at odds with rational theories as the dividend payment itself does not affect investor wealth. A prominent explanation for this pattern is that investors engage in mental accounting, separating dividends and capital gains into two different mental accounts, which they have different marginal propensities to consume from (Shefrin and Statman 1984; Shefrin and Thaler 1988). Additionally, Kaustia and Rantapuska (2012) propose default effects (i.e., people's tendency to follow the default course of action) as another important factor for investors' handling of dividends. The authors argue that investors fail to reinvest dividends as they follow the default course of action, which is to do nothing and let dividends accumulate in their bank accounts. In this explanation of investor behavior, several open questions remain: What happens to accumulated dividends over the long run? Do investors consume or reinvest them with a delay? Are there differences in the default course of action depending on the type of account that dividends are paid out to? And how do default effects interact with mental accounting in explaining investors' dividend reinvestment and consumption behavior? In this paper, we examine retail investors' short- and

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long-run reactions to dividend payments, test for differences depending on the structure of their brokerage account, and investigate the prevalence of different account structures (and therefore default effects) among retail investors.

We use data from a German online brokerage from 2007 through 2011 to trace the flow of dividend proceeds up to a year after payment. Our three main findings can be summarized as follows: First, we find that 79% of dividends are reinvested in securities portfolios, while virtually none are withdrawn from brokerage accounts for consumption. With such a large share of reinvestment, our results strongly deviate from previous studies, which report that dividends are mostly consumed and rarely reinvested by retail investors (Baker, Nagel, and Wurgler 2007; Kaustia and Rantapuska 2012; Di Maggio, Kermani, and Majlesi 2020; Bräuer, Hackethal, and Hanspal 2022). Second, we show that only 12% of dividends are reinvested in the month of payment; the remainder of reinvestments is distributed among all months of the year following the dividend payment, with a larger share of reinvestments falling into more trading-heavy months. Until they are reinvested, dividends remain parked as cash in investors' brokerage accounts. Third, motivated by our finding that dividends are initially largely absorbed by investors' brokerage cash, we analyze a subsample of investors without brokerage cash. Such investors use their checking accounts to settle trades and receive dividends instead. Within this subsample of investors, we find virtually zero dividend reinvestment.

As a mechanism that jointly explains our three main findings, we propose an interaction of default effects (Samuelson and Zeckhauser 1988) and account structure. More specifically, we argue that the account that dividends are paid out to, being either the brokerage cash balance or a checking account, plays a key role in dividend reinvestment and consumption behavior. We define brokerage cash as a cash position that is part of the brokerage account and primarily, if not exclusively, serves as the link between an outside (reference) bank account and securities investments.[1] If an investor transfers money to his brokerage account to invest it in securities, the money is added to the brokerage cash balance. In turn, if an investor sells

[1]Brokerage cash is a standard feature of brokerage accounts at many brokers. The term "brokerage cash" is, e.g., used by Robinhood. Other brokers may use different terms for equivalent cash positions. For examples and an overview of brokerage cash at large German and US brokers, see Section F in the Internet Appendix.

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securities or receives a dividend payment, the proceeds are also added to the brokerage cash balance. Brokerage cash is generally not designed as a bank account through which regular payment transactions are cleared (e.g., bills are paid). To consume dividends that are parked as brokerage cash, an investor would have to transfer the cash from his brokerage account to another bank account. The behavioral sciences literature (e.g., Thaler and Benartzi 2004; Rozin et al. 2011) routinely shows that even seemingly small steps, as those involved in making a bank transfer, are often sufficient to cause inertia. Thus, as the investor defaults to doing nothing, dividend proceeds initially remain as cash in his brokerage account.

As an alternative to having a brokerage cash balance, some brokerage accounts are directly linked to a checking account; that is, dividends are paid out to the same account from which the investor pays his bills. This is possible for investors who also maintain a checking account with their broker. Faced with such an account structure, investors with a preference for consuming dividends can easily do so as their dividends are readily spendable without additional effort. And even without a preference for consuming dividends, investors may consume dividends paid to checking accounts by default as checking accounts are used for day-to-day spending.

While dividends paid to checking accounts may have reached their final destination by being consumed, the question remains: What happens to dividends initially parked as cash in brokerage accounts? Our results suggest that investors reinvest these dividends in the course of their regular trading activity. Instead of making an extra reinvestment-dedicated buy order in the amount of the dividend, investors simply purchase more or, equivalently, sell less securities than they would have had they received fewer dividends and thus accumulated a smaller cash balance. We provide four pieces of evidence to support this hypothesis. First, we show that reinvestment activity is highest during months in which trading activity is generally high. Second, we estimate that more than half of reinvestment stems from substitutions of sales with dividend proceeds, not from increased purchases. Third, in line with Kaustia and Rantapuska (2012) and Hartzmark and Solomon (2019), we detect no significant reinvestment back into the dividend-paying position, suggesting that investors do not associate dividend proceeds with the dividend-paying position upon reinvestment. Fourth, we examine dividend initiations as passive

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shocks to investors' dividend income. While we do find a significant increase in investments, we do not find a significant increase in the number of purchases after an investor receives a large, newly initiated dividend.

Methodologically, we trace the flow of dividends by differentiating the potential uses of dividends: reinvestment, withdrawal from the brokerage account, or increase of brokerage cash. To estimate the extent to which dividends are reinvested, withdrawn, or remain as cash, we pursue a variety of different approaches. In our main design, adapted from Baker, Nagel, and Wurgler (2007), we perform regressions at the investor-month level of investments, withdrawals, and cash increases on contemporaneous and lagged dividends. Additionally, we follow Di Maggio, Kermani, and Majlesi (2020) and instrument changes in dividends with their passive component; that is, we instrument changes in dividend income with changes that are due to changes in firms' payouts, not investors' trading. Furthermore, we conduct a matched event study to examine investors' trading response to newly initiated dividends. We test the validity of our empirical approaches using automatically reinvested dividends that we can identify in our sample and for which we have a clear, mechanically driven ex ante hypothesis of what unbiased estimates would look like.

In addition to our brokerage data analyses, we also conduct an independent online survey among stock market investors in Germany and the United States in 2022. The survey serves two main purposes. First, as we show that dividend uses depend on account structure, we want to find out how common the account structure in our dataset is among retail investors. In the survey, 71% of participants respond that their brokerage account has brokerage cash, while 29% indicate that their brokerage account is linked to their checking account. This means that the setting for which we find high reinvestment rates is similarly faced by a large share of retail investors, at least in Germany and the US. Second, following the call by Chinco, Hartzmark, and Sussman (2022) to directly ask investors about their investment behavior, we use the survey to produce additional estimates on dividend uses, independent from our brokerage dataset. In the survey, 76% of participants report that they have primarily reinvested their dividends in the past, 11% that they have spent them, and 13% that they left them in the bank as cash.

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Moreover, we find reinvestment rates to be lower and consumption rates to be higher among participants whose brokerage account is directly linked to their checking account. Thus, the survey evidence also provides support for our brokerage data estimates of dividend uses and our proposed mechanism of how account structure influences dividend uses.

Our study primarily contributes to the literature on retail investors' dividend reinvestment and consumption behavior (Baker, Nagel, and Wurgler 2007; Kaustia and Rantapuska 2012; Di Maggio, Kermani, and Majlesi 2020; Bräuer, Hackethal, and Hanspal 2022). We produce estimates of dividend reinvestment and consumption rates that conflict with previous studies. Why? On the one hand, this is due to methodological improvements. By separating brokerage cash increases from brokerage account withdrawals, we are able to discriminate between two potential reasons for an absence of immediate reinvestment: inertia and consumption. In the brokerage dataset studied by Baker, Nagel, and Wurgler (2007), brokerage cash is not observable.[2] Therefore, these authors cannot discriminate between the consumption of dividends and dividends accumulating as cash. Assuming away the latter possibility, the authors interpret net portfolio withdrawals (i.e., the decrease in security portfolio value that occurs when dividends are not immediately reinvested) as a "precursor to expenditure" (Baker, Nagel, and Wurgler 2007, p. 232). Yet, our findings indicate that portfolio withdrawals have little to do with expenditure but indeed reflect that dividends accumulate as cash. Methodological considerations also help explain how our paper differs from Kaustia and Rantapuska (2012), who only report reinvestment activity up to two weeks after payment and find little reinvestment activity during this time frame. The authors themselves suggest that "investors could of course just let their dividends accumulate, and invest at a later time, perhaps annually" (Kaustia and Rantapuska 2012, p. 2367), which is essentially what we test and find evidence for in our brokerage data.

On the other hand, differences in dividend reinvestment and consumption rates to Di Maggio, Kermani, and Majlesi (2020) and Bräuer, Hackethal, and Hanspal (2022) can be accommodated within the mechanism of default effects and account structure that we explore. First, while we study a dataset in which almost all dividends are paid to brokerage cash balances, Bräuer,

[2]We thank Terry Odean for corresponding with us about this matter.

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Hackethal, and Hanspal (2022) study a dataset in which all dividends are directly paid to checking accounts. Consistent with estimates for the subset of dividends paid to checking accounts in our sample, Bräuer, Hackethal, and Hanspal (2022) report lower reinvestment and higher consumption rates in their sample. Second, Di Maggio, Kermani, and Majlesi (2020) examine a population-wide dataset of Swedish households from 1999 to 2007. The authors find that 40% to 60% of dividends are consumed and only 20% to 50% reinvested in securities portfolios. In a representative survey of Swedish investors from 2005 to 2010, Chater, Huck, and Inderst (2010) find that 60% of Swedish investors purchased investment products through an advisor or salesperson. Therefore, it is likely that a large share of dividend consumption in Di Maggio, Kermani, and Majlesi (2020) is not self-directed but based on the recommendations of financial advisors. It is plausible that advisors encourage the withdrawal of dividends to signal investment success if investors, particularly less sophisticated, advice-seeking investors, fall victim to the free-dividend fallacy (Hartzmark and Solomon 2019) and do not understand that dividends come at the expense of capital decreases. That financial intermediaries prefer investors to receive dividends is shown by Harris, Hartzmark, and Solomon (2015), who discover a tendency among mutual funds to trade in and out of stocks to increase the amount of dividends that they can distribute to investors.

While our results conflict with previous studies that analyze brokerage and administrative data, our estimates of dividend uses are in line with previous survey evidence. Dong, Robinson, and Veld (2005) survey a Dutch household panel in which 48% of panelists reinvest dividends, 39% leave dividends in the bank, and 13% consume them. Bräuer, Hackethal, and Hanspal (2022) obtain similar numbers in a survey of a subsample of their brokerage clients: 52% reinvested or saved their last dividend, 30% did nothing specific with it, and 17% consumed it. Conditioning on comparable parameters, we find similar numbers in our survey. Among German investors without brokerage cash, which is the investor group that Bräuer, Hackethal, and Hanspal (2022) study, we find that 60% of investors reinvested their dividends, 22% did nothing with them, and 18% consumed them. The fact that previous survey evidence does

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not support the idea that dividends are largely consumed and rarely reinvested has received surprisingly little attention.

In a broader context, our work is related to Meyer, Pagel, and Previtero (2020) and Meyer and Pagel (2022), who analyze the reinvestment of liquidation proceeds from mutual fund closures, representing another form of forced realization. Within 30 days after payment, they estimate consumption of liquidation proceeds at 11% and reinvestment in securities or savings accounts at 82%. Thus, while the overall proportions of consumption and reinvestment are similar to our estimates for dividends, liquidation proceeds are processed much faster. The reason is likely the larger size of an individual liquidation payment (EUR 4,729 in Meyer, Pagel, and Previtero 2020, vs. EUR 180 for dividends in our sample) that makes it more salient and warrants the effort of an extra reinvestment-dedicated buy order.

Our results have implications for studies that investigate the impact of dividend reinvestment on prices (Ogden 1994; Berkman and Koch 2017; Kvamvold and Lindset 2018; Schmickler and Tremacoldi-Rossi 2021; Hartzmark and Solomon 2022). Despite high average reinvestment rates in securities over the long run, our findings suggest that retail investors' reinvestment activity is not concentrated in terms of its target being the dividend-paying asset or in terms of its timing occurring shortly after payment. Therefore, retail investors' contribution to reinvestment-induced price pressure, both on the security and on the market level, is likely less pronounced than that of institutional investors.

This paper also adds to research on how the design of financial products interacts with human behavioral traits in producing financial outcomes (e.g., Barber and Odean 2002; Choi, Laibson, and Metrick 2002; Choi et al. 2004; Thaler and Benartzi 2004; Benartzi and Thaler 2007; Beshears et al. 2009; Choi, Laibson, and Madrian 2009; D'Acunto, Prabhala, and Rossi 2019; Loos et al. 2020; Kalda et al. 2021). Our results establish the importance of brokerage cash as a buffer that keeps investment proceeds physically, and arguably also mentally, in the sphere of investments. If investment proceeds are paid to brokerage cash balances and not directly to checking accounts, default effects are more likely to favor reinvestment over consumption.

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Incorporating this finding into the design of brokerage accounts, financial institutions could help investors achieve higher long-term savings rates and increase stock market participation.

Finally, this study contributes to research on dividend clienteles (e.g., Baker and Wurgler 2004; Graham and Kumar 2006; Becker, Ivković, and Weisbenner 2011; Jiang and Sun 2020; Daniel, Garlappi, and Xiao 2021). In subsample analyses, we show that initial inertia followed by delayed reinvestment is also the prevailing pattern among high-yield investors and retirees. This means that even investors who have been argued to deliberately choose high-dividend yield portfolios for consumption motives (e.g., Graham and Kumar 2006; Daniel, Garlappi, and Xiao 2021) do not reveal a significant propensity to withdraw dividends if these are absorbed by brokerage cash. Although not necessarily contradictory to consumption preferences for dividends, this finding raises the question of how important consumption preferences actually are for the formation of dividend clienteles.

1 Data

The brokerage data comprise monthly information on holdings and trades of 40,000 randomly sampled brokerage clients at one of the three largest online retail banks in Germany from January 2007 through October 2011. The variables include the values of brokerage cash, certificates of deposit (CDs), and securities held by an investor in a given month.[3] The brokerage records also contain the EUR sums of an investor's securities purchases and sales for each month. Additionally, we observe the annual interest payment that an investor earns on his brokerage cash. We match stock and fund holdings with dividend data from Datastream and CRSP.[4]

Furthermore, the dataset includes information on funds that are eligible for automatic dividend reinvestment plans. For these funds, the bank automatically reinvests dividends back into the dividend-paying fund per default. Investors have the option to disable automatic reinvestment. Throughout our analyses, we separate dividends paid by funds eligible for automatic dividend reinvestment plans from other dividends.

[3] We do not add CDs to the securities portfolio of an investor but account for them separately.

[4] In their raw form, these data represent pre-tax numbers. We incorporate tax considerations to estimate dividend payments actually received by investors as accurately as possible and describe these considerations in Section A of the Internet Appendix.

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1.1 Definitions

To investigate the flow of dividends, we formulate the following identity of sources and uses of funds:[5]

$$D_{i,t} + D_{AR,i,t} + I_{i,t} + R_{i,t} = Inv_{i,t} + CdInv_{i,t} + CshInc_{i,t} + AccWd_{i,t}. \quad (1)$$

$D_{i,t}$ and $D_{AR,i,t}$ denote the sums of non-automatically reinvested and automatically reinvested dividends paid to investor i in month t, respectively. $I_{i,t}$ denotes the amount of interest investor i receives on his brokerage cash balance in month t. $R_{i,t}$ denotes payments to investor i in month t that we do not observe explicitly due to data constraints, such as payments by bonds or structured securities. As securities other than stocks and funds make up less than 2% of our sample, we believe that $R_{i,t}$ is negligible.[6] $Inv_{i,t}$ denotes net investments in investor i's securities portfolio in month t. $CdInv_{i,t}$ denotes net investments in CDs by investor i in month t. $CshInc_{i,t}$ denotes the net increase in brokerage cash of investor i in month t. Finally, $AccWd_{i,t}$ denotes net brokerage account withdrawals by investor i in month t (i.e., net cash transfers from the brokerage account to the checking account). As we observe all other variables, neglecting $R_{i,t}$, explicitly in our dataset, $AccWd_{i,t}$ is the variable we infer as the residual in Equation (1).

The left-hand side of Equation (1) is entirely composed of non-negative payments to an investor that are not directly initiated by the investor himself. Variables here are purely sources of funds. The right-hand side of Equation (1) is composed of variables that can turn both positive and negative (i.e., they can become both sources and uses of funds). Yet, ceteris paribus, when a variable on the left-hand side is positive (i.e., when a dividend or interest payment is made), some variable on the right-hand side must turn positive and absorb the payment. Dividends and interest payments must either be reinvested, increase the cash balance or be withdrawn from the brokerage account.

[5] For readability, we suppress the investor index i in our results tables.

[6] We repeat our main analyses excluding investor-months in which any assets but stocks or funds are held and find that the results do not significantly differ from our main results.

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Baker, Nagel, and Wurgler (2007) provide a similar identity to obtain their main variable of interest, net portfolio withdrawals, $PfWd_{i,t}$:[7]

$$PfWd_{i,t} = A_{i,t-1} + G_{i,t} + D_{i,t} + D_{AR,i,t} - A_{i,t}. \tag{2}$$

$G_{i,t}$ denotes the capital gains of the securities portfolio of investor i in month t. In the following, we show how portfolio withdrawals, $PfWd_{i,t}$, map into our identity of sources and uses of funds. First, the terms describing the change in portfolio value produce net investments, $Inv_{i,t}$:

$$Inv_{i,t} = A_{i,t} - (A_{i,t-1} + G_{i,t}). \tag{3}$$

Inserting into Equation (2) yields:

$$PfWd_{i,t} = D_{i,t} + D_{AR,i,t} - Inv_{i,t}. \tag{4}$$

And plugging this into our identity of sources and uses of funds, Equation (1), eventually gives:

$$PfWd_{i,t} = CshInc_{i,t} + CdInv_{i,t} + AccWd_{i,t} - I_{i,t} - R_{i,t}. \tag{5}$$

Equation (5) highlights the fact that portfolio withdrawals, $PfWd_{i,t}$, do not automatically translate into brokerage account withdrawals, $AccWd_{i,t}$. Yet, only the latter provide the liquidity for consumption of dividend proceeds. Correspondingly, large $PfWd_{i,t}$ could mask the fact that dividend proceeds are not consumed but simply raise the brokerage cash balance by means of large brokerage cash increases, $CshInc_{i,t}$.

1.2 Filters

We process the data as described in Baker, Nagel, and Wurgler (2007). In particular, we scale all variables by $A_{i,t-1}$, the value of the securities portfolio of investor i at the end of

[7] While Baker, Nagel, and Wurgler (2007) reference portfolio withdrawals as $C_{i,t}$, we use the symbol $PfWd_{i,t}$. To keep the naming of the withdrawal variables $PfWd_{i,t}$ and $AccWd_{i,t}$ separate, we refer to the former as portfolio withdrawals and to the latter as brokerage account withdrawals. To stay consistent with our notation, we include two separate dividend variables, separating payments depending on their eligibility for automatic reinvestment.

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the previous month $t-1$.[8] We exclude account opening and closing months and exclude investors whose portfolio value falls below EUR 10,000 in any of the remaining months. We only include investor-months in which we can identify dividend data for more than 75% of assets and in which we have data on dividends from months t to $t-11$. Similar to Baker, Nagel, and Wurgler (2007), who exclude observations for which net portfolio withdrawals, $PfWd_{i,t}$, exceed 50% of portfolio value in absolute terms, we also exclude observations for which the absolute values of either $PfWd_{i,t}$, $Inv_{i,t}$, $CshInc_{i,t}$, $CdInv_{i,t}$ or $AccWd_{i,t}$ exceed 50% of portfolio value. This filter serves to guard regression estimates against an overbearing influence of outliers.[9] After application of filters, we are left with 8,439 investors providing 278,771 investor-month observations.

1.3 Summary statistics

Table 1 presents the summary statistics across investor-months after application of filters. The mean securities portfolio value is EUR 72,060 (median EUR 38,370). Stocks and funds make up 47% and 51% of the average portfolio, respectively. The average brokerage cash balance is EUR 26,790 (median EUR 9,700).[10] Mean net investments are positive at 0.47% per month. The average yield of non-automatically reinvested dividends is 0.13% per month (0.11% dividends paid by stocks plus 0.02% dividends paid by mutual funds). In addition, mutual funds pay average dividends of 0.02% per month that are automatically reinvested.

Figure 1 illustrates the size distribution of dividend payments across investor-months at a higher resolution. The figure presents two histograms: one for dividends in EUR and one for dividends scaled by portfolio value. Panel A shows that dividends payments in 66% (93%) of investor-months with positive dividend payments are smaller than EUR 200 (EUR 1,000).

[8] For readability, the symbols defined above already include this scaling.

[9] We do not generally exclude observations where gross purchases, $PRCH_{i,t}$, or sales, $SLS_{i,t}$, exceed 50% of portfolio value as long as net investments, $Inv_{i,t}$, being the difference of the two, are smaller than 50% of portfolio value in absolute terms. First, there is no economic or econometric reason to exclude such investor-months. Second, excluding such investor-months would bias the sample against high-turnover investors. Yet, when we perform regressions in which gross purchases or sales are the dependent variable, we do exclude observations where either of these variables exceeds 50% of portfolio value, again, in order to not let estimates be driven by a few extreme data points. When interpreting results for gross purchases and sales, one should nonetheless keep the exclusion of high-turnover investor-months in mind. This also explains why estimates for gross purchases and sales do not exactly add up to estimates for net investments.

[10] That many investors' brokerage cash balances are quite high compared with portfolio values can be explained by the bank promoting brokerage cash as a form of a savings account and paying interest on brokerage cash.

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Similarly, Panel B shows that dividends payments in 87% (99.8%) of investor-months with positive dividend payments are smaller than 1% (5%) of portfolio value.[11] While these numbers illustrate that individual dividend payments may be too small to be sensibly dealt with one by one, they do not mean that dividend payments are irrelevant for investor wealth, collectively and in the long run. For example, assuming an investment horizon of 30 years, annual total returns of 6%, consisting of 5% capital gains and 1% dividends, the gap in terminal wealth between an investor that fully reinvests dividends and an investor that immediately consumes dividends upon payment amounts to 33% ($1.06^{30}/1.05^{30} - 1$).

2 Methodology

In this section, we present and motivate our main regression design. We also test the design on automatically reinvested dividends.

2.1 Regression design

With observations on the investor-month level, our main regression design consists of ordinary least squares (OLS) regressions of dividend uses (i.e., net investments, brokerage cash increases, and brokerage account withdrawals) on dividends and lagged dividends. Our regression model is similar to that used by Baker, Nagel, and Wurgler (2007) for their brokerage data analysis with two modifications. First, we include investor and time fixed effects to exploit the panel structure of the dataset in an unbiased way. Second, we run multiple separate regressions instead of a single regression to estimate delayed dividend flows with minimal influence of correlations with lagged portfolio value, which we use as a scaling factor.

The first modification follows Di Maggio, Kermani, and Majlesi (2020) and Bräuer, Hackethal, and Hanspal (2022), who similarly restrict their regressions to within-investor variation. A potential concern with using between-investor variation is that investors' dividend yield is not exogenous to their investment activity. Rather, dividend yield is an outcome of investors'

[11] That small dividend payments not only make up a large fraction of the *number* of dividend payments but also a large share of the *value* of dividend payments can be seen in Figure B1 of the Internet Appendix. For example, around half of the sample's total dividend payment value in EUR comes from investor-months in which dividends are smaller than EUR 1,000.

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investment preferences, which simultaneously determine their investment activity, aside from dividend reinvestment. For example, Graham and Kumar (2006) show that investors with a higher dividend yield tend to have lower portfolio turnover. We find similar relationships in our sample, presented in Table B3 of the Internet Appendix. Without investor fixed effects, such endogenic relationships have the potential to bias regression estimates.[12]

Including investor and time fixed effects, α_i and α_t, our regression equation for a potential use of dividends, $U_{i,t}$, by investor i in month t is as follows:

$$U_{i,t} = \beta_0 D_{i,t} + \alpha_i + \alpha_t + e_{i,t}. \tag{6}$$

Variables that we plug into $U_{i,t}$ are the different potential uses of dividends, $CshInc_{i,t}$, $AccWd_{i,t}$, $CdInv_{i,t}$, and $Inv_{i,t}$, from Equation (1), securities purchases and sales that together make up net investments, $PRCH_{i,t}$ and $SLS_{i,t}$, and, for comparability with Baker, Nagel, and Wurgler (2007), net portfolio withdrawals, $PfWd_{i,t}$.[13]

With the second modification, we separate the estimation of delayed dividend flows into multiple regressions. To estimate delayed reinvestment, Baker, Nagel, and Wurgler (2007) perform a single regression including contemporaneous dividends and the average dividend of the prior eleven months. In contrast, we perform eleven regressions, each including only one of the eleven months of lagged dividends alongside contemporaneous dividends. Hence, for a given lag $s \in \{1, 2, ..., 11\}$, the regression equation for a potential use of dividends, $U_{i,t}$, by investor i in month t is as follows:[14]

$$U_{i,t} = \beta_0 D_{i,t} + \beta_s D_{i,t-s} + \alpha_i + \alpha_t + e_{i,t}. \tag{7}$$

[12] Nonetheless, in Table D1 of the Internet Appendix, we also report estimates of pooled regressions without fixed effects. In conjunction with Table B3, the impact of cross-sectional biases becomes apparent.

[13] For some regressions, instead of $D_{i,t}$, we use automatically reinvested dividends, $D_{AR,i,t}$, or interest on brokerage cash, $I_{i,t}$, as regressors, representing the other sources of funds from Equation (1). If the different sources were correlated within a given investor, we would have to include each of them in all regressions to produce unbiased estimates. But, as our unreported results show, correlations are minimal and do not influence estimates to a noteworthy extent.

[14] When performing these regressions, we only report coefficient estimates for lagged dividends, β_s. We do not report β_0, which is estimated twelve times including the contemporaneous-only estimate, for the delayed regressions as its estimate does not change much compared to the contemporaneous-only estimate.

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We do this to address the potential problem of scaling in fixed effects regressions, highlighted by Welch (2021). Because we scale dividends with beginning-of-month portfolio value, regressions with scaled dividends as the dependent variable could either tell us something about relationships with the numerator (i.e., dividends; what we want), or about relationships with the denominator (i.e., portfolio value; what we do not want). To what extent covariance between the dependent variable and the denominator influences regressions depends on the share of variation in the fraction that is attributable to the denominator. If the numerator (denominator) varies a lot and the denominator (numerator) is relatively stable, regressions are driven by the numerator (denominator). In our case of scaling dividends with portfolio value, we show in Figure B2 of the Internet Appendix that variation in *monthly* dividends scaled by portfolio value is primarily driven by the numerator (i.e., dividends). By contrast, variation in *yearly* dividends scaled by portfolio value is primarily driven by the denominator (i.e., portfolio value). This is because dividends vary a lot on a monthly basis but are relatively stable over the course of a year within an investor. Therefore, we mitigate potential problems caused by scaling by only including one month of lagged dividends per regression.[15,16]

2.2 Methodology check using automatically reinvested dividends

To check the validity of our methodology, we perform a test run on automatically reinvested dividends. For these, we have a strong ex ante hypothesis regarding true coefficients. We expect that automatically reinvested dividends are almost completely reinvested shortly after payment. We cannot be certain of complete reinvestment due to the possibility that some investors might opt-out of automatic reinvestment. Yet, as automatic reinvestment is the default option, we expect a large share of investors to use it. The results are reported in Panel A of Table C1 in the Internet Appendix. They indeed suggest that 96% of automatically reinvested dividends are

[15] The inclusion of contemporaneous dividends and all eleven individual lags in a single regression is equivalent to the inclusion of yearly dividends. We still include contemporaneous dividends alongside each lag in all regressions to guard against omitted variable bias. This bias would, for example, be relevant when dividends cause large positive cash increases in the month of payment but cash reductions in subsequent months.

[16] As an alternative approach, we follow Chaney, Sraer, and Thesmar (2020) and include the denominator (i.e., one over portfolio value), as an additional regressor, and report the results in Table D2 of the Internet Appendix. Our other empirical designs, i.e., the IV regressions following Di Maggio, Kermani, and Majlesi (2020) in Table 5 and our matched regressions using dividend initiations in Table 6, are unaffected by this potential issue.

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reinvested, with 63% of dividends being reinvested in the payment month.[17] The fact that our regressions produce these economically sensible and statistically significant estimates supports the validity of our methodology.

We also show that our methodological modifications are necessary by repeating our test run using the pooled regression design from Baker, Nagel, and Wurgler (2007). The results are reported in Panel B of Table C1 in the Internet Appendix. Estimates include a significant *negative* delayed reinvestment of -121% of dividends. We believe that this number is not an accurate estimate of dividend reinvestment but merely representative of the fact that investors who receive more automatically reinvested dividends make lower average net investments, as can be seen in Table B3 of the Internet Appendix.

3 Main results

In this section, we estimate dividend reinvestment and consumption rates in our brokerage dataset. We analyze how these rates develop over time and investigate to what extent reinvestment comes from increased purchases or reduced sales. We show how our results relate to portfolio withdrawals and explore our proposed mechanism of account structure-dependent default effects.

3.1 Delayed dividend reinvestment

We begin by tracing the cumulative flows of dividends into the different potential uses over a one-year period. Figure 2 plots the results which are based on regression estimates from Table 2. The blue bars show how the share of dividend proceeds in investors' brokerage cash balances develops. The green, yellow, and purple lines show how the dividend proceeds are used for withdrawals from brokerage accounts, investments in CDs, and reinvestments in securities, respectively. Furthermore, the bottom part of the figure plots how average portfolio turnover develops over the one-year period. Focusing on the blue bars first, we find that two months

[17] Estimates also contain another 18% of dividend reinvestment one month after payment. The one-month delay in reinvestment can be explained by the fact that fund dividends are often paid at the end of the month. The buy order initiated by the automatic reinvestment plan is then only executed in the next month.

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after payment, 85% of dividends still remain as cash in brokerage accounts. This is strong evidence against the planned consumption of dividends on the basis of mental accounting (Bräuer, Hackethal, and Hanspal 2022). If an investor engaged in mental accounting and planned to consume dividends, we would expect the investor to withdraw the dividend proceeds shortly after payment, such that he can spend them.[18] Yet, further findings do not only clash with the hypothesis that investors *plan* to consume dividends but with the hypothesis that investors consume dividends *at all*. After a full year, net brokerage account withdrawals sum to -1% (green line). Instead, net investments in securities amount to 79% after a year (purple line). Additionally, net investments in CDs reach a total of 6% over a one-year period (yellow line) and 16% of dividends remain as brokerage cash (blue bar). In other words, our results suggest that the average dividend is hardly consumed and almost fully reinvested in securities portfolios.[19]

We also find that reinvestment takes time and that, until dividend proceeds are finally reinvested, they remain as cash in investors' brokerage accounts. Figure 2 shows that reinvestment rates are highest in the month of payment, as well as four to six months afterwards. Reinvestment rates in months one to three and nine to eleven are slightly lower, yet still positive; in month seven and eight, only small reinvestments are made. To better understand these patterns, we investigate how the timing of reinvestments relates to average trading activity. The lower panel of Figure 2 plots average turnover in the one-year period after payment.[20] Note that German companies usually pay dividends once a year, in May (see Figure B2 in the Internet Appendix). Therefore, variation in turnover across months after the average dividend payment mirrors seasonal variations in turnover. Starting with May, the time period of one to three months after payment covers the summer months, when we find trading activity

[18] Certainly, as long as the investor's checking account has enough liquidity, he could increase consumption without a withdrawal of dividends from the brokerage account. But such a mental integration of accounts would be hard to reconcile with a mental accounting of dividends in the first place. If an investor was able to mentally integrate his brokerage cash with his checking account, we would also expect him to realize that a dividend payment is only a cash transfer from a bank account indirectly owned through securities holdings to a personal bank account.

[19] Because we study *net* brokerage account withdrawals, our results also account for the possibility that investors increase consumption by saving less (i.e., by reducing deposits into brokerage accounts).

[20] Average turnover x months after dividend payment is calculated as the weighted average turnover across investor-month observations with weights corresponding to the amount of dividends that have been paid to an investor x months ago. Turnover is calculated as the average of purchases and sales, scaled by beginning-of-month portfolio value.

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to be generally low. Four to six months after payment covers the fall months, when we find trading activity to be generally high. For example, turnover five months after payment is on average 21% higher than turnover one month after payment. In months seven and eight after payment, which represent December and January if dividends are paid in May, we find only small reinvestments. For various reasons, December and January are likely outliers in terms of trading behavior. For example, starting with the taxation of realized gains from 2009 onwards, the realization of losses for tax purposes as in Odean (1998) becomes relevant in our sample. Thus, we believe that the coefficients for lag seven and eight are likely the outcome of general turn-of-the-year-specific trading patterns. Finally, the decay in reinvestment rates from months nine to eleven is natural as fewer and fewer dividends remain to be reinvested.

3.2 Dividends as substitutes for sales

Next, we examine to what extent reinvestment originates from increased purchases or reduced sales. Table 2 reports the results. While 28% of dividends are used for additional purchases, 40% are used as substitutes for sales.[21] In relative terms, purchases account for 41% (28/(28+40)) of net reinvestments, while reduced sales account for 59% (40/(28+40)). How can dividends be used as substitutes for sales? This can best be illustrated with an example. Say an investor needs regular cash payments, for example USD 1,000 per month, to finance securities purchases, liquidity, or consumption. To satisfy this need, the investor usually sells assets worth USD 1,000 every month. But if this investor then receives dividends worth USD 300 in a given month, he only needs to sell assets worth USD 700 in that month. Economically, there is no difference between reinvestment via reduced sales and reinvestment via increased purchases. An investor could either substitute sales with dividends or keep sales unchanged and use dividends to repurchase the sold securities. In both cases, the investor's portfolio and consumption stream are exactly the same. Nonetheless, the finding that a large share of dividend reinvestment is attributable to sales reductions is interesting as it supports our story of dividends often being

[21] As noted above, estimates for purchases and sales do not generally add up to estimates for net investments due to the additional exclusion of observations where purchases or sales exceed 50% of beginning-of-month portfolio value from regressions in which purchases or sales are the dependent variable.

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reinvested *implicitly* rather than *explicitly*. By explicit reinvestment, we mean that the investor uses dividend proceeds to place a separate buy order, which he would not have placed without the receipt of the respective dividend. By implicit reinvestment, we mean that the investor either simply increases the size of a buy order, which he would have placed regardless of the dividend, or that the investor substitutes sales with dividend proceeds from the brokerage cash balance. In terms of default effects, the key difference between the two forms of reinvestment is that explicit reinvestment requires effort while implicit reinvestment does not. If an investor substitutes sales with brokerage cash, the investor even saves effort as he makes fewer trades with than without the implicit dividend reinvestment.

3.3 Portfolio withdrawals

In this section, we investigate how our results relate to portfolio withdrawals. Table 2 reports that in the month of payment, net portfolio withdrawals of dividends are estimated at 88%. This number is similar to, if not higher than, estimates for portfolio withdrawals of dividends in Baker, Nagel, and Wurgler (2007). Yet, in conjunction with estimates for the effect of dividends on contemporaneous brokerage account withdrawals and brokerage cash increases, it becomes clear that withdrawals from *portfolios* do not translate into withdrawals from *brokerage accounts*. The coefficient estimate for dividends withdrawn from brokerage accounts in the month of payment is only -1%. Instead, the 88% estimate of portfolio withdrawals corresponds to brokerage cash increases of 88% in the month of payment.[22]

To demonstrate the robustness of this finding, we replicate and expand Figure 2 in Baker, Nagel, and Wurgler (2007). We sort investor-months with positive dividend payments into deciles based on the amount of dividends received. In Figure 3, we plot median and mean net portfolio withdrawals, brokerage cash increases, brokerage account withdrawals, and investments against median and mean dividends within each decile. In the first row, we relate portfolio withdrawals with dividends. As in Baker, Nagel, and Wurgler (2007), portfolio with-

[22] In general, estimates for net portfolio withdrawals in the month of payment (in the months following payment) are approximately equal to one (zero) minus the estimate for net investments. This is due to the relation between net portfolio withdrawals and net investments from Equation (4).

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drawals increase one by one with dividends in the month of payment, both in terms of median and mean values. As can be seen from the flat relation between investments and dividends in the second row, this finding reflects the general absence of immediate reinvestment. Yet, the panels in row three illustrate that withdrawals from brokerage accounts are also essentially unrelated to dividends in the month of payment. Instead, the panels in the last row show that brokerage cash balances increase one by one with dividends, just as portfolio withdrawals do. The key takeaway is consequently that portfolio withdrawals, introduced as a "precursor to expenditure" (Baker, Nagel, and Wurgler 2007, p. 232), do not easily translate into expenditure as dividends are not even withdrawn from brokerage accounts. Instead, large initial portfolio withdrawals mostly mask initial investor inertia (i.e., that dividends accumulate as cash).

3.4 The mechanism: Default effects and account structure

In this section, we explore a mechanism that can explain the high rates of delayed dividend reinvestment in our sample. We argue that investors tend to follow the path of least resistance and that the path of least resistance depends on the type of account that dividends are paid to. We investigate two different types of accounts that dividends are paid to: brokerage cash and checking accounts. Brokerage cash physically decouples cash for investments from cash for consumption by making reinvestment of investment proceeds easier than consumption. Dividends paid to brokerage cash balances are thus prone to be reinvested rather than consumed. By contrast, checking accounts are used for day-to-day spending. Therefore, default effects favor that dividends paid to checking accounts are consumed rather than reinvested.

While most investors in our sample have dividends paid to brokerage cash balances, 34 investors have dividends paid to their checking accounts. This is possible because these investors also have a checking account with the bank that provides our sample. We first analyze how the summary statistics of these investors compare to the full sample. Numbers are taken from Table B2 in the Internet Appendix. There are 761 investor-month observations of investors

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with directly linked checking accounts.[23] In 204 of these investor-months, dividend payments are made. The mean portfolio value of EUR 51,130 is smaller than in the full sample while the median of EUR 42,820 is larger. At 0.61%, average net investments are larger than in the full sample. The average dividend yield of 0.14% is also larger than in the full sample.

To estimate differences in dividend reinvestment and consumption behavior based on differences in investors' account structure, we expand our main regressions by including interactions of dividends with a dummy that is one if an investor's dividends are paid to his checking account and zero otherwise.[24] Table 3 reports the results. Estimates are naturally quite noisy, given the small number of observations. Yet, overall, the results provide a relatively clear picture of the effect that the type of the account that dividends are paid to has on the uses of dividends. We find that having dividends paid to a checking account increases brokerage account withdrawals by 113 percentage points. This is driven by increased contemporaneous withdrawals in the month of payment of 122 percentage points. Conversely, net reinvestments into securities are reduced by 83 percentage points. Taken together with the unconditional average reinvestment rate of 79 percentage points, this means that the chance of a dividend being reinvested is virtually zero if it is paid to a checking account. The lack of reinvestment among investors with directly linked checking accounts is highly suggestive of a causal link between the type of account that dividends are paid to and their propensity to be reinvested. On the one hand, the source of variation in the type of account that dividends are paid to (i.e., the circumstance that some investors have a checking account with the same bank that they have their brokerage account with), seems coincidental. On the other hand, potential alternative explanations are hard to reconcile with the finding that average net investments and average dividends are rather larger than smaller among investors with directly linked checking accounts.

While we primarily explain our findings with default effects, they can also be explained with mental accounting (Thaler 1985; 1999). According to mental accounting, investors assign money

[23] Twenty three of these investors always have their checking accounts linked; the remaining eleven have their checking accounts linked in some but not all months. This is possible if an investor first has a brokerage account with our bank and then later also opens a checking account with the bank.

[24] In Table D3 of the Internet Appendix, we also include interactions of dividends with other investor characteristics as controls. The results remain similar.

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to different mental accounts based on the money's origin and intended use (Zhang and Sussman 2018). The origin and intended use of brokerage cash are clearly related to investments as brokerage cash either comes from investment proceeds or from liquidity transferred to brokerage accounts with the purpose of being invested. Therefore, we argue that investors assign brokerage cash to a mental account which they have a relatively high marginal propensity to *invest* from. By contrast, checking accounts are primarily used for spending and therefore likely assigned to a mental account which investors have a relatively high marginal propensity to *consume* from. We argue that the mental accounting of dividends by themselves (Shefrin and Statman 1984; Shefrin and Thaler 1988) becomes less important once dividends are parked in either of these accounts. In the absence of physical separation, investors will likely not keep dividends mentally separate from the remainder of their account balance as that would require cognitive effort (Heath and Soll 1996). Therefore, the absorption of dividends into a *physical* account also entails an absorption into the respective *mental* account over time.

3.5 Reinvestment in the dividend payer

In this section, we examine whether dividend reinvestment in investors' portfolios also translates into reinvestment in the dividend-paying position. For this analysis, we break the dataset into investor-security-month observations, meaning that one observation corresponds to one security that an investor holds in a given month. Then, we regress net investments in, as well as purchases and sales of, an individual security by a specific investor in a given month on contemporaneous and lagged dividends that this security paid to that investor. In these regressions, we include investor-security as well as time fixed effects.[25]

Table 4 reports the results. We find no significant reinvestments in the dividend payer. Estimated net investments amount to -2% after a year. Coefficient estimates fluctuate insignificantly around zero with no systematic pattern. In Table D4 of the Internet Appendix, we separate estimates for the dividend payer being a stock or a fund. For either asset class, the

[25] We still scale all variables by beginning-of-month portfolio value. We exclude observations for which net investments in the individual position exceed 50% of beginning-of-month portfolio value or for which dividend data are missing in any of the months t to $t-11$ for the individual position. In Section C.1 of the Internet Appendix, we present equations for these regressions and test them on automatically reinvested dividends.

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results are similar and we detect no significant reinvestments in the dividend-paying position, consistent with Kaustia and Rantapuska (2012) and Hartzmark and Solomon (2019). Therefore, the large overall reinvestments in investors' portfolios seem to be in assets other than the dividend payer.

4 Passive changes in dividends

In this section, we address potential dynamic endogeneity concerns and establish the methodological robustness of our results by focusing on passive changes in investors' dividend income (i.e., changes that are due to changes in firms' payouts and not due to investors' trading). Moreover, we use dividend initiations to study how reinvestments are reflected in the numbers of purchases and sales.

4.1 Instrumented dividends

First, we re-estimate divided uses with the instrumental variables (IV) design developed by Di Maggio, Kermani, and Majlesi (2020). We aggregate variables on a yearly basis (from May to April) and run regressions in first differences. Thereby, we instrument differences in dividends by their passive component; that is, the difference in dividends from year t to year $t+1$ is instrumented by the hypothetical change in dividends from year t to year $t+1$, had the investor left his holdings unchanged from the beginning of year t through the end of year $t+1$.[26] Following Di Maggio, Kermani, and Majlesi (2020), we do not scale variables by portfolio value, as we do in our other analyses, but instead run regressions separately for different portfolio size groups to account for heterogeneity in portfolio values.[27]

The results are reported in Table 5. The bottom half group of portfolio sizes only has a median portfolio value of EUR 3,763. Since we require a minimum portfolio value of EUR 10,000 in our main analyses, estimates from this group are out-of-sample evidence relative

[26] First-stage results, reported in Table B4 of the Internet Appendix, indicate that passive changes in dividends are highly predictive of the actual changes in dividends.

[27] Similar to Di Maggio, Kermani, and Majlesi (2020), we exclude observations in which any of the (absolute) differences in dividend uses exceeds the 2.5% quantile of differences in net investments in each portfolio size group.

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to our other results. Within the bottom size group, the IV regressions produce insignificant estimates of 23% for dividends left as brokerage cash, 21% withdrawn from brokerage accounts, and -39% invested in CDs. We estimate that 60% of dividends are reinvested in securities within a year (marginal statistical significance). Next, within the group spanning the 50th to 70th percentile of portfolios, we find an annual reinvestment rate of 111%, which is statistically significant. Estimates for other dividend uses remain small and insignificant. Results for the group spanning the 70th to 90th percentile of portfolios are similar. Reinvestments in securities are estimated at 117%, which is statistically significant. Estimates for other dividend uses remain insignificant. Therefore, the IV regressions provide additional support for our finding that dividends are largely reinvested and rarely consumed in our dataset. Only in the top two groups, spanning the 90th to 95th and the 95th to 100th percentiles of portfolios, respectively, estimates are less conclusive and seem to be driven by noise. For example, in the top portfolio size group, 177% of dividends are estimated to remain as brokerage cash and an additional 84% and 55% to be reinvested in CDs and securities, respectively, while -97% are estimated to be withdrawn from brokerage accounts. Potential reasons for the noisy estimates in these groups might be that the cash flow size becomes less tractable and that the observation count drops considerably compared with other groups.

4.2 Dividend initiations

Next, as a special case of passive changes in dividend income, we focus on large payments from newly initiated dividends.[28] Such payments are a passive shock to investors' dividend income that serves as an optimal testing ground to i) examine the robustness of our results using an alternative methodological approach, ii) check if our results hold up for large dividends, and iii) explore our hypothesis that dividend reinvestment often occurs as an add-on to investors' usual trading activity. We classify a dividend as large and newly initiated if it is the first dividend paid by a security in at least two years and if the payment makes up at least 1% of an

[28] An alternative would be special dividends. Yet, there are very few large special dividends in our sample, which is why we focus on the more common dividend initiations.

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investor's beginning-of-month portfolio value.[29] To study the reinvestment of these dividends, we use a matched event study approach: For investor-months that receive large, newly initiated dividends (Treat == TRUE), we cumulate net investments, purchases, sales, as well as numbers of purchases and sales over the six-month period prior to the payment (Post == FALSE) and the six-month period following the payment (Post == TRUE).[30] This results in two observations (pre and post payment) for each payment of a large newly initiated dividend. Each pair of observations is matched with a pair of observations covering the same time period from a control group of investors that are not paid large newly initiated dividends (Treat == FALSE). The matching is based on the Mahalanobis (1936) distance in terms of dividends, net investments, purchases, sales, number of purchases, number of sales, and performance in the six-month pre-payment time frame.

On the one hand, we test if the increase in net investments from the pre-payment to the post-payment window is significantly larger in the treatment group than in the control group. This determines the estimate of dividend reinvestment. On the other hand, we test how this reinvestment comes about. To do so, we look at differences-in-differences with respect to purchases, sales, and the numbers of these. Do reinvestments go hand-in-hand with additional buy orders, are reinvestments added onto existing orders, or are they used as substitutes for sales? The results are illustrated in Figure 4 and complemented by regression estimates in Table 6. First, the top left panel of Figure 4 shows that the treatment and matching work. Recipients of newly initiated dividends receive dividends of similar magnitude as the control group in the pre-payment window but receive significantly larger payments in the post-payment window. Second, the top right panel shows that net investments increase one-for-one with dividends. The graphical output is underlined by a significant coefficient estimate of 96% in the corresponding regression of net investments on dividends. This finding supports that our

[29] Technically, this includes dividends that are not strictly newly initiated. The important point for us is that an investor did not receive a dividend by the respective security in the recent past. To make sure the initiation is a passive shock, we exclude investors that only first bought the security during the half year prior to initiation.

[30] We scale these variables with the portfolio value at the beginning of the respective six-month window and exclude observations where any of the cumulated dividend uses, purchases, or sales exceeds 100% of this portfolio value. We choose a six-month time frame to reduce the influence of noise and as our previous results indicate that most reinvestment takes place during the first six months after payment. In Table D5 of the Internet Appendix, we report the results of an analyses with a pre-payment time frame one year prior to payment. The results remain similar.

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results are robust to alternative methodological designs and confirms that also large dividends are reinvested.

Next, we test how this reinvestment comes about. First, the middle left panel of Figure 4 shows that there is a slight post-payment increase in purchases in the treatment group while there is a decrease in the control group. Simultaneously, the middle right panel shows a post-payment decrease in sales in the treatment group that is slightly larger than the decrease in the control group. The corresponding regressions of purchases and sales on dividends suggest that half of reinvestment comes from purchases and half from sales. Therefore, the results are in line with our previous estimates for the proportions in which reinvestment comes from increased purchases or reduced sales. Second, we test whether reinvestment is reflected in the *numbers* of purchases and sales. The bottom left panel shows that the post-payment increase in purchase numbers in the treatment group is only a little larger than in the control group. For sales numbers, there is virtually no difference. The regressions also detect no statistical differences for changes in trade numbers between the treatment group and the control group. Therefore, we conclude that reinvestment does mostly not stem from extra reinvestment-dedicated buy orders. Instead, reinvestment mostly occurs in the form of a changed order size for a trade that would have also occurred without the dividend payment.[31]

5 Subsample analyses

In this section, we test the robustness and generalizability of our results by focusing on specific subsets of investors and dividends.

5.1 High-yield investors

First, we investigate the dividend reinvestment and consumption behavior of investors who have a high average dividend yield. If such investors deliberately tilt their portfolios towards high-yield assets to finance consumption out of dividends, we should find large brokerage account

[31] To check that our methodology would have been able to detect additional trades if there were any, we apply our empirical design to automatically reinvested dividends in Table C4 of the Internet Appendix. We find that the methodology is able to detect the extra trade initiated by the automatic reinvestment plan.

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withdrawals shortly after payment among these investors. To test this, we repeat our main regressions within the subset of investors that have an average dividend yield above the 80th percentile of average dividend yields (2.6% per year). Table 7 presents the results. In the month of payment, we find an insignificant estimate of -4% for brokerage account withdrawals. Two months after payment, we find a significant estimate of 15%. For longer horizons, coefficient estimates are insignificant, yet mostly negative, such that total withdrawals sum to -7%. All in all, estimates do no not substantially differ from full-sample estimates with 81% of dividends still being reinvested in securities. On the one hand, our findings could be explained by investors having high-yield portfolios for reasons unrelated to consumption, for example because they believe that stocks with a high dividend yield deliver a higher performance. On the other hand, it could still be the case that investors with high-yield portfolios *plan* to consume dividends but do not stick to their plans as they default to letting dividends sit as cash in their brokerage accounts.

5.2 Retirees

Second, we investigate the dividend reinvestment and consumption behavior of retirees. As argued by Miller and Modigliani (1961) and supported empirically by Graham and Kumar (2006) and Daniel, Garlappi, and Xiao (2021), retirees may have a preference for dividend-paying assets as a means of creating a continuous consumption stream. However, Table 8 shows that brokerage account withdrawals of dividends by retirees in the month of payment are only 13% and of similar magnitude as contemporaneous reinvestments at 12%. In subsequent months, withdrawal estimates fluctuate around zero while reinvestment estimates are mostly positive, such that total withdrawals only grow to 15% while reinvestments in securities add up to 77% one year after dividend payment. Again, most reinvestment is attributable to dividends being used as substitutes for sales. An option that could therefore still be reconciled with our results is that retirees regularly sell parts of their holdings to generate a constant consumption stream and use dividends as substitutes for sales. While such investors would consume dividends

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mechanically, they would not consume dividends *economically* as their consumption streams remain unaffected by dividend payments.

5.3 Dividends paid by stocks versus funds

Third, we examine whether dividend uses depend on the dividend payer being a stock or a fund. We run the same regressions as in previous sections, substituting total dividends with dividends paid by stocks or funds, respectively.[32] Table 9 reports the results. Given that dividends paid by stocks make up the vast majority of dividends in our sample, estimates in Panel A are pretty similar to those for total dividends. In sum, a year after payment, 91% of dividends paid by stocks are reinvested in securities portfolios. Reinvestment rates are highest in the month of payment as well as four to six months thereafter, corresponding to the trading-intense fall months. Again, reinvestment mostly stems from sales reductions. Significant investments in CDs or significant brokerage account withdrawals are not detected and, a year after payment, 11% of dividends remain as brokerage cash.

The results for fund dividends are very different, although less precise, as there are much fewer fund dividends in our sample. As shown in Panel B, 25% of fund dividends are withdrawn from brokerage accounts a year after payment and only 20% and 14% are reinvested in securities and CDs, respectively. As a consequence of both low withdrawal and reinvestment rates, 37% of fund dividends still remain as cash in brokerage accounts a year after payment. These results can be explained by the generally lower investment activity of investors with a higher fund dividend yield. As can be seen in Table B3 of the Internet Appendix, fund dividend yield and investment activity are strongly negatively correlated in the cross-section of investors. Therefore, the results tell us less about the question whether a given investor would handle a dividend payment differently, depending on whether it is made by a stock or a fund, but more about cross-sectional differences between investors primarily investing in stocks versus funds.

[32] We still exclude automatically reinvested dividends.

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6 Survey evidence

To establish the external validity of our results and gain additional, independent data on dividend uses, we recruit 300 participants for an online survey via Prolific: 150 from Germany and 150 from the US. We require stock market investment experience and restrict our sample to investors with a brokerage account (which does not mean that their dividends have to be paid to brokerage cash balances). After application of these filters as well as an attention check, 293 respondents remain. The average age is 36 years (minimum 19 years, maximum 75 years) and 75% of participants are male. The survey was conducted between October 22 and October 29, 2022. Detailed survey questions and results are in Section E of the Internet Appendix.

6.1 Survey evidence on brokerage cash

The primary purpose of the survey is to find out how common brokerage cash is. We find that 71% of respondents have brokerage accounts that come with their own cash balance; 29% have their investment-related transactions settled via their checking account (or another bank account). These numbers are similar among German and US respondents (68% vs. 75% and 32% vs. 25%; differences statistically insignificant using Fisher's exact test). Thus, we find that the prevalent account structure in our brokerage dataset is faced similarly by a large share of retail investors.

An essential prerequisite for the validity of this finding is that the survey participants have the same understanding of brokerage cash as we do. To check this, we ask participants about the steps that they would need to take to pay for a TV using dividend proceeds. Of those respondents with brokerage cash, 97% would first transfer the dividend to another bank account before buying the TV. By contrast, of those respondents with directly linked checking accounts, only 45% would first transfer the dividend to another bank account before buying the TV (difference statistically significant at the 1% level using Fisher's exact test). The remainder would directly purchase the TV from the account that the dividend was paid out to. This means that we can be relatively confident that respondents who state that their accounts have

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brokerage cash indeed have brokerage cash as we define it. Additionally, this finding underlines that having a brokerage account with brokerage cash requires more effort to consume dividends.

We also want to understand why brokerage accounts differ with respect to having a brokerage cash balance or not. In our brokerage dataset, the standard account comes with a brokerage cash balance. Only clients who also have their checking account at our bank can directly link their checking account instead of having a brokerage cash balance. Does this generalize to clients of other brokers? In the survey, 80% of respondents who have their main bank account and their main brokerage account at different banks report to have a brokerage cash balance. By contrast, only 45% of respondents who have their accounts at the same bank report to have a brokerage cash balance (difference statistically significant at the 1% level using Fisher's exact test). Thus, it seems that having checking and brokerage accounts with the same bank is a determinant of many investors' brokerage account structure.

6.2 Survey evidence on dividends uses

Next, we want to know what survey respondents mainly did with the dividend payments they received in the past. We separate the question into two parts and ask participants what they mainly did with dividends in the short run (i.e., in the first week after payment) and what they mainly did with dividends in the long run (i.e., until today). In the first week after payment, 56% of respondents (who received dividends in the past) reinvested dividends, 40% did nothing and let dividends sit in the bank, and 3% spent them. Over the long run, these numbers evolve to 76% for reinvestment, 13% for doing nothing, and 11% for spending. The long-run proportions are very similar to our brokerage data estimates: By far the largest part of dividends is reinvested and relatively little is consumed. Yet, the proportions for the first week after payment are quite different from our brokerage data estimates. A lot fewer survey respondents report they have done nothing and a lot more respondents report they have quickly reinvested their dividends. A potential explanation might be selective memory as it is hard, if not impossible, to remember doing nothing. Therefore, it is plausible that the survey respondents' reports of past behavior are slightly biased towards active behavior and biased away

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from passive behavior. What escapes these concerns is that only a few investors report to have spent dividends, especially shortly after payment. If investors consciously consumed dividends, as mental accounting-based explanations generally postulate, investors would remember this. Therefore, the survey results provide evidence against widespread conscious consumption out of dividends.

Finally, we investigate whether there are differences in dividend uses between survey respondents with and without brokerage cash. The results are depicted in Figure 5. On the one hand, reinvestment rates are higher among respondents with brokerage cash than respondents without it (61% vs. 44% in the week following payment, difference statistically significant at the 5% level and 79% vs. 67% over the long run, difference statistically significant at the 10% level using Fisher's exact test). On the other hand, consumption rates are lower among respondents with than without brokerage cash (2% vs. 8% in the week following payment, difference statistically significant at the 5% level, and 9% vs. 15% over the long run, difference statistically insignificant using Fisher's exact test). These results are in line with our proposed mechanism and the results from our brokerage data analysis.

7 Conclusion

Previous studies suggest that retail investors have a strong preference for consuming dividends and thus rarely reinvest them. In this paper, we examine a German brokerage dataset from 2007 to 2011 and show quite the opposite: dividends are almost fully reinvested and rarely withdrawn from brokerage accounts. However, reinvestment does not take place immediately after payment. Initially, dividend proceeds remain parked as cash in investors' brokerage accounts. Delayed reinvestment then mostly occurs as an add-on to investors' usual trading activity.

We explain our findings with a mechanism that is based on default effects and depends on investors' account structure. We find high reinvestment rates when dividends are paid to brokerage cash balances and we find low reinvestment rates when dividends are paid to checking accounts. Using survey evidence from stock market investors in Germany and the US, we show

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that many investors' dividends are paid to brokerage cash balances (i.e., the setting for which we find high reinvestment rates). Our finding that brokerage cash serves as a buffer against a default to consuming investment proceeds provides an important insight to retail investors, financial institutions, and policymakers. Although, at first glance, it might seem convenient for investors to fully integrate all of their bank accounts, our results suggest that it could actually be helpful for investors to keep them separate in order to achieve a higher long-term savings rate and a higher stock market participation.

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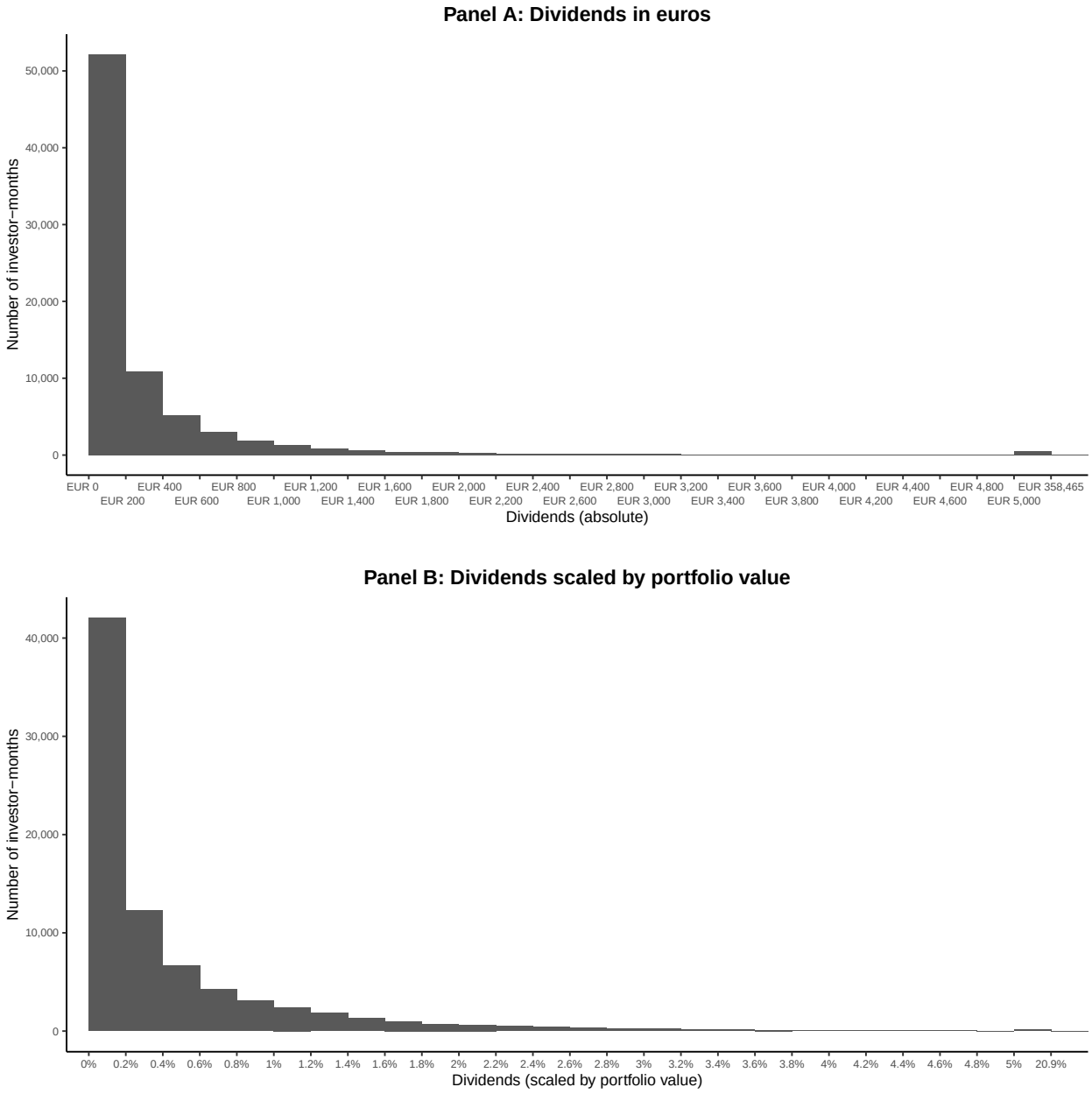
Figure 1: Histograms of dividend payment sizes



Note: This figure shows histograms of dividend payment sizes across investor-months with positive dividend payments. In Panel A, dividends are in absolute terms. In Panel B, dividends are scaled by portfolio value. Dividends eligible for automatic reinvestment plans are excluded.

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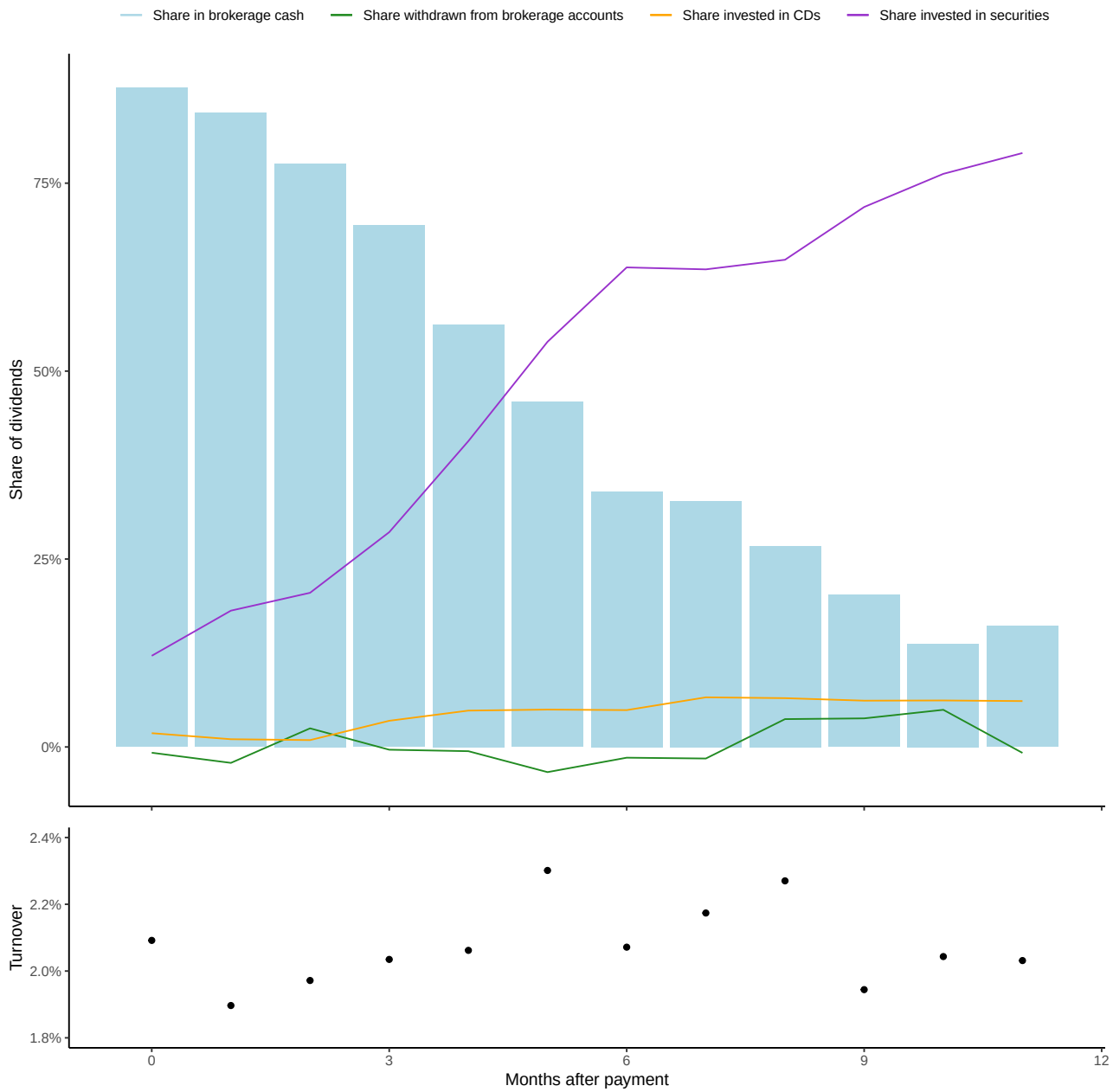
Figure 2: The way of the dividend



Note: In the top part, this figure shows the shares of dividends that have flown into the different possible uses of dividends until x months after payment. These shares are calculated by cumulating the regression coefficients from Table 2 until x months after payment. In the bottom part, this figure shows the average turnover x months after payment of a dividend. Dividends eligible for automatic reinvestment plans are excluded.

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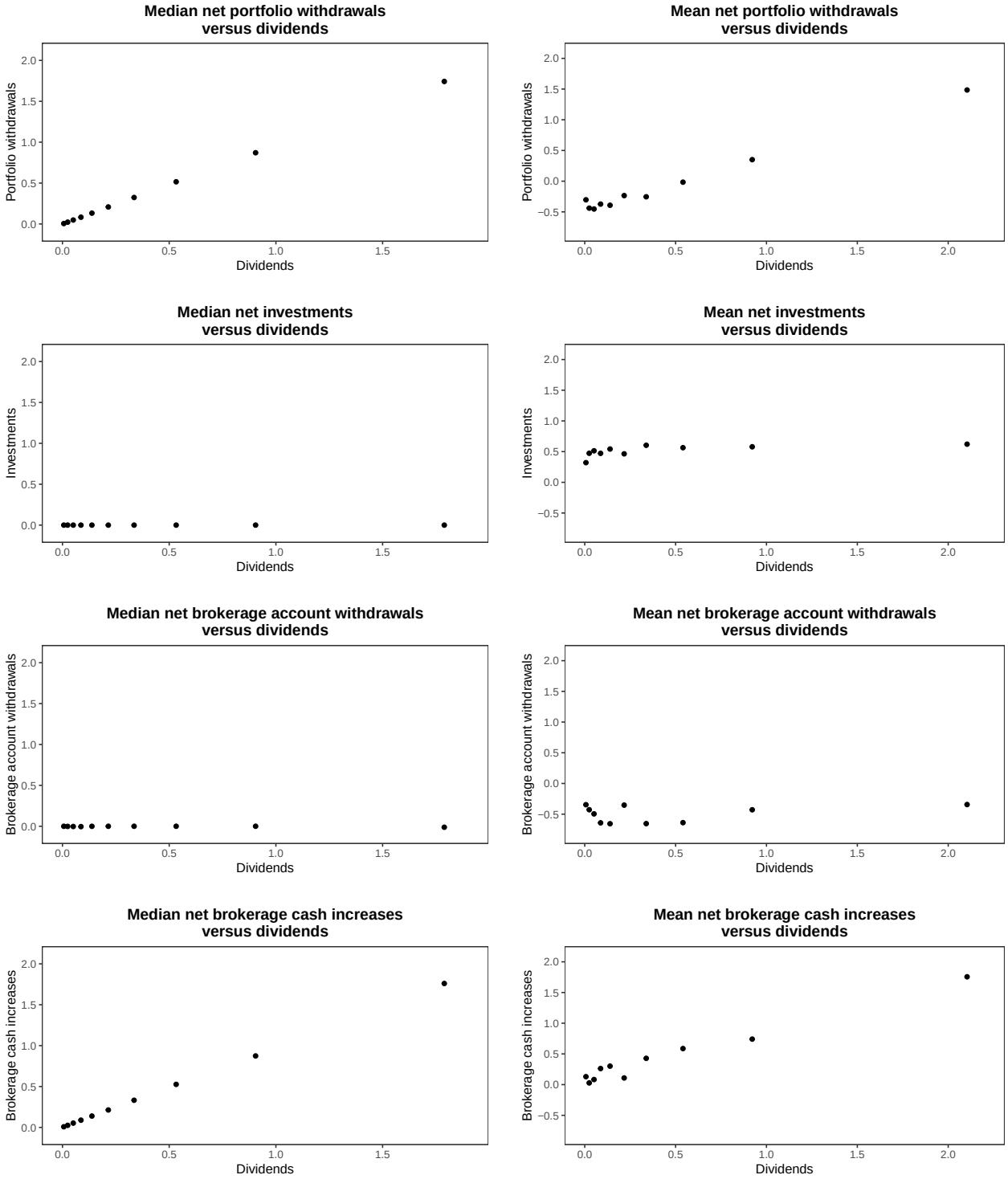
Figure 3: Portfolio withdrawals are not consumption



Note: For this figure, investor-months with positive dividend payments are sorted into deciles based on the amount of dividends received. The data points plotted represent median/mean values of net portfolio withdrawals/securities investments/brokerage account withdrawals/brokerage cash increases and dividends within each decile. Dividends eligible for automatic reinvestment plans are excluded. All variables are scaled by portfolio value and expressed in percentage points.

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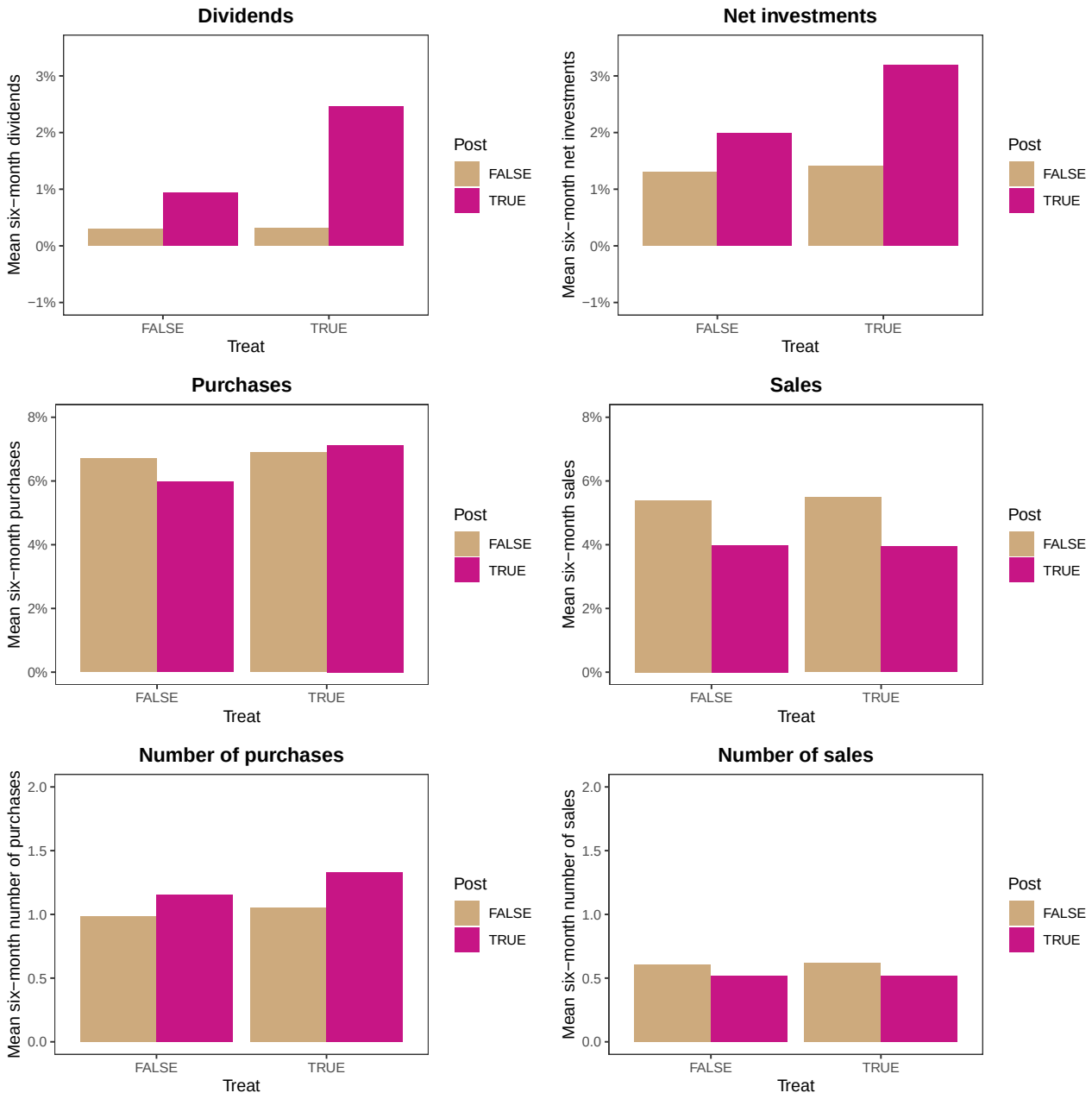
Figure 4: Dividend initiations



Note: Investor-months are identified in which payments of newly initiated dividends exceed 1% of portfolio value (Treat == TRUE). For such investor-months, dividends, net investments, etc. are cumulated over the six-month period prior to payment (Post == FALSE) and the six-month period following payment (Post == TRUE). Each pair of observations is matched with a pair of observations covering the same time period from a control group of investors that are not paid large newly initiated dividends (Treat == FALSE). The figure shows the mean of the respective variable in each group in each time frame. Dividends eligible for automatic reinvestment plans are excluded. For statistical tests, see Table 6.

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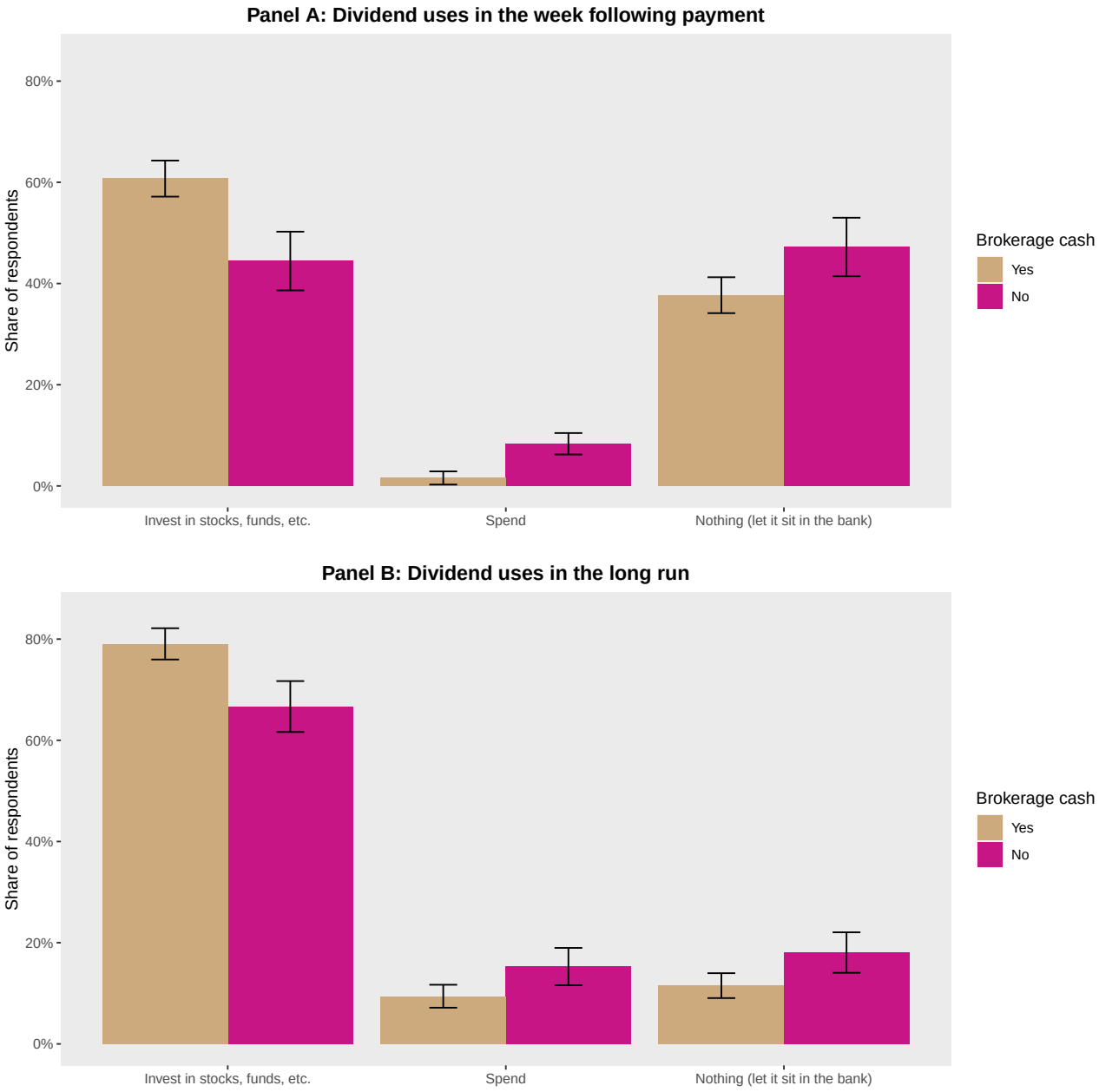
Figure 5: Survey evidence - dividend uses depending on account structure



Note: This figure shows mean responses from a survey among 293 stock market investors from Germany and the US. Participants were asked what they primarily did with their past dividends in the first week after payment and in the long run (i.e., until today). Respondents are grouped by having a brokerage account with or without a brokerage cash balance. Details about survey questions and results can be found in Section E of the Internet Appendix. Participants who answered that they have never received a dividend in the past are excluded. Standard error bars are calculated assuming a normal distribution of the mean.

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Table 1: Summary statistics

	Mean	SD	Min	P10	Median	P90	Max	N
A_{t-1} (in EUR 1,000)	72.06	167.34	10.00	16.58	38.37	143.63	13,415.94	278,771
CD_{t-1} (in EUR 1,000)	14.21	56.57	0.00	0.00	0.00	44.95	2,503.48	278,771
$Cash_{t-1}$ (in EUR 1,000)	26.79	76.08	-16.54	0.29	9.70	63.42	6,210.28	278,771
$A_{Stocks,t-1}/A_{t-1}$	47.10	41.21	0.00	0.00	43.37	100.00	100.00	278,771
$A_{Funds,t-1}/A_{t-1}$	51.25	41.26	0.00	0.00	53.93	100.00	100.00	278,771
$A_{Other,t-1}/A_{t-1}$	1.65	4.58	0.00	0.00	0.00	6.98	25.00	278,771
$CshInc_t$	0.32	9.01	-50.00	-4.98	0.00	5.99	49.98	278,771
$AccWd_t$	-0.61	7.83	-49.99	-5.01	0.00	2.15	49.99	278,771
$CdInv_t$	0.04	3.34	-49.97	0.00	0.00	0.00	49.98	278,771
Inv_t	0.47	5.30	-49.97	0.00	0.00	1.56	49.99	278,771
$Prch_t$	1.40	5.01	0.00	0.00	0.00	2.67	49.99	276,829
Sls_t	0.93	4.40	0.00	0.00	0.00	0.00	49.90	276,829
$PfWd_t$	-0.33	5.32	-49.99	-1.41	0.00	0.68	49.97	278,771
D_t	0.13	0.42	0.00	0.00	0.00	0.33	20.89	278,771
$D_{S,t}$	0.11	0.39	0.00	0.00	0.00	0.24	12.71	278,771
$D_{F,t}$	0.02	0.15	0.00	0.00	0.00	0.00	20.89	278,771
$D_{AR,t}$	0.02	0.16	0.00	0.00	0.00	0.00	4.76	278,771
I_t	0.06	0.54	-0.01	0.00	0.00	0.00	39.58	278,771

Note: All variables are on a monthly basis and in percentage points except where noted otherwise. Further summary statistics are in Table B2 of the Internet Appendix.

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Table 2: Uses of dividends

	Uses				Purchases and sales		P.withd.
	CshInc_t	AccWd_t	CdInv_t	Inv_t	Prch_t	Sls_t	PfWd_t
D_t	0.88***	-0.01	0.02	0.12**	0.05	-0.06***	0.88***
	(0.07)	(0.04)	(0.01)	(0.05)	(0.04)	(0.02)	(0.05)
D_{t-1}	-0.03	-0.01	-0.01	0.06**	0.01	-0.04**	-0.06*
	(0.04)	(0.04)	(0.01)	(0.03)	(0.03)	(0.02)	(0.03)
D_{t-2}	-0.07	0.05	0.00	0.02	-0.03	-0.03	-0.02
	(0.05)	(0.04)	(0.01)	(0.03)	(0.03)	(0.02)	(0.03)
D_{t-3}	-0.08	-0.03	0.03	0.08	0.05	-0.03	-0.08
	(0.07)	(0.04)	(0.02)	(0.07)	(0.07)	(0.02)	(0.07)
D_{t-4}	-0.13**	0.00	0.01	0.12**	0.06*	-0.06**	-0.12**
	(0.06)	(0.04)	(0.01)	(0.05)	(0.04)	(0.02)	(0.05)
D_{t-5}	-0.10	-0.03	0.00	0.13*	0.09	-0.02	-0.13*
	(0.07)	(0.04)	(0.02)	(0.07)	(0.07)	(0.02)	(0.07)
D_{t-6}	-0.12**	0.02	0.00	0.10*	0.06	-0.02	-0.10*
	(0.04)	(0.04)	(0.02)	(0.05)	(0.04)	(0.02)	(0.05)
D_{t-7}	-0.01	0.00	0.02	0.00	-0.04	-0.04	-0.01
	(0.07)	(0.08)	(0.02)	(0.05)	(0.04)	(0.03)	(0.05)
D_{t-8}	-0.06	0.05	0.00	0.01	-0.04	-0.03	-0.01
	(0.06)	(0.05)	(0.01)	(0.04)	(0.03)	(0.02)	(0.04)
D_{t-9}	-0.06	0.00	0.00	0.07**	0.02	-0.04**	-0.07**
	(0.04)	(0.03)	(0.02)	(0.03)	(0.03)	(0.02)	(0.03)
D_{t-10}	-0.07	0.01	0.00	0.04	0.02	-0.01	-0.05*
	(0.06)	(0.06)	(0.01)	(0.03)	(0.03)	(0.02)	(0.03)
D_{t-11}	0.02	-0.06	0.00	0.03	0.01	-0.02	-0.03
	(0.03)	(0.04)	(0.01)	(0.03)	(0.02)	(0.02)	(0.03)
Sum	0.16	-0.01	0.06	0.79	0.28	-0.40	0.21

Note: This table shows the results of regressions of the different dividend uses on contemporaneous and lagged dividends. Each cell corresponds to the results of one regression. For the results in the first row, the different uses are regressed on contemporaneous dividends. For the results in all other rows, the different uses are regressed on contemporaneous dividends and one lag of dividends, which is indicated by row name. In these rows, only the coefficient for the lag is reported. Dividends eligible for automatic reinvestment plans are excluded. CshInc stands for net brokerage cash increases, AccWd for net brokerage account withdrawals, CdInv for net CD investments, Inv for net securities investments, Prch for securities purchases, Sls for securities sales, and PfWd for net portfolio withdrawals. All regressions include investor and time fixed effects. Standard errors are clustered by investor and time period and are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. For all regressions, N = 278,771, except for regressions of purchases and sales, where N = 276,829.

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Table 3: Uses of dividends paid to checking accounts

	Uses				Purchases and sales		P.withd.
	$CshInc_t$	$AccWd_t$	$CdInv_t$	Inv_t	$Prch_t$	Sls_t	$PfWd_t$
$Check_t$*D_t	-0.96***	1.22***	-0.03*	-0.21*	-0.36*	-0.16	0.20*
	(0.16)	(0.23)	(0.02)	(0.12)	(0.20)	(0.12)	(0.12)
$Check_{t-1}$*D_{t-1}	0.21**	0.13*	-0.03	-0.28*	-0.41*	-0.14	0.28*
	(0.08)	(0.08)	(0.02)	(0.14)	(0.23)	(0.12)	(0.14)
$Check_{t-2}$*D_{t-2}	0.21**	-0.08	-0.06	-0.04	-0.39	-0.37	0.05
	(0.10)	(0.13)	(0.03)	(0.13)	(0.32)	(0.25)	(0.13)
$Check_{t-3}$*D_{t-3}	0.21**	-0.06	-0.10**	-0.03	0.16	0.20	0.02
	(0.10)	(0.25)	(0.04)	(0.24)	(0.15)	(0.16)	(0.24)
$Check_{t-4}$*D_{t-4}	0.71	-0.53	-0.01	-0.14	0.14	0.29	0.14
	(0.61)	(0.68)	(0.03)	(0.23)	(0.14)	(0.20)	(0.24)
$Check_{t-5}$*D_{t-5}	-0.03	0.11	0.04	-0.11	-0.03	0.07*	0.10
	(0.16)	(0.51)	(0.03)	(0.44)	(0.42)	(0.04)	(0.44)
$Check_{t-6}$*D_{t-6}	0.09	0.06	0.06**	-0.20	0.63	0.80	0.20
	(0.08)	(0.91)	(0.02)	(0.87)	(0.40)	(0.82)	(0.87)
$Check_{t-7}$*D_{t-7}	-0.12	0.32	0.01	-0.43	-0.43*	0.00	0.43
	(0.11)	(0.32)	(0.03)	(0.30)	(0.23)	(0.27)	(0.30)
$Check_{t-8}$*D_{t-8}	-0.05	-0.17	0.03	0.06	-0.04	-0.13	-0.07
	(0.11)	(0.24)	(0.02)	(0.22)	(0.31)	(0.21)	(0.21)
$Check_{t-9}$*D_{t-9}	-0.13	0.16	0.02	-0.04	0.02	0.04	0.03
	(0.21)	(0.22)	(0.02)	(0.16)	(0.21)	(0.10)	(0.16)
$Check_{t-10}$*D_{t-10}	-0.28	0.10	-0.01	0.24	0.12	-0.12	-0.21
	(0.21)	(0.45)	(0.03)	(0.37)	(0.19)	(0.19)	(0.37)
$Check_{t-11}$*D_{t-11}	-0.20*	-0.13	-0.02	0.35	0.28	-0.07	-0.35
	(0.12)	(0.47)	(0.02)	(0.42)	(0.37)	(0.16)	(0.42)
Sum	-0.32	1.13	-0.09	-0.83	-0.31	0.42	0.82

Note: This table shows the results of regressions of the different dividend uses on contemporaneous dividends, the specified lag of dividends, and interactions of these dividends with linked checking account dummies. Only the results for the interactions are reported. Linked checking account dummies are dummy variables that are one iff an investor uses his checking account for settling investment-related transactions such as receving dividends. Dividends eligible for automatic reinvestment plans are excluded. CshInc stands for net brokerage cash increases, AccWd for net brokerage account withdrawals, CdInv for net CD investments, Inv for net securities investments, Prch for securities purchases, Sls for securities sales, and PfWd for net portfolio withdrawals. All regressions include investor and time fixed effects. Standard errors are clustered by investor and time period and are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. For all regressions, N = 278,771, except for regressions of purchases and sales, where N = 276,829.

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Table 4: Reinvestment in the dividend payer

	$\text{Inv}_{j,t}$	$\text{Prch}_{j,t}$	$\text{Sls}_{j,t}$
$\text{D}_{j,t}$	0.02	0.02	0.00
	(0.02)	(0.01)	(0.01)
$\text{D}_{j,t-1}$	-0.02	-0.02	0.00
	(0.02)	(0.01)	(0.01)
$\text{D}_{j,t-2}$	-0.03	-0.03*	0.01
	(0.02)	(0.02)	(0.01)
$\text{D}_{j,t-3}$	-0.01	0.00	0.01
	(0.02)	(0.02)	(0.01)
$\text{D}_{j,t-4}$	0.01	0.00	-0.01
	(0.02)	(0.02)	(0.01)
$\text{D}_{j,t-5}$	0.00	0.02	0.01
	(0.04)	(0.03)	(0.01)
$\text{D}_{j,t-6}$	0.03	0.02	-0.01
	(0.02)	(0.03)	(0.01)
$\text{D}_{j,t-7}$	0.00	-0.01	0.00
	(0.02)	(0.02)	(0.01)
$\text{D}_{j,t-8}$	0.01	0.01	-0.01
	(0.01)	(0.01)	(0.01)
$\text{D}_{j,t-9}$	0.00	-0.01	-0.01
	(0.01)	(0.01)	(0.01)
$\text{D}_{j,t-10}$	0.00	0.01	0.01
	(0.02)	(0.01)	(0.01)
$\text{D}_{j,t-11}$	-0.03*	-0.01	0.01
	(0.02)	(0.01)	(0.01)
Sum	-0.02	-0.01	0.01

Note: This table shows the results of regressions of investments in a position on dividends paid by that position. Each cell corresponds to the results of one regression. For the results in the first row, net investments/purchases/sales in/of a position are regressed on its contemporaneous dividends. For all other rows, net investments/purchases/sales in/of a position are regressed on its contemporaneous dividends and one lag of dividends, which is indicated by row name. In these rows, only the coefficient for the lag is reported. Positions eligible for automatic reinvestment plans are excluded. All regressions include investor-security and time fixed effects. Standard errors are clustered by investor-security, investor, and time period and are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. N = 1,341,124.

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Table 5: Instrumented dividends

Portfolio size group	0-50	50-70	70-90	90-95	95-100
Panel A: Dep. var. is the difference in net brokerage cash increases					
Difference in dividends	0.23	0.28	0.70	0.70	1.77***
	(0.75)	(0.65)	(0.53)	(1.00)	(0.35)
Panel B: Dep. var. is the difference in net brokerage account withdrawals					
Difference in dividends	0.21	-0.40	-0.39	-0.82	-0.97**
	(0.59)	(0.52)	(0.53)	(1.04)	(0.46)
Panel C: Dep. var. is the difference in net investments in CDs					
Difference in dividends	-0.39	-0.09	0.42	1.42*	0.84***
	(0.40)	(0.49)	(0.41)	(0.74)	(0.32)
Panel D: Dep. var. is the difference in net investments in securities					
Difference in dividends	0.60*	1.11**	1.17***	0.16	0.55
	(0.33)	(0.52)	(0.43)	(0.98)	(0.44)
Median portfolio value (in EUR)	3,763	12,173	27,692	66,757	135,544
Filter level (in EUR)	13,889	23,477	44,445	78,018	144,753
N	19,017	8,085	8,618	2,218	2,194

Note: This table shows the results of regressions of year-on-year differences in dividend uses on year-on-year differences in dividends. The differences in dividends are instrumented by their passive component; that is, the difference in dividends from year t to year $t+1$ is instrumented by the hypothetical change in dividends from year t to year $t+1$, had the investor left his holdings unchanged from the beginning of year t through the end of year $t+1$. Observations are grouped by investors' first observed (non-account opening) portfolio value. The median portfolio value in each group is reported. Filter level indicates the threshold according to which observations are excluded if any of the (absolute) differences in uses in an investor-year exceed it. Filter level is chosen for each portfolio size group as the absolute value of the 2.5% quantile of differences in net investments. All regressions include lagged portfolio value, first differences in capital gains, and year fixed effects as controls. Dividends eligible for automatic reinvestment plans are excluded. All variables are in euros and not scaled by portfolio value. Standard errors are clustered by investor and are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

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Table 6: Dividend initiations

	Inv	Prch	Sls	Num Prch	Num Sls
Intercept	1.01**	6.23***	5.21***	0.99***	0.61***
	(0.47)	(0.52)	(0.45)	(0.11)	(0.06)
Divs	0.96***	0.45	-0.51*		
	(0.34)	(0.31)	(0.28)		
Post				0.16*	-0.09
				(0.09)	(0.06)
Treat				0.07	0.01
				(0.17)	(0.09)
Post*Treat				0.11	-0.01
				(0.18)	(0.09)

Note: Investor-months are identified in which payments of newly initiated dividends exceed 1% of portfolio value (Treat == TRUE). For such investor-months, dividends, net investments, etc. are cumulated over the six-month period prior to payment (Post == FALSE) and the six-month period following payment (Post == TRUE). Each pair of observations is matched with a pair of observations covering the same time period from a control group of investors that are not paid large newly initiated dividends (Treat == FALSE). The table shows the results of regressions of cumulated net investments, purchases, etc. on cumulated dividends and dummy variables according to the classification as Post and Treat. Dividends eligible for automatic reinvestment plans are excluded. Net investments, purchases, sales, and dividends are in percentage points. Standard errors are clustered by investor and are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. N = 1,584.

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Table 7: Uses of dividends by high dividend yield investors

	Uses				Purchases and sales		P.withd.
	$CshInc_t$	$AccWd_t$	$CdInv_t$	Inv_t	$Prch_t$	Sls_t	$PfWd_t$
D_t	0.95***	-0.04	0.01	0.08*	0.07*	-0.03	0.92***
	(0.07)	(0.05)	(0.02)	(0.04)	(0.04)	(0.03)	(0.04)
D_{t-1}	-0.09	0.08	-0.04*	0.04	0.03	-0.03	-0.04
	(0.07)	(0.05)	(0.02)	(0.04)	(0.03)	(0.03)	(0.04)
D_{t-2}	-0.18***	0.15***	-0.01	0.03	0.01	0.01	-0.03
	(0.07)	(0.05)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)
D_{t-3}	-0.06	-0.01	0.01	0.06	0.02	-0.04	-0.06
	(0.07)	(0.05)	(0.02)	(0.04)	(0.05)	(0.04)	(0.04)
D_{t-4}	-0.10	-0.07	0.00	0.17***	0.08**	-0.08***	-0.17***
	(0.08)	(0.07)	(0.02)	(0.03)	(0.04)	(0.02)	(0.03)
D_{t-5}	-0.08	-0.01	0.00	0.08**	0.01	-0.04	-0.08**
	(0.07)	(0.05)	(0.02)	(0.04)	(0.03)	(0.03)	(0.04)
D_{t-6}	0.00	-0.07	0.00	0.07*	0.02	-0.04	-0.07*
	(0.06)	(0.05)	(0.03)	(0.04)	(0.04)	(0.03)	(0.04)
D_{t-7}	-0.07	0.01	0.05	0.03	0.02	-0.02	-0.03
	(0.07)	(0.08)	(0.03)	(0.05)	(0.06)	(0.02)	(0.05)
D_{t-8}	0.00	-0.02	0.01	0.01	-0.01	-0.02	-0.01
	(0.07)	(0.05)	(0.02)	(0.04)	(0.02)	(0.03)	(0.04)
D_{t-9}	-0.01	-0.09	0.01	0.08**	0.04	-0.04*	-0.08**
	(0.07)	(0.05)	(0.02)	(0.04)	(0.03)	(0.02)	(0.04)
D_{t-10}	-0.09*	0.03	0.00	0.07	0.04	-0.02	-0.07
	(0.05)	(0.05)	(0.02)	(0.04)	(0.03)	(0.03)	(0.04)
D_{t-11}	-0.03	-0.04	-0.01	0.09*	0.07*	-0.01	-0.09*
	(0.06)	(0.04)	(0.01)	(0.04)	(0.04)	(0.03)	(0.04)
Sum	0.25	-0.07	0.03	0.81	0.37	-0.36	0.19

Note: This table shows the results of regressions of the different dividend uses on contemporaneous and lagged dividends for high-yield investors. Each cell corresponds to the results of one regression. For the results in the first row, the different uses are regressed on contemporaneous dividends. For the results in all other rows, the different uses are regressed on contemporaneous dividends and one lag of dividends, which is indicated by row name. In these rows, only the coefficient for the lag is reported. Dividends eligible for automatic reinvestment plans are excluded. Only investors with an average annual dividend yield above the 80th percentile of average dividend yields (i.e., 2.6% per year) are included. CshInc stands for net brokerage cash increases, AccWd for net brokerage account withdrawals, CdInv for net CD investments, Inv for net securities investments, Prch for securities purchases, Sls for securities sales, and PfWd for net portfolio withdrawals. All regressions include investor and time fixed effects. Standard errors are clustered by investor and time period and are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. For all regressions, N = 57,057, except for regressions of purchases and sales, where N = 56,468.

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Table 8: Uses of dividends by retirees

	Uses				Purchases and sales		P.withd.
	$CshInc_t$	$AccWd_t$	$CdInv_t$	Inv_t	$Prch_t$	Sls_t	$PfWd_t$
D_t	0.73***	0.13*	0.01	0.12	0.09	-0.05	0.88***
	(0.09)	(0.07)	(0.03)	(0.08)	(0.05)	(0.04)	(0.08)
D_{t-1}	-0.09	0.09	-0.02	0.03	-0.03	-0.02	-0.02
	(0.10)	(0.08)	(0.05)	(0.06)	(0.04)	(0.04)	(0.06)
D_{t-2}	-0.16*	0.08	0.03	0.05	-0.04	-0.03	-0.05
	(0.08)	(0.08)	(0.04)	(0.05)	(0.03)	(0.04)	(0.04)
D_{t-3}	-0.02	-0.03	0.04	-0.01	-0.03	-0.06	0.00
	(0.09)	(0.08)	(0.06)	(0.06)	(0.05)	(0.04)	(0.06)
D_{t-4}	-0.18	0.03	0.01	0.13**	0.04	-0.06*	-0.13**
	(0.12)	(0.09)	(0.04)	(0.06)	(0.05)	(0.04)	(0.06)
D_{t-5}	0.01	-0.03	0.00	0.03	0.07	0.01	-0.02
	(0.10)	(0.08)	(0.02)	(0.09)	(0.06)	(0.04)	(0.09)
D_{t-6}	0.01	-0.07	-0.07	0.13	0.08	-0.03	-0.12
	(0.11)	(0.06)	(0.04)	(0.09)	(0.09)	(0.04)	(0.09)
D_{t-7}	-0.03	-0.06	0.17**	-0.05	-0.07	-0.01	0.04
	(0.11)	(0.07)	(0.07)	(0.09)	(0.05)	(0.07)	(0.08)
D_{t-8}	-0.01	0.06	-0.01	-0.02	-0.02	-0.03	0.02
	(0.13)	(0.08)	(0.03)	(0.06)	(0.05)	(0.03)	(0.06)
D_{t-9}	-0.06	-0.10	-0.02	0.17***	0.11*	-0.06	-0.17***
	(0.11)	(0.09)	(0.04)	(0.06)	(0.06)	(0.04)	(0.06)
D_{t-10}	-0.16	0.00	0.01	0.13*	0.08	-0.03	-0.15**
	(0.12)	(0.09)	(0.03)	(0.08)	(0.05)	(0.04)	(0.07)
D_{t-11}	-0.15*	0.04	0.02	0.06	0.02	-0.03	-0.07
	(0.09)	(0.08)	(0.02)	(0.06)	(0.05)	(0.03)	(0.06)
Sum	-0.10	0.15	0.18	0.77	0.27	-0.40	0.22

Note: This table shows the results of regressions of the different dividend uses on contemporaneous and lagged dividends for retirees. Each cell corresponds to the results of one regression. For the results in the first row, the different uses are regressed on contemporaneous dividends. For the results in all other rows, the different uses are regressed on contemporaneous dividends and one lag of dividends, which is indicated by row name. In these rows, only the coefficient for the lag is reported. Dividends eligible for automatic reinvestment plans are excluded. Only investors whose occupational status is listed as retired are included. CshInc stands for net brokerage cash increases, AccWd for net brokerage account withdrawals, CdInv for net CD investments, Inv for net securities investments, Prch for securities purchases, Sls for securities sales, and PfWd for net portfolio withdrawals. All regressions include investor and time fixed effects. Standard errors are clustered by investor and time period and are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. For all regressions, N = 41,039, except for regressions of purchases and sales, where N = 40,716.

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Table 9: Uses of dividends from stocks and funds

	Uses				Purchases and sales		P.withd.
	$CshInc_t$	$AccWd_t$	$CdInv_t$	Inv_t	$Prch_t$	Sls_t	$PfWd_t$
Panel A: Dividends paid by stocks							
$D_{S,t}$	0.87***	-0.02	0.02	0.14**	0.06	-0.07***	0.87***
	(0.08)	(0.05)	(0.01)	(0.06)	(0.05)	(0.02)	(0.06)
$D_{S,t-1}$	-0.03	-0.04	-0.01	0.09**	0.03	-0.05**	-0.08**
	(0.05)	(0.04)	(0.01)	(0.03)	(0.03)	(0.02)	(0.03)
$D_{S,t-2}$	-0.07	0.04	0.00	0.03	-0.05	-0.04	-0.03
	(0.05)	(0.03)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)
$D_{S,t-3}$	-0.11	-0.01	0.02	0.09	0.05	-0.04	-0.09
	(0.08)	(0.04)	(0.02)	(0.08)	(0.08)	(0.03)	(0.08)
$D_{S,t-4}$	-0.14**	0.00	0.02	0.13**	0.07*	-0.06*	-0.12**
	(0.06)	(0.04)	(0.01)	(0.05)	(0.04)	(0.03)	(0.05)
$D_{S,t-5}$	-0.11	-0.03	0.01	0.14*	0.10	-0.02	-0.13
	(0.07)	(0.05)	(0.02)	(0.08)	(0.08)	(0.02)	(0.08)
$D_{S,t-6}$	-0.17***	0.03	0.01	0.12**	0.08	-0.02	-0.12**
	(0.04)	(0.04)	(0.02)	(0.06)	(0.05)	(0.02)	(0.06)
$D_{S,t-7}$	0.02	-0.04	0.00	0.02	-0.03	-0.06*	-0.03
	(0.08)	(0.08)	(0.02)	(0.06)	(0.05)	(0.03)	(0.06)
$D_{S,t-8}$	-0.04	0.04	0.00	0.01	-0.05	-0.04	-0.01
	(0.07)	(0.05)	(0.01)	(0.05)	(0.03)	(0.03)	(0.04)
$D_{S,t-9}$	-0.07	0.02	-0.02	0.07**	0.02	-0.05**	-0.07**
	(0.04)	(0.04)	(0.02)	(0.03)	(0.04)	(0.02)	(0.03)
$D_{S,t-10}$	-0.06	0.00	0.00	0.05	0.01	-0.03	-0.07**
	(0.07)	(0.06)	(0.01)	(0.03)	(0.03)	(0.02)	(0.03)
$D_{S,t-11}$	0.02	-0.05	0.00	0.02	0.01	-0.01	-0.03
	(0.04)	(0.04)	(0.01)	(0.03)	(0.02)	(0.02)	(0.03)
Sum	0.11	-0.06	0.04	0.91	0.30	-0.48	0.09
Panel B: Dividends paid by funds							
$D_{F,t}$	0.93***	0.04	0.03	0.02	0.00	-0.04	0.99***
	(0.11)	(0.12)	(0.03)	(0.06)	(0.05)	(0.03)	(0.06)
$D_{F,t-1}$	-0.05	0.12	0.01	-0.07	-0.08	0.00	0.07
	(0.12)	(0.11)	(0.03)	(0.08)	(0.08)	(0.03)	(0.08)
$D_{F,t-2}$	-0.11	0.07	0.01	0.01	0.04	0.04	-0.03
	(0.20)	(0.16)	(0.04)	(0.06)	(0.04)	(0.04)	(0.06)
$D_{F,t-3}$	0.05	-0.14*	0.04	0.04	0.03	0.01	-0.04
	(0.10)	(0.08)	(0.04)	(0.05)	(0.04)	(0.04)	(0.05)
$D_{F,t-4}$	-0.06	-0.02	-0.01	0.08	0.02	-0.05	-0.08*
	(0.11)	(0.12)	(0.04)	(0.05)	(0.04)	(0.03)	(0.05)
$D_{F,t-5}$	-0.06	-0.04	-0.02	0.08	0.06	-0.02	-0.09
	(0.13)	(0.08)	(0.03)	(0.07)	(0.07)	(0.03)	(0.07)
$D_{F,t-6}$	0.06	-0.04	-0.04	-0.01	-0.02	-0.01	-0.02
	(0.09)	(0.08)	(0.04)	(0.04)	(0.04)	(0.03)	(0.05)
$D_{F,t-7}$	-0.18	0.19*	0.10	-0.11***	-0.05	0.06*	0.12***
	(0.12)	(0.10)	(0.07)	(0.04)	(0.03)	(0.03)	(0.04)
$D_{F,t-8}$	-0.14	0.12	0.00	0.04	0.01	-0.02	-0.02
	(0.10)	(0.09)	(0.03)	(0.04)	(0.03)	(0.02)	(0.04)
$D_{F,t-9}$	-0.04	-0.08	0.06	0.06	0.05	-0.02	-0.07
	(0.12)	(0.10)	(0.04)	(0.05)	(0.04)	(0.04)	(0.05)
$D_{F,t-10}$	-0.10	0.11	-0.01	0.01	0.09**	0.10*	-0.03
	(0.13)	(0.10)	(0.03)	(0.07)	(0.04)	(0.05)	(0.07)
$D_{F,t-11}$	0.07	-0.08	-0.02	0.05	-0.01	-0.05	-0.04
	(0.09)	(0.10)	(0.03)	(0.05)	(0.06)	(0.04)	(0.05)
Sum	0.37	0.25	0.14	0.20	0.15	-0.01	0.76

Note: This table shows the results of regressions of the different dividend uses on contemporaneous and lagged dividends paid by stocks and funds, respectively. Each cell corresponds to the results of one regression. For the results in the first row of each panel, the different uses are regressed on contemporaneous dividends. For the results in all other rows, the different uses are regressed on contemporaneous dividends and one lag of dividends, which is indicated by row name. In these rows, only the coefficient for the lag is reported. Dividends eligible for automatic reinvestment plans are excluded. CshInc stands for net brokerage cash increases, AccWd for net brokerage account withdrawals, CdInv for net CD investments, Inv for net securities investments, Prch for securities purchases, Sls for securities sales, and PfWd for net portfolio withdrawals. All regressions include investor and time fixed effects. Standard errors are clustered by investor and time period and are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. For all regressions, N = 278,771, except for regressions of purchases and sales, where N = 276,829.

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Internet Appendix

Section A: Tax considerations

Section B: Variable descriptions, extended summary statistics, and basic relationships

Section C: Methodology checks using automatically reinvested dividends

Section D: Robustness checks

Section E: Survey questions and results

Section F: Brokerage cash examples and an overview

Section G: Uses of interest payments on brokerage cash

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A Tax considerations

We focus on withholding tax regulations as these determine the dividend and interest amounts upon payment. Before 2009, dividends paid by German companies are subject to a withholding tax of 21.1%. Dividends paid by foreign companies are not subject to this withholding tax but to foreign withholding taxes that are often of the same order of magnitude as Germany's. Thus, and because German dividends dominate our sample, we do not discriminate between German and foreign dividends and apply a uniform tax rate of 21.1% to all dividends paid before 2009. Also, before 2009, interest payments are taxed at 31.65% and capital gains are tax-exempt.

After 2009, all dividends paid to German investors, regardless of the paying company's country of residence, are subject to a withholding tax of 26.375%. Foreign dividends are additionally subject to local withholding taxes, which are often offset against the German withholding tax depending on the corresponding double tax treaty. For simplicity, we apply a uniform rate of 26.375% after 2009. This rate is also applicable to interest payments and realized capital gains of assets purchased after 2009. We ignore church taxes as they are not regularly withheld by banks prior to 2015.

Investors receive a yearly allowance for tax-free dividends, interest payments and, after 2009, capital gains. Before 2009, this allowance can take on a maximum of EUR 750 per year for individuals and EUR 1,500 per year for married investors. After 2009, these numbers are raised to EUR 801 and EUR 1,602, respectively. To use this allowance, an investor has to tell his bank how much of the allowance he would like to use at that bank. As our data do not contain explicit information on allowances used, we have to make an assumption regarding their use. Based on the net amounts of dividends and interest payments that we observe arriving on investors' accounts, we assume that investors allocate half of their allowance to the brokerage accounts in our sample.

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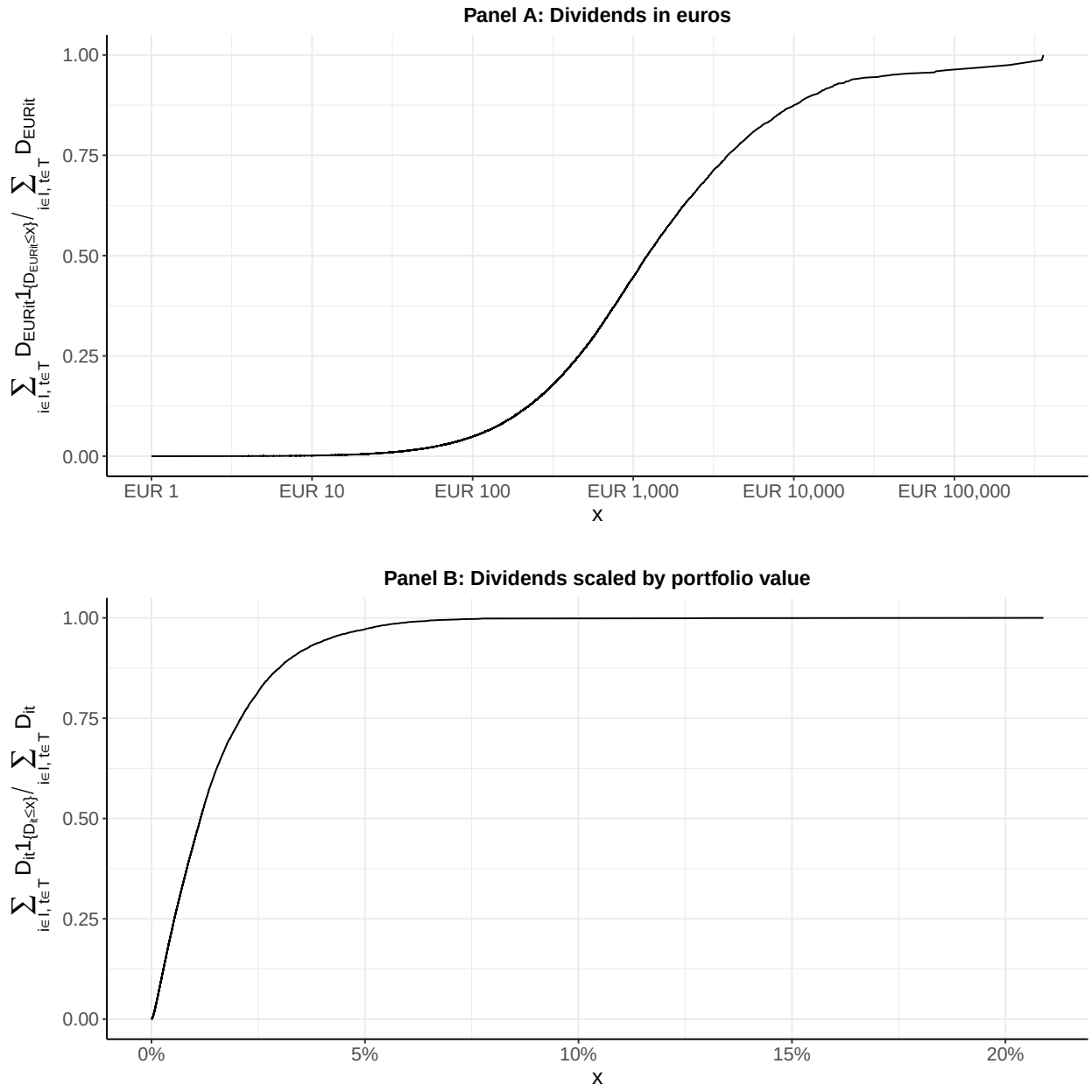
B Variable descriptions, extended summary statistics, and basic relationships

Figure B1: Cumulative distributions of dividend payment sizes



Note: This figure shows the share of dividends that are accounted for by investor-months in which dividends are smaller than or equal to a certain level x. In Panel A, dividends are in absolute terms. In Panel B, dividends are scaled by portfolio value. The x-axis of Panel A is scaled logarithmically. Dividends eligible for automatic reinvestment plans are excluded.

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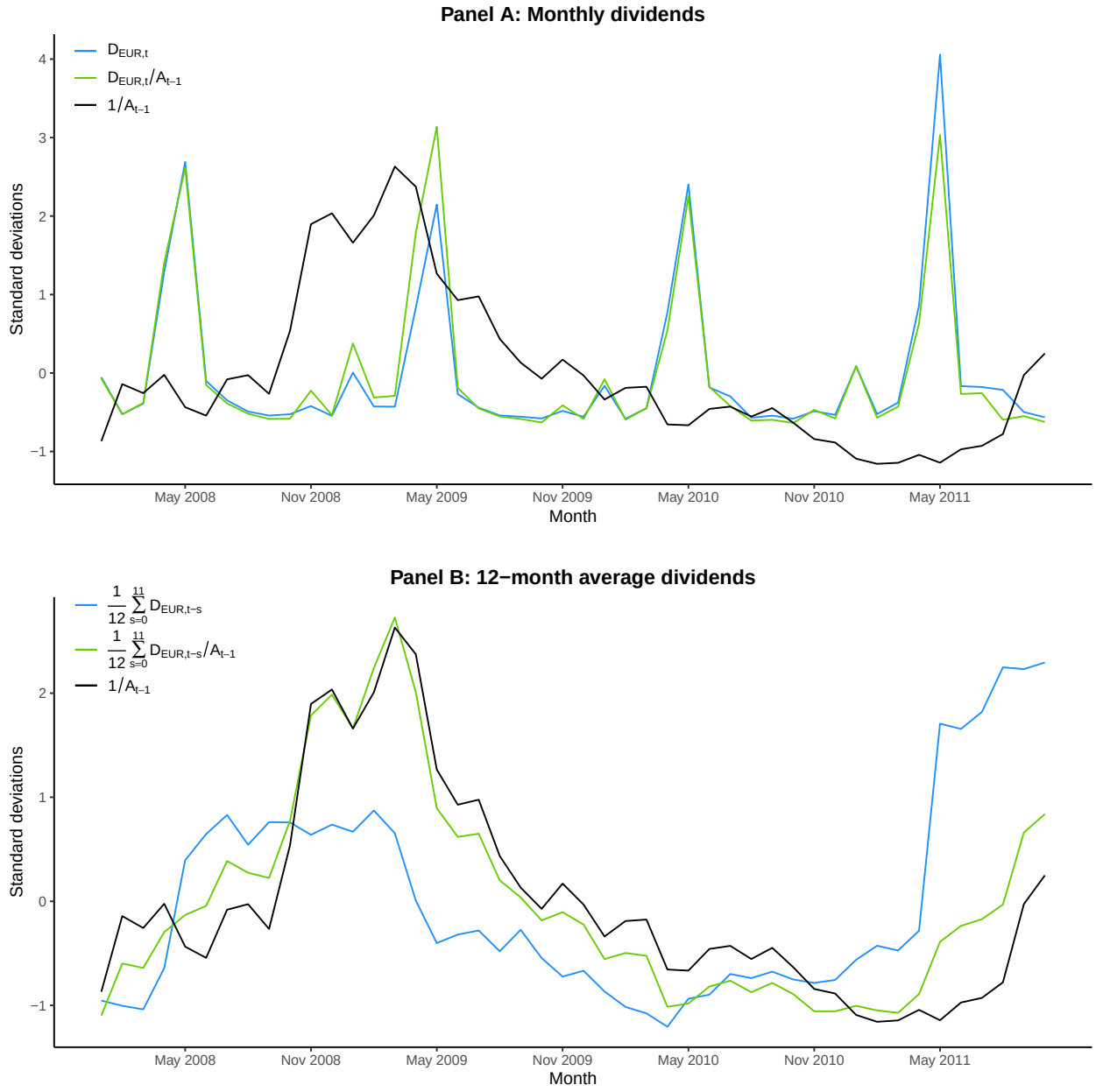
Figure B2: Time variation in dividends, scaled dividends, and portfolio value



Note: This figure shows cross-sectional averages of dividends, dividends scaled by portfolio value, and one over portfolio value over time. In Panel A, dividends are on a monthly basis. In Panel B, dividends are averaged over twelve months. For this figure, all variables are standardized. Dividends eligible for automatic reinvestment plans are excluded.

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Table B1: Variable descriptions

Variable	Description
	Panel A: Balances
A_t	EUR value of an investor's security portfolio in month t.
$A_{k,t}$	EUR value of a subset k of an investor's assets in month t.
CD_t	EUR value of an investor's certificates of deposit in month t.
$Cash_t$	EUR value of an investor's brokerage cash balance in month t.
$NO_{k,t}$	Number of positions in subset k of an investor's holdings in month t.
	Panel B: Sources and uses of funds
$CshInc_t$	EUR value of net increases of an investor's brokerage cash in month t divided by the EUR value of the investor's security portfolio in month t-1.
$AccWd_t$	EUR value of net withdrawals from an investor's brokerage account in month t divided by the EUR value of the investor's security portfolio in month t-1.
$CdInv_t$	EUR value of net investments into certificates of deposit in month t divided by the EUR value of the investor's security portfolio in month t-1.
Inv_t	EUR value of net investments in the investor's security portfolio in month t divided by the EUR value of the investor's security portfolio in month t-1.
$Prch_t$	EUR value of an investor's security purchases in month t divided by the EUR value of the investor's security portfolio in month t-1.
Sls_t	EUR value of an investor's security sales in month t divided by the EUR value of the investor's security portfolio in month t-1.
$PfWd_t$	EUR value of net withdrawals from an investor's security portfolio in month t divided by the EUR value of the investor's security portfolio in month t-1.
$Inv_{j,t}$	EUR value of an investor's net investments in position j in month t divided by the EUR value of the investor's security portfolio in month t-1.
$Prch_{j,t}$	EUR value of an investor's purchases of position j in month t divided by the EUR value of the investor's security portfolio in month t-1.
$Sls_{j,t}$	EUR value of an investor's sales of position j in month t divided by the EUR value of the investor's security portfolio in month t-1.
Num $Prch_t$	Number of purchases by an investor in month t.
Num Sls_t	Number of sales by an investor in month t.
	Panel C: Dividends and interest
$D_{EUR,t}$	EUR value of dividends received by an investor in month t. Dividends eligible for automatic reinvestment are excluded.
D_t	EUR value of dividends received by an investor in month t divided by the EUR value of the investor's security portfolio in month t-1. Dividends eligible for automatic reinvestment are excluded.
$D_{S,t}$	EUR value of dividends paid by stocks to an investor in month t divided by the EUR value of the investor's security portfolio in month t-1. Dividends eligible for automatic reinvestment are excluded.
$D_{F,t}$	EUR value of fund dividends received by an investor in month t divided by the EUR value of the investor's security portfolio in month t-1. Dividends eligible for automatic reinvestment are excluded.
$D_{AR,t}$	EUR value of fund dividends eligible for automatic reinvestment received by an investor in month t divided by the EUR value of the investor's security portfolio in month t-1.
$D_{j,t}$	EUR value of dividends paid by a single position j to an investor in month t divided by the EUR value of the investor's security portfolio in month t-1.
I_t	EUR value of interest paid on an investor's brokerage cash balance in month t divided by the EUR value of the investor's security portfolio in month t-1.

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Table B1: Variable descriptions *(continued)*

Variable	Description
Panel D: Demographics and account characteristics	
Check_t	Dummy that is one iff an investor does not have a brokerage cash balance and instead has his checking account linked to his brokerage account in month t.
Age	Age of the primary accountholder as of December 2007.
Sex	Variable indicating whether an account belongs to a male, female, or more than one person.
Married	Dummy that is one iff an investor is married.
Profession	Occupational status.
Financially inexperienced	Dummy that is one iff an investor reports not to be financially experienced.
Account tenure	The time difference between an investor's account opening and the end of our sample period, October 2011.
Mean turnover	Average of an investor's average Prch_t and Sls_t.

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Table B2: Extended summary statistics

	Mean	SD	Min	P10	Median	P90	Max	N
Panel A: Full sample								
Investor-month level								
A_{t-1} (in EUR 1,000)	72.06	167.34	10.00	16.58	38.37	143.63	13,415.94	278,771
CD_{t-1} (in EUR 1,000)	14.21	56.57	0.00	0.00	0.00	44.95	2,503.48	278,771
$Cash_{t-1}$ (in EUR 1,000)	26.79	76.08	-16.54	0.29	9.70	63.42	6,210.28	278,771
$A_{Stocks,t-1}/A_{t-1}$	47.10	41.21	0.00	0.00	43.37	100.00	100.00	278,771
$A_{Funds,t-1}/A_{t-1}$	51.25	41.26	0.00	0.00	53.93	100.00	100.00	278,771
$A_{Other,t-1}/A_{t-1}$	1.65	4.58	0.00	0.00	0.00	6.98	25.00	278,771
$NO_{Assets,t-1}$	10.97	10.51	1.00	2.00	8.00	22.00	189.00	278,771
$NO_{Stocks,t-1}$	6.59	9.34	0.00	0.00	4.00	16.00	167.00	278,771
$NO_{Funds,t-1}$	3.96	4.76	0.00	0.00	3.00	10.00	84.00	278,771
$NO_{Other,t-1}$	0.43	1.16	0.00	0.00	0.00	1.00	31.00	278,771
Num $Prch_t$	0.57	1.53	0.00	0.00	0.00	2.00	56.00	278,771
Num Sls_t	0.18	0.84	0.00	0.00	0.00	0.00	57.00	278,771
$CshInc_t$	0.32	9.01	-50.00	-4.98	0.00	5.99	49.98	278,771
$AccWd_t$	-0.61	7.83	-49.99	-5.01	0.00	2.15	49.99	278,771
$CdInv_t$	0.04	3.34	-49.97	0.00	0.00	0.00	49.98	278,771
Inv_t	0.47	5.30	-49.97	0.00	0.00	1.56	49.99	278,771
$Prch_t$	1.40	5.01	0.00	0.00	0.00	2.67	49.99	276,829
Sls_t	0.93	4.40	0.00	0.00	0.00	0.00	49.90	276,829
$PfWd_t$	-0.33	5.32	-49.99	-1.41	0.00	0.68	49.97	278,771
D_t	0.13	0.42	0.00	0.00	0.00	0.33	20.89	278,771
$D_{S,t}$	0.11	0.39	0.00	0.00	0.00	0.24	12.71	278,771
$D_{F,t}$	0.02	0.15	0.00	0.00	0.00	0.00	20.89	278,771
$D_{AR,t}$	0.02	0.16	0.00	0.00	0.00	0.00	4.76	278,771
I_t	0.06	0.54	-0.01	0.00	0.00	0.00	39.58	278,771
Investor level								
Age (in years)	54.27	14.76	1.00	37.00	54.00	73.00	99.00	8,439
Sex: Shared account	28.64	45.21	0.00	0.00	0.00	100.00	100.00	8,439
Sex: Male	50.80	50.00	0.00	0.00	100.00	100.00	100.00	8,439
Sex: Female	20.56	40.42	0.00	0.00	0.00	100.00	100.00	8,439
Married	62.76	48.35	0.00	0.00	100.00	100.00	100.00	8,439
Profession: White collar	44.87	49.74	0.00	0.00	0.00	100.00	100.00	8,439
Profession: Blue collar	4.09	19.80	0.00	0.00	0.00	0.00	100.00	8,439
Profession: Civil servant	8.78	28.30	0.00	0.00	0.00	0.00	100.00	8,439
Profession: Homemaker	2.25	14.84	0.00	0.00	0.00	0.00	100.00	8,439
Profession: Retiree	14.67	35.38	0.00	0.00	0.00	100.00	100.00	8,439
Profession: Unknown	25.33	43.50	0.00	0.00	0.00	100.00	100.00	8,439
Financially inexperienced	7.18	25.82	0.00	0.00	0.00	0.00	100.00	8,439
Account Tenure (in years)	6.62	3.15	0.17	2.83	6.17	11.58	16.83	8,439
Mean A_t (in EUR 1,000)	72.06	164.38	10.15	17.37	38.52	142.91	7,243.17	8,439
Mean $Cash_t/(Cash_t+A_t)$	25.90	21.13	0.00	3.09	20.54	57.79	95.93	8,439
Mean $PfWd_t$	-0.38	2.37	-44.90	-1.90	0.00	0.72	41.30	8,439
Mean $CshInc_t$	0.29	3.17	-44.90	-1.68	0.06	2.71	45.69	8,439
Mean $AccWd_t$	-0.65	2.86	-45.69	-3.22	-0.29	1.46	37.81	8,439
Mean $CdInv_t$	0.05	1.04	-27.82	-0.08	0.00	0.31	44.27	8,439
Mean Inv_t	0.53	2.37	-41.30	-0.56	0.10	2.03	44.90	8,439
Mean $Prch_t$	2.63	9.26	0.00	0.00	0.56	5.33	257.24	8,439
Mean Sls_t	2.10	9.04	0.00	0.00	0.14	4.13	256.13	8,439
Mean turnover	2.37	9.07	0.00	0.00	0.49	4.72	256.32	8,439
Mean D_t	0.12	0.13	0.00	0.00	0.10	0.27	3.22	8,439

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Table B2: Extended summary statistics *(continued)*

	Mean	SD	Min	P10	Median	P90	Max	N
Panel B: Investors with directly linked checking accounts								
Investor-month level								
A_{t-1} (in EUR 1,000)	51.13	34.71	10.36	15.86	42.82	106.00	167.11	761
CD_{t-1} (in EUR 1,000)	0.91	3.53	0.00	0.00	0.00	0.00	25.00	761
$Cash_{t-1}$ (in EUR 1,000)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	761
$A_{Stocks,t-1}/A_{t-1}$	57.48	39.39	0.00	0.00	66.76	100.00	100.00	761
$A_{Funds,t-1}/A_{t-1}$	42.29	39.30	0.00	0.00	32.93	100.00	100.00	761
$A_{Other,t-1}/A_{t-1}$	0.23	1.17	0.00	0.00	0.00	0.00	12.84	761
$NO_{Assets,t-1}$	9.30	6.75	1.00	2.00	7.00	19.00	27.00	761
$NO_{Stocks,t-1}$	7.16	6.47	0.00	0.00	5.00	17.00	23.00	761
$NO_{Funds,t-1}$	1.86	1.94	0.00	0.00	1.00	5.00	14.00	761
$NO_{Other,t-1}$	0.27	0.60	0.00	0.00	0.00	1.00	3.00	761
Num $Prch_t$	0.55	0.92	0.00	0.00	0.00	2.00	4.00	761
Num Sls_t	0.08	0.36	0.00	0.00	0.00	0.00	5.00	761
$CshInc_t$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	761
$AccWd_t$	-0.47	4.48	-43.36	-1.29	0.00	0.68	33.78	761
$CdInv_t$	0.01	0.15	0.00	0.00	0.00	0.00	2.33	761
Inv_t	0.61	4.45	-33.78	0.00	0.00	1.34	43.50	761
$Prch_t$	1.32	4.68	0.00	0.00	0.00	1.97	43.96	759
Sls_t	0.73	3.95	0.00	0.00	0.00	0.00	43.57	759
$PfWd_t$	-0.45	4.47	-43.36	-1.25	0.00	0.68	33.78	761
D_t	0.14	0.45	0.00	0.00	0.00	0.31	3.80	761
$D_{S,t}$	0.12	0.40	0.00	0.00	0.00	0.27	3.80	761
$D_{F,t}$	0.02	0.21	0.00	0.00	0.00	0.00	3.16	761
$D_{AR,t}$	0.02	0.14	0.00	0.00	0.00	0.00	1.55	761
I_t	0.00	0.00	0.00	0.00	0.00	0.00	0.00	761
Investor level								
Age (in years)	53.06	14.42	29.00	34.50	54.50	69.40	88.00	34
Sex: Shared account	32.35	47.49	0.00	0.00	0.00	100.00	100.00	34
Sex: Male	41.18	49.96	0.00	0.00	0.00	100.00	100.00	34
Sex: Female	26.47	44.78	0.00	0.00	0.00	100.00	100.00	34
Married	76.47	43.06	0.00	0.00	100.00	100.00	100.00	34
Profession: White collar	52.94	50.66	0.00	0.00	100.00	100.00	100.00	34
Profession: Blue collar	5.88	23.88	0.00	0.00	0.00	0.00	100.00	34
Profession: Civil servant	5.88	23.88	0.00	0.00	0.00	0.00	100.00	34
Profession: Homemaker	2.94	17.15	0.00	0.00	0.00	0.00	100.00	34
Profession: Retiree	11.76	32.70	0.00	0.00	0.00	70.00	100.00	34
Profession: Unknown	20.59	41.04	0.00	0.00	0.00	100.00	100.00	34
Financially inexperienced	8.82	28.79	0.00	0.00	0.00	0.00	100.00	34
Account Tenure (in years)	6.46	4.62	0.92	1.36	5.38	12.18	15.25	34
Mean A_t (in EUR 1,000)	42.62	32.01	10.59	13.75	32.34	84.96	136.24	34
Mean $Cash_t/(Cash_t+A_t)$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34
Mean $PfWd_t$	-0.35	0.80	-2.83	-1.09	-0.04	0.34	0.45	34
Mean $CshInc_t$	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34
Mean $AccWd_t$	-0.36	0.80	-2.83	-1.09	-0.04	0.34	0.45	34
Mean $CdInv_t$	0.01	0.03	0.00	0.00	0.00	0.00	0.18	34
Mean Inv_t	0.50	0.78	-0.26	-0.02	0.16	1.19	2.96	34
Mean $Prch_t$	1.27	3.21	0.00	0.00	0.22	2.34	18.32	34
Mean Sls_t	0.77	2.72	0.00	0.00	0.00	1.16	15.48	34
Mean turnover	1.02	2.95	0.00	0.00	0.20	1.89	16.90	34
Mean D_t	0.13	0.13	0.00	0.00	0.11	0.33	0.45	34

Note: All variables are on a monthly basis and in percentage points except where noted otherwise. Panel A includes all investors. Panel B includes only investors who use their checking accounts for settling investment-related transactions, such as receiving dividends.

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Table B3: Cross-sectional relationships with investors' average dividend yield

	Uses				Purchases and sales		P.withd.
	Mean CshInc_t	Mean AccWd_t	Mean CdInv_t	Mean Inv_t	Mean Prch_t	Mean Sls_t	Mean PfWd_t
Intercept	0.29***	-0.82***	0.02	0.58***	2.96***	2.38***	-0.58***
	(0.05)	(0.05)	(0.02)	(0.04)	(0.16)	(0.15)	(0.04)
$\text{D}_{S,t}$	-0.19	1.03***	0.09	0.05	0.88	0.83	0.95***
	(0.29)	(0.26)	(0.10)	(0.22)	(0.86)	(0.84)	(0.22)
$\text{D}_{F,t}$	-0.84	2.23***	0.69***	-1.09**	-8.10***	-7.01***	2.09***
	(0.62)	(0.56)	(0.21)	(0.47)	(1.81)	(1.77)	(0.47)
$\text{D}_{AR,t}$	1.86**	0.81	0.52**	-2.12***	-14.55***	-12.43***	3.12***
	(0.79)	(0.71)	(0.26)	(0.59)	(2.29)	(2.23)	(0.59)

Note: This table shows the results of regressions of investors' average monthly brokerage cash increases, brokerage account withdrawals, etc. on their average monthly dividend yield from stocks, (non-automatically reinvesting) funds, and automatically reinvesting funds. CshInc stands for net brokerage cash increases, AccWd for net brokerage account withdrawals, CdInv for net CD investments, Inv for net securities investments, Prch for securities purchases, Sls for securities sales, and PfWd for net portfolio withdrawals. All variables are in percentage points. Standard errors are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. N = 8,439.

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Table B4: First stage for instrumented dividends

	Dependent variable is actual changes in dividends				
Portfolio size group	0-50	50-70	70-90	90-95	95-100
Passive changes in dividends	0.84***	0.88***	0.80***	0.81***	1.00***
	(0.03)	(0.02)	(0.03)	(0.03)	(0.05)
R^2	0.47	0.55	0.57	0.56	0.68
N	19,017	8,085	8,618	2,218	2,194

Note: This table reports the results of the first stage of the IV regressions in Table 5. Actual changes in dividends are regressed on passive changes in dividends (and controls). The passive change in dividends from year t to year $t+1$ is calculated as the hypothetical change in dividends, had the investor left his holdings unchanged from the beginning of year t through the end of year $t+1$. Observations are grouped by investors' first observed (non-account opening) portfolio value. All regressions include lagged portfolio value, first differences in capital gains, and year fixed effects as controls. Dividends eligible for automatic reinvestment plans are excluded. All variables are in euros and not scaled by portfolio value. Standard errors are clustered by investor and are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

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C Methodology checks using automatically reinvested dividends

C.1 Reinvestment in the dividend payer

Our equation for regressing, for example, net investments in a position, $Inv_{i,j,t}$, on contemporaneous dividends paid by that position, $D_{i,j,t}$, including investor-security and time fixed effects, $\alpha_{i,j}$ and α_t, is:[33]

$$Inv_{i,j,t} = \beta_0 D_{i,j,t} + \alpha_{i,j} + \alpha_t + e_{i,j,t}. \tag{C.1}$$

Like on the investor-month level, we estimate the coefficients for different lags of dividends in different regressions. For a given lag $s \in \{1, 2, ..., 11\}$, our regression equation, for example, with net investments in a position as the dependent variable, is:

$$Inv_{i,j,t} = \beta_0 D_{i,j,t} + \beta_s D_{i,j,t-s} + \alpha_{i,j} + \alpha_t + e_{i,j,t}. \tag{C.2}$$

As before, we test our methodology using automatically reinvested dividends. By construction, automatic reinvestment plans reinvest dividends back into the dividend-paying position. Thus, we expect estimates for reinvestments of automatically reinvested dividends in the dividend payer to be similar to estimates for reinvestments of such dividends in the portfolio. Table C2 reports the results. Estimates suggest that 64% of automatically reinvested dividends are reinvested in the dividend-paying fund in the month of payment and 14% one month thereafter. The breakdown of net investments into purchases and sales confirms that these numbers are driven by increased purchases as is expected for automatic reinvestment plans. The estimates of 64% and 14% are very close to the estimates of 63% and 18% for portfolio reinvestments of automatically reinvested dividends reported in Table C1. This similarity gives us confidence that our methodological choices produce accurate results, both on the investor-month and on the investor-security-month level.

In Table C2, net investment coefficient estimates for lags beyond lag one are generally negative, albeit mostly small and only sometimes statistically significant. Looking at the breakdown

[33] Investor-security fixed effects would be necessary to avoid biased estimates if it were, for example, the case that investors generally invest more in non-dividend paying positions than in dividend-paying positions. Regardless of that, unreported results with investor instead of investor-security fixed effects do not differ substantially.

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into purchases and sales, the negative coefficients stem from negative purchase estimates. We believe the reason for these negative estimates to lie in our omission of the first lag of dividends, $D_{i,j,t-1}$, from the regressions that produce the estimates for longer lags of dividends, $D_{i,j,t-s}, s \in \{2, ..., 11\}$. Because the first lag of dividends is associated with positive net investments via increased purchases and because the different lags are mechanically negatively correlated with one another, an omitted variable bias is produced when omitting the first lag of dividends. As trading activity is lower on the investor-security-month level than on the investor-month level, this bias plays a greater role on the investor-security-month level. Thus, we add the first lag of dividends, $D_{i,j,t-1}$, to all the regressions and give the results in Table C3. If we do that, the negative coefficients for longer lags tend to shrink, in line with our omitted variable bias explanation. Nonetheless, this issue is far less of a problem outside of our automatic reinvestment test case as investors do not reinvest as concentrated as machines in the first two months after the dividend payment. For consistency, we thus stick with Equation (C.2) including only contemporaneous dividends alongside each lag of dividends.

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Table C1: Methodology check - main regression design

	Uses				Purchases and sales		P.withd.
	CshInc_t	AccWd_t	CdInv_t	Inv_t	Prch_t	Sls_t	PfWd_t
Panel A: Fixed effects regression results							
$\text{D}_{AR,t}$	0.33**	0.05	0.04	0.63***	0.58***	-0.05	0.41***
	(0.12)	(0.09)	(0.03)	(0.09)	(0.12)	(0.04)	(0.10)
$\text{D}_{AR,t-1}$	-0.12	-0.12	0.04	0.18**	0.18	0.00	-0.22**
	(0.14)	(0.10)	(0.04)	(0.09)	(0.11)	(0.04)	(0.10)
$\text{D}_{AR,t-2}$	0.03	-0.15	0.05	0.00	-0.01	-0.01	-0.07
	(0.13)	(0.12)	(0.06)	(0.05)	(0.04)	(0.03)	(0.07)
$\text{D}_{AR,t-3}$	-0.12	0.09	0.02	0.03	0.10*	0.06	0.00
	(0.10)	(0.11)	(0.04)	(0.05)	(0.06)	(0.04)	(0.06)
$\text{D}_{AR,t-4}$	-0.07	-0.05	0.04	0.09**	0.06	-0.02	-0.08*
	(0.08)	(0.09)	(0.03)	(0.04)	(0.04)	(0.03)	(0.04)
$\text{D}_{AR,t-5}$	-0.17	0.15	-0.03	0.00	-0.01	0.00	-0.05
	(0.13)	(0.11)	(0.06)	(0.05)	(0.07)	(0.04)	(0.06)
$\text{D}_{AR,t-6}$	0.12	-0.19*	0.04	0.04	0.04	0.00	-0.03
	(0.10)	(0.10)	(0.04)	(0.04)	(0.05)	(0.04)	(0.04)
$\text{D}_{AR,t-7}$	0.16	-0.11	0.00	0.01	-0.05	-0.06**	0.03
	(0.10)	(0.10)	(0.02)	(0.07)	(0.08)	(0.03)	(0.08)
$\text{D}_{AR,t-8}$	0.12	-0.12	0.02	-0.01	-0.06	-0.04	0.02
	(0.12)	(0.09)	(0.05)	(0.05)	(0.04)	(0.03)	(0.06)
$\text{D}_{AR,t-9}$	0.18**	-0.18	-0.06	0.02	-0.04	-0.06**	-0.06
	(0.08)	(0.12)	(0.04)	(0.07)	(0.07)	(0.03)	(0.08)
$\text{D}_{AR,t-10}$	-0.28**	0.33***	0.00	-0.05	-0.04	0.00	0.06
	(0.12)	(0.10)	(0.02)	(0.05)	(0.05)	(0.04)	(0.05)
$\text{D}_{AR,t-11}$	0.04	0.01	-0.04	0.01	-0.04	-0.04	0.02
	(0.11)	(0.09)	(0.04)	(0.06)	(0.07)	(0.04)	(0.06)
Sum	0.23	-0.28	0.11	0.96	0.70	-0.22	0.04
Panel B: Pooled regression results							
$\text{D}_{AR,t}$	0.37***	0.03	0.05	0.56***	0.09	-0.48***	0.37***
	(0.13)	(0.10)	(0.05)	(0.10)	(0.09)	(0.06)	(0.10)
$\frac{1}{11}\sum_{s=1}^{11} D_{AR,t-s}$	1.34**	-0.95**	0.16	-1.18***	-6.12***	-4.95***	0.44
	(0.53)	(0.46)	(0.15)	(0.33)	(0.43)	(0.31)	(0.39)

Note: This table shows the results of regressions of the different dividend uses on contemporaneous and lagged dividends that are eligible for automatic reinvestment plans. In Panel A, each cell corresponds to the results of one regression. For the results in the first row, the different uses are regressed on contemporaneous dividends. For the results in all other rows, the different uses are regressed on contemporaneous dividends and one lag of dividends, which is indicated by row name. In these rows, only the coefficient for the lag is reported. Regressions include investor and time fixed effects. For the results in Panel B, the different uses are regressed on contemporaneous dividends and the average of 11 lags of dividends in pooled models without investor and time fixed effects. CshInc stands for net brokerage cash increases, AccWd for net brokerage account withdrawals, CdInv for net CD investments, Inv for net securities investments, Prch for securities purchases, Sls for securities sales, and PfWd for net portfolio withdrawals. Standard errors are clustered by investor and time period and are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. For all regressions, N = 278,771, except for regressions of purchases and sales, where N = 276,829.

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Table C2: Methodology check - reinvestment in the dividend payer

	$\text{Inv}_{j,t}$	$\text{Prch}_{j,t}$	$\text{Sls}_{j,t}$
$\text{D}_{j,t}$	0.64***	0.61***	-0.03**
	(0.09)	(0.10)	(0.01)
$\text{D}_{j,t-1}$	0.14	0.16*	0.02
	(0.09)	(0.09)	(0.02)
$\text{D}_{j,t-2}$	-0.01	0.00	0.01
	(0.03)	(0.02)	(0.01)
$\text{D}_{j,t-3}$	-0.02	-0.02*	0.01
	(0.02)	(0.01)	(0.02)
$\text{D}_{j,t-4}$	0.02	0.00	-0.02**
	(0.03)	(0.02)	(0.01)
$\text{D}_{j,t-5}$	-0.02	-0.01	0.01
	(0.02)	(0.01)	(0.02)
$\text{D}_{j,t-6}$	-0.02	-0.01	0.00
	(0.02)	(0.01)	(0.02)
$\text{D}_{j,t-7}$	-0.02	-0.02*	0.00
	(0.01)	(0.01)	(0.01)
$\text{D}_{j,t-8}$	0.01	-0.02**	-0.04***
	(0.01)	(0.01)	(0.01)
$\text{D}_{j,t-9}$	-0.02	-0.03**	-0.01
	(0.02)	(0.01)	(0.01)
$\text{D}_{j,t-10}$	-0.06*	-0.03**	0.03
	(0.03)	(0.01)	(0.03)
$\text{D}_{j,t-11}$	-0.06	-0.08	-0.02
	(0.06)	(0.05)	(0.01)
Sum	0.57	0.54	-0.04

Note: This table shows the results of regressions of investments in a position on dividends paid by that position. Only positions eligible for automatic reinvestment plans are included. Each cell corresponds to the results of one regression. For the results in the first row, net investments/purchases/sales in/of a position are regressed on its contemporaneous dividends. For the results in all other rows, net investments/purchases/sales in/of a position are regressed on its contemporaneous dividends and one lag of dividends, which is indicated by row name. In these rows, only the coefficient for the lag is reported. All regressions include investor-security and time fixed effects. Standard errors are clustered by investor-security, investor, and time period and are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. N = 291,456.

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Table C3: Methodology check - reinvestment in the dividend payer, alternative specification

	$\text{Inv}_{j,t}$	$\text{Prch}_{j,t}$	$\text{Sls}_{j,t}$
$\text{D}_{j,t}$	0.65***	0.62***	-0.03*
	(0.09)	(0.10)	(0.01)
$\text{D}_{j,t-1}$	0.14	0.16*	0.02
	(0.09)	(0.09)	(0.02)
$\text{D}_{j,t-2}$	0.00	0.01	0.01
	(0.03)	(0.02)	(0.01)
$\text{D}_{j,t-3}$	-0.01	0.00	0.01
	(0.02)	(0.00)	(0.02)
$\text{D}_{j,t-4}$	0.03	0.01	-0.02*
	(0.02)	(0.02)	(0.01)
$\text{D}_{j,t-5}$	-0.01	0.00	0.01
	(0.02)	(0.01)	(0.02)
$\text{D}_{j,t-6}$	0.00	0.00	0.01
	(0.02)	(0.01)	(0.02)
$\text{D}_{j,t-7}$	-0.01	-0.01	0.00
	(0.01)	(0.01)	(0.01)
$\text{D}_{j,t-8}$	0.03**	-0.01	-0.04***
	(0.01)	(0.01)	(0.01)
$\text{D}_{j,t-9}$	-0.01	-0.02	-0.01
	(0.02)	(0.01)	(0.01)
$\text{D}_{j,t-10}$	-0.05	-0.02**	0.03
	(0.03)	(0.01)	(0.03)
$\text{D}_{j,t-11}$	-0.05	-0.07	-0.02
	(0.06)	(0.05)	(0.01)
Sum	0.71	0.70	-0.01

Note: This table shows the results of regressions of investments in a position on dividends paid by that position. Only positions eligible for automatic reinvestment plans are included. Each cell corresponds to the results of one regression. For the results in the first two rows, net investments/purchases/sales in/of a position are regressed on its contemporaneous dividends and its first lag of dividends. For the results in all other rows, net investments/purchases/sales in/of a position are regressed on its contemporaneous dividends, first lag of dividends, and one additional lag of dividends, which is indicated by row name. In these rows, only the coefficient for the lag is reported. All regressions include investor-security and time fixed effects. Standard errors are clustered by investor-security, investor, and time period and are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. N = 291,456.

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Table C4: Methodology check - matching

	Inv	Prch	Sls	Num Prch	Num Sls
Intercept	1.56***	3.78***	2.22***	2.28***	0.22***
	(0.17)	(0.16)	(0.14)	(0.13)	(0.03)
Divs AR	0.51***	0.46***	-0.05		
	(0.17)	(0.14)	(0.14)		
Post				0.08	0.06*
				(0.06)	(0.03)
Treat				0.07	0.01
				(0.23)	(0.04)
Post*Treat				0.57***	-0.08**
				(0.09)	(0.04)

Note: Investor-months are identified in which payments of automatically reinvested dividends exceed 1% of portfolio value and for which no payment of an automatically reinvested dividend was made in the prior six months (Treat == TRUE). For such investor-months, dividends, net investments, etc. are cumulated over the six-month period prior to payment (Post == FALSE) and the six-month period following payment (Post == TRUE). Each pair of observations is matched with a pair of observations covering the same time period from a control group of investors that are not paid large automatically reinvested dividends (Treat == FALSE). The matching is based on the Mahalanobis (1936) distance in terms of automatically reinvested dividends, net investments, purchases, sales, number of purchases, number of sales, performance, and mutual fund share in the six-month pre-payment time frame. The table shows the results of regressions of cumulated net investments, purchases, etc. on cumulated dividends and dummy variables according to the classification as Post and Treat. Net investments, purchases, sales, and dividends are in percentage points. Standard errors are clustered by investor and are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. N = 6,448.

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D Robustness checks

Table D1: Uses of dividends - pooled regressions

	Uses				Purchases and sales		P.withd.
	CshInc_t	AccWd_t	CdInv_t	Inv_t	Prch_t	Sls_t	PfWd_t
Intercept	0.36***	-0.72***	0.02	0.39***	1.46***	1.05***	-0.39***
	(0.09)	(0.08)	(0.03)	(0.07)	(0.07)	(0.05)	(0.07)
$\text{D}_{S,t}$	0.70***	0.12*	0.03*	0.11	0.13	0.03	0.89***
	(0.09)	(0.06)	(0.02)	(0.07)	(0.08)	(0.04)	(0.07)
$\frac{1}{11}\sum_{s=1}^{11} D_{S,t-s}$	-1.33***	0.59**	0.05	0.82***	1.07***	0.34*	-0.82***
	(0.33)	(0.28)	(0.07)	(0.30)	(0.36)	(0.20)	(0.30)
$\text{D}_{F,t}$	0.83***	0.18	0.02	-0.05	-0.32***	-0.28***	1.05***
	(0.10)	(0.12)	(0.03)	(0.06)	(0.07)	(0.05)	(0.06)
$\frac{1}{11}\sum_{s=1}^{11} D_{F,t-s}$	-0.82*	1.87***	0.13	-1.01***	-3.59***	-2.48***	1.01***
	(0.44)	(0.38)	(0.16)	(0.31)	(0.47)	(0.35)	(0.31)
$\text{D}_{AR,t}$	0.33**	0.08	0.06	0.61***	0.15*	-0.46***	0.39***
	(0.13)	(0.11)	(0.05)	(0.10)	(0.09)	(0.06)	(0.10)
$\frac{1}{11}\sum_{s=1}^{11} D_{AR,t-s}$	0.92*	-0.41	0.22	-0.56*	-5.39***	-4.76***	0.56*
	(0.50)	(0.47)	(0.17)	(0.28)	(0.39)	(0.32)	(0.28)

Note: This table shows the results of pooled regressions of the different dividend uses on contemporaneous and lagged dividends. Dividends are separated by the paying position being a stock, a (non-automatically reinvesting) fund, or an automatically reinvesting fund. No fixed effects are included. CshInc stands for net brokerage cash increases, AccWd for net brokerage account withdrawals, CdInv for net CD investments, Inv for net securities investments, Prch for securities purchases, Sls for securities sales, and PfWd for net portfolio withdrawals. Standard errors are clustered by investor and time period and are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. For all regressions, N = 278,771, except for regressions of purchases and sales, where N = 276,829.

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Table D2: Uses of dividends - alternative specification

	Uses				Purchases and sales		P.withd.
	CshInc_t	AccWd_t	CdInv_t	Inv_t	Prch_t	Sls_t	PfWd_t
$\text{D}_{S,t}$	0.75***	0.02	0.02	0.21***	0.07	-0.12***	0.79***
	(0.09)	(0.05)	(0.01)	(0.07)	(0.05)	(0.03)	(0.07)
$\frac{1}{11}\sum_{s=1}^{11} D_{S,t-s}$	-1.57***	0.50	0.10	0.96**	0.13	-0.62***	-0.96**
	(0.49)	(0.35)	(0.11)	(0.40)	(0.33)	(0.20)	(0.40)
$\text{D}_{F,t}$	0.77***	0.11	0.07*	0.06	0.03	-0.03	0.94***
	(0.14)	(0.13)	(0.04)	(0.07)	(0.06)	(0.03)	(0.07)
$\frac{1}{11}\sum_{s=1}^{11} D_{F,t-s}$	-1.78*	1.03	0.49	0.21	0.30	0.27	-0.21
	(0.98)	(0.69)	(0.30)	(0.53)	(0.43)	(0.26)	(0.53)
$\text{D}_{AR,t}$	0.33*	0.02	0.08*	0.58***	0.54***	-0.03	0.42***
	(0.17)	(0.11)	(0.05)	(0.13)	(0.14)	(0.05)	(0.13)
$\frac{1}{11}\sum_{s=1}^{11} D_{AR,t-s}$	0.48	-0.59	0.61	-0.52	-0.52	0.10	0.52
	(1.29)	(1.03)	(0.49)	(0.70)	(0.71)	(0.44)	(0.70)

Note: This table shows the results of regressions of the different dividend uses on contemporaneous and lagged dividends with one over beginning-of-month portfolio value as a control variable. Dividends are separated by the paying position being a stock, a (non-automatically reinvesting) fund, or an automatically reinvesting fund. Regressions include investor and time fixed effects. CshInc stands for net brokerage cash increases, AccWd for net brokerage account withdrawals, CdInv for net CD investments, Inv for net securities investments, Prch for securities purchases, Sls for securities sales, and PfWd for net portfolio withdrawals. Standard errors are clustered by investor and time period and are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. For all regressions, N = 278,771, except for regressions of purchases and sales, where N = 276,829.

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Table D3: Uses of dividends - interactions

	D_t	D_{t-1}	D_{t-2}	D_{t-3}	D_{t-4}	D_{t-5}	D_{t-6}	D_{t-7}	D_{t-8}	D_{t-9}	D_{t-10}	D_{t-11}	Sum
Panel A: Net brokerage cash increases, $CshInc_t$													
$Check_{t-s}$	-0.84***	0.17	0.16*	0.19	0.44	-0.12	0.12	0.28**	0.19	-0.12	-0.36*	-0.15	-0.04
	(0.21)	(0.11)	(0.09)	(0.12)	(0.60)	(0.18)	(0.11)	(0.11)	(0.16)	(0.20)	(0.19)	(0.15)	
Age	-0.10***	0.01	0.05	0.01	0.01	0.01	-0.01	-0.03	-0.01	-0.02	-0.01	-0.01	-0.10
	(0.03)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)	(0.02)	
Sex: male	0.06	0.05	-0.07	0.04	-0.05	-0.14	-0.06	0.09	0.36***	0.05	-0.05	-0.13	0.15
	(0.14)	(0.11)	(0.12)	(0.13)	(0.11)	(0.10)	(0.10)	(0.14)	(0.12)	(0.11)	(0.13)	(0.10)	
Sex: female	0.18	-0.11	-0.10	0.02	-0.11	0.05	0.06	0.08	0.12	0.00	-0.08	0.08	0.19
	(0.12)	(0.11)	(0.17)	(0.14)	(0.13)	(0.11)	(0.11)	(0.11)	(0.15)	(0.16)	(0.11)	(0.09)	
Married	-0.12	-0.03	-0.17	-0.09	-0.12	0.06	-0.15**	-0.01	0.06	0.15	-0.02	0.25***	-0.19
	(0.12)	(0.10)	(0.13)	(0.13)	(0.09)	(0.13)	(0.07)	(0.09)	(0.12)	(0.14)	(0.13)	(0.09)	
Profession: white collar	0.14*	0.06	-0.19	0.01	0.12	0.07	-0.01	0.12	-0.27**	-0.02	0.12	-0.02	0.13
	(0.08)	(0.11)	(0.12)	(0.17)	(0.11)	(0.09)	(0.09)	(0.11)	(0.12)	(0.10)	(0.11)	(0.13)	
Profession: blue collar	0.16	0.05	-0.50*	-0.07	0.27*	0.13	0.01	0.20	-0.19	0.01	0.17	-0.10	0.14
	(0.20)	(0.26)	(0.28)	(0.16)	(0.15)	(0.19)	(0.16)	(0.35)	(0.26)	(0.20)	(0.17)	(0.17)	
Profession: civil servant	0.08	-0.18	-0.32**	0.16	-0.02	-0.16	0.21	0.37*	-0.45***	-0.02	0.17	-0.11	-0.27
	(0.15)	(0.14)	(0.15)	(0.21)	(0.22)	(0.15)	(0.23)	(0.19)	(0.13)	(0.18)	(0.23)	(0.15)	
Profession: homemaker	0.05	0.09	0.40	-0.09	0.22	-0.30	-0.22	-0.40	-0.40	0.05	0.26	-0.17	-0.51
	(0.35)	(0.20)	(0.34)	(0.30)	(0.25)	(0.23)	(0.29)	(0.28)	(0.31)	(0.25)	(0.26)	(0.26)	
Profession: retiree	0.16	-0.02	-0.38**	-0.03	0.05	0.13	0.17	0.19	-0.06	-0.02	0.01	-0.21	-0.01
	(0.11)	(0.16)	(0.17)	(0.20)	(0.18)	(0.12)	(0.16)	(0.19)	(0.14)	(0.15)	(0.13)	(0.16)	
Financially inexperienced	-0.05	-0.05	0.02	0.05	0.17*	0.05	0.04	0.28*	0.03	0.06	-0.14	-0.16	0.30
	(0.09)	(0.10)	(0.10)	(0.14)	(0.10)	(0.12)	(0.11)	(0.16)	(0.14)	(0.12)	(0.11)	(0.11)	
Account tenure	-0.03**	-0.01	0.01	-0.01	-0.02*	-0.01	0.00	0.01	0.00	-0.01	0.01	0.01	-0.05
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)	(0.03)	(0.02)	(0.01)	(0.01)	(0.02)	
Mean A_t	-0.06	-0.03	-0.03	-0.01	-0.02	0.03	0.01	0.02	0.02	-0.05	-0.03	0.02	-0.13
	(0.05)	(0.05)	(0.07)	(0.05)	(0.05)	(0.03)	(0.06)	(0.08)	(0.07)	(0.05)	(0.04)	(0.03)	
Mean $Cash_t/(Cash_t+A_t)$	0.40	-0.01	-0.08	-0.13	-1.19***	-0.32	0.05	1.63***	1.04***	0.24	-0.12	0.50**	2.01
	(0.27)	(0.21)	(0.29)	(0.30)	(0.34)	(0.41)	(0.17)	(0.54)	(0.32)	(0.24)	(0.28)	(0.19)	
Mean turnover	-0.03*	-0.03	0.00	-0.01	-0.02*	0.00	-0.03	0.02	-0.02	-0.03**	-0.02	0.00	-0.17
	(0.02)	(0.02)	(0.01)	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)	(0.03)	(0.01)	(0.02)	(0.02)	
Panel B: Net brokerage account withdrawals, $AccWd_t$													
$Check_{t-s}$	1.11***	0.11	-0.16	-0.09	-0.39	0.16	0.04	0.22	-0.32	0.09	0.11	-0.13	0.75
	(0.25)	(0.10)	(0.12)	(0.23)	(0.69)	(0.52)	(0.91)	(0.37)	(0.28)	(0.20)	(0.45)	(0.49)	
Age	0.07***	0.01	-0.07*	-0.01	0.02	0.00	0.00	0.08***	0.01	-0.01	0.01	0.03	0.14
	(0.02)	(0.03)	(0.03)	(0.03)	(0.04)	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	
Sex: male	-0.03	-0.08	-0.03	0.03	0.04	0.09	-0.05	-0.11	-0.24**	-0.03	0.04	0.19***	-0.18
	(0.11)	(0.11)	(0.12)	(0.10)	(0.09)	(0.06)	(0.08)	(0.13)	(0.09)	(0.09)	(0.11)	(0.07)	
Sex: female	-0.12	0.05	0.05	-0.06	0.17	0.09	0.09	-0.19	-0.26**	-0.03	0.06	0.00	-0.15
	(0.13)	(0.10)	(0.17)	(0.10)	(0.11)	(0.09)	(0.08)	(0.16)	(0.12)	(0.13)	(0.11)	(0.08)	
Married	0.08	0.02	0.08	0.00	0.16**	0.04	0.06	-0.07	-0.06	-0.10	-0.06	-0.07	0.08
	(0.09)	(0.10)	(0.12)	(0.08)	(0.07)	(0.09)	(0.06)	(0.06)	(0.07)	(0.09)	(0.09)	(0.06)	
Profession: white collar	-0.14*	-0.13	0.26*	-0.02	-0.19**	0.01	0.10	-0.13	0.23***	0.00	-0.11	-0.04	-0.16
	(0.08)	(0.10)	(0.14)	(0.13)	(0.09)	(0.09)	(0.12)	(0.10)	(0.08)	(0.08)	(0.10)	(0.12)	
Profession: blue collar	-0.06	-0.18	0.40	0.19	-0.17	-0.13	0.12	-0.32	-0.12	0.05	-0.15	0.14	-0.23
	(0.19)	(0.14)	(0.25)	(0.16)	(0.15)	(0.15)	(0.13)	(0.23)	(0.20)	(0.18)	(0.17)	(0.17)	
Profession: civil servant	-0.14	-0.05	0.44**	-0.07	-0.18	-0.01	-0.05	-0.21*	0.40***	0.01	-0.35**	0.05	-0.16
	(0.16)	(0.15)	(0.18)	(0.18)	(0.15)	(0.15)	(0.12)	(0.12)	(0.14)	(0.14)	(0.16)	(0.13)	
Profession: homemaker	0.09	-0.24	0.07	0.02	-0.31	0.10	-0.27	0.47	0.33	-0.01	-0.24	-0.02	-0.01
	(0.22)	(0.17)	(0.27)	(0.27)	(0.29)	(0.18)	(0.17)	(0.32)	(0.25)	(0.13)	(0.25)	(0.25)	
Profession: retiree	-0.06	-0.06	0.37**	0.07	-0.19	0.05	0.00	-0.28*	0.13	-0.04	-0.13	0.06	-0.08
	(0.12)	(0.13)	(0.18)	(0.16)	(0.16)	(0.09)	(0.09)	(0.15)	(0.10)	(0.13)	(0.13)	(0.13)	

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Table D3: Uses of dividends - interactions *(continued)*

	D_t	D_{t-1}	D_{t-2}	D_{t-3}	D_{t-4}	D_{t-5}	D_{t-6}	D_{t-7}	D_{t-8}	D_{t-9}	D_{t-10}	D_{t-11}	Sum
Financially inexperienced	0.09	0.05	-0.09	0.09	-0.12	0.01	0.10	-0.11	0.03	-0.11	0.11	0.17*	0.22
	(0.09)	(0.08)	(0.08)	(0.14)	(0.08)	(0.09)	(0.08)	(0.15)	(0.11)	(0.12)	(0.11)	(0.10)	
Account tenure	0.02	0.01	-0.01	0.01	0.01	0.00	0.00	0.00	0.00	0.01	0.00	-0.01	0.04
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	
Mean A_t	-0.02	-0.02	0.00	-0.05	0.01	-0.01	0.02	-0.02	-0.03	0.05	0.04	-0.01	-0.04
	(0.05)	(0.03)	(0.03)	(0.05)	(0.04)	(0.04)	(0.04)	(0.02)	(0.05)	(0.04)	(0.02)	(0.03)	
Mean $Cash_t/(Cash_t+A_t)$	-0.41*	-0.03	-0.39**	-0.17	0.70***	0.12	0.01	-0.02	-0.41	-0.35**	-0.08	-0.33***	-1.36
	(0.20)	(0.15)	(0.16)	(0.23)	(0.21)	(0.24)	(0.14)	(0.18)	(0.28)	(0.17)	(0.24)	(0.11)	
Mean turnover	0.01	-0.01***	-0.01**	0.00	0.00	0.01	0.01**	-0.01	0.00	-0.01	0.00	0.00	-0.01
	(0.01)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	
Panel C: Net investments in CDs, $CdInv_t$													
$Check_{t-s}$	-0.06	-0.03	-0.04	-0.11*	-0.01	0.03	0.07	0.03	0.05	0.04	0.00	-0.04	-0.07
	(0.04)	(0.03)	(0.04)	(0.06)	(0.03)	(0.03)	(0.05)	(0.03)	(0.03)	(0.03)	(0.03)	(0.03)	
Age	0.01	0.00	0.00	0.01	-0.01	0.00	-0.01*	0.00	-0.01	0.01*	0.00	-0.01	-0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	
Sex: male	-0.04*	0.01	0.03	-0.02	0.00	-0.02	0.04	0.04	-0.05	0.08*	0.02	-0.02	0.07
	(0.03)	(0.04)	(0.04)	(0.05)	(0.04)	(0.03)	(0.06)	(0.03)	(0.03)	(0.05)	(0.03)	(0.03)	
Sex: female	-0.04	0.04	0.05	-0.03	-0.04	-0.08**	-0.01	0.10	0.01	0.07	0.01	-0.04	0.04
	(0.03)	(0.04)	(0.03)	(0.05)	(0.04)	(0.04)	(0.08)	(0.06)	(0.05)	(0.07)	(0.03)	(0.03)	
Married	-0.03	0.00	0.06**	0.00	-0.02	-0.06***	0.07	0.01	-0.03	0.06	0.01	-0.05*	0.02
	(0.03)	(0.04)	(0.03)	(0.03)	(0.03)	(0.02)	(0.04)	(0.04)	(0.05)	(0.03)	(0.03)	(0.03)	
Profession: white collar	0.02	0.01	0.01	0.03	0.00	0.01	-0.03	0.00	0.04	-0.04	-0.05**	-0.02	-0.02
	(0.02)	(0.03)	(0.02)	(0.04)	(0.03)	(0.03)	(0.04)	(0.02)	(0.04)	(0.03)	(0.02)	(0.02)	
Profession: blue collar	0.03	0.04	0.04	0.01	-0.13	-0.10*	0.01	0.06	0.09*	-0.07*	0.04	0.02	0.04
	(0.04)	(0.06)	(0.04)	(0.08)	(0.08)	(0.05)	(0.06)	(0.04)	(0.05)	(0.04)	(0.05)	(0.05)	
Profession: civil servant	0.04	0.06	0.01	0.07*	0.05	0.02	0.00	-0.03	0.03	-0.06	-0.02	-0.01	0.16
	(0.04)	(0.05)	(0.06)	(0.04)	(0.09)	(0.04)	(0.04)	(0.03)	(0.05)	(0.05)	(0.03)	(0.03)	
Profession: homemaker	-0.03	-0.03	0.12*	-0.27**	0.01	0.11*	0.26*	0.10*	0.10	-0.12	0.00	0.11**	0.36
	(0.05)	(0.06)	(0.06)	(0.11)	(0.11)	(0.07)	(0.14)	(0.06)	(0.09)	(0.16)	(0.05)	(0.05)	
Profession: retiree	-0.03	0.00	0.06	0.07	0.05	-0.04	-0.05	0.19***	0.04	-0.06	-0.02	0.02	0.23
	(0.06)	(0.06)	(0.05)	(0.06)	(0.08)	(0.04)	(0.09)	(0.06)	(0.05)	(0.05)	(0.04)	(0.04)	
Financially inexperienced	0.02	-0.01	-0.02	-0.04	0.00	0.05	-0.02	-0.06	0.01	0.08	0.02	0.04	0.07
	(0.03)	(0.05)	(0.03)	(0.03)	(0.04)	(0.04)	(0.06)	(0.04)	(0.02)	(0.05)	(0.03)	(0.03)	
Account tenure	0.01*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	0.00
	(0.00)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)	
Mean A_t	0.02	0.03*	0.02	0.04*	-0.01	-0.01	-0.01	-0.04	-0.02	-0.01	0.02	0.01	0.04
	(0.02)	(0.02)	(0.04)	(0.02)	(0.02)	(0.03)	(0.02)	(0.03)	(0.02)	(0.02)	(0.03)	(0.02)	
Mean $Cash_t/(Cash_t+A_t)$	-0.05	-0.06	0.04	-0.02	0.03	-0.02	0.05	-0.09	0.05	0.02	0.03	-0.04	-0.06
	(0.06)	(0.08)	(0.08)	(0.05)	(0.06)	(0.06)	(0.05)	(0.10)	(0.07)	(0.06)	(0.05)	(0.04)	
Mean turnover	0.00	0.00	0.00	0.00	0.00	0.00	0.00*	0.00	0.00	0.00*	0.00	0.00	0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	
Panel D: Net investments in securities, Inv_t													
$Check_{t-s}$	-0.24*	-0.23	0.03	-0.02	-0.05	-0.09	-0.23	-0.52*	0.07	-0.01	0.27	0.33	-0.69
	(0.13)	(0.16)	(0.14)	(0.24)	(0.23)	(0.43)	(0.88)	(0.30)	(0.22)	(0.17)	(0.35)	(0.42)	
Age	0.02	-0.03	0.01	-0.02	-0.02	-0.01	0.02	-0.04	0.02	0.02	0.00	-0.01	-0.04
	(0.02)	(0.03)	(0.02)	(0.02)	(0.03)	(0.03)	(0.02)	(0.04)	(0.02)	(0.02)	(0.02)	(0.02)	
Sex: male	0.01	0.02	0.06	-0.05	0.01	0.06	0.07	0.02	-0.02	-0.11	-0.01	-0.03	0.03
	(0.07)	(0.05)	(0.05)	(0.08)	(0.06)	(0.07)	(0.05)	(0.07)	(0.09)	(0.08)	(0.03)	(0.06)	
Sex: female	-0.03	0.01	0.00	0.07	-0.02	-0.07	-0.13**	0.03	0.15***	-0.04	0.01	-0.05	-0.07
	(0.06)	(0.05)	(0.06)	(0.09)	(0.06)	(0.05)	(0.06)	(0.08)	(0.05)	(0.06)	(0.03)	(0.04)	
Married	0.07	0.01	0.02	0.08	-0.03	-0.04	0.02	0.07	0.04	-0.11	0.07	-0.12*	0.08
	(0.08)	(0.06)	(0.06)	(0.07)	(0.06)	(0.08)	(0.08)	(0.05)	(0.05)	(0.07)	(0.07)	(0.06)	

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Table D3: Uses of dividends - interactions *(continued)*

	D_t	D_{t-1}	D_{t-2}	D_{t-3}	D_{t-4}	D_{t-5}	D_{t-6}	D_{t-7}	D_{t-8}	D_{t-9}	D_{t-10}	D_{t-11}	Sum
Profession: white collar	-0.02	0.06	-0.08	-0.02	0.07	-0.09	-0.07	0.02	0.00	0.06	0.03	0.08*	0.04
	(0.06)	(0.07)	(0.05)	(0.06)	(0.06)	(0.06)	(0.12)	(0.06)	(0.07)	(0.06)	(0.07)	(0.05)	
Profession: blue collar	-0.13	0.08	0.07	-0.13	0.03	0.11	-0.15	0.00	0.24	0.00	-0.05	-0.07	0.00
	(0.13)	(0.16)	(0.06)	(0.13)	(0.08)	(0.20)	(0.10)	(0.14)	(0.18)	(0.10)	(0.10)	(0.11)	
Profession: civil servant	0.03	0.17*	-0.12	-0.16*	0.16**	0.15	-0.17	-0.16**	-0.02	0.08	0.21	0.06	0.23
	(0.08)	(0.09)	(0.08)	(0.08)	(0.08)	(0.09)	(0.13)	(0.07)	(0.10)	(0.09)	(0.14)	(0.10)	
Profession: homemaker	-0.10	0.18*	-0.58*	0.35***	0.08	0.10	0.21	-0.19	-0.04	0.08	-0.03	0.08	0.14
	(0.19)	(0.09)	(0.34)	(0.13)	(0.22)	(0.15)	(0.23)	(0.14)	(0.15)	(0.14)	(0.10)	(0.13)	
Profession: retiree	-0.08	0.09	-0.04	-0.11	0.08	-0.13*	-0.14	-0.11	-0.12	0.11	0.14	0.11	-0.20
	(0.08)	(0.09)	(0.08)	(0.10)	(0.09)	(0.07)	(0.13)	(0.08)	(0.07)	(0.09)	(0.09)	(0.08)	
Financially inexperienced	-0.05	0.01	0.07*	-0.11	-0.06	-0.12	-0.09	-0.10	-0.07	-0.04	0.01	-0.06	-0.61
	(0.05)	(0.04)	(0.04)	(0.09)	(0.05)	(0.10)	(0.10)	(0.11)	(0.08)	(0.05)	(0.05)	(0.06)	
Account tenure	0.00	0.00	0.00	0.00	0.01	0.02	0.00	0.00	-0.01	0.00	-0.01	0.00	0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	
Mean A_t	0.07*	0.02	0.01	0.02	0.03	-0.01	-0.01	0.07	0.01	0.01	-0.02*	-0.02	0.18
	(0.03)	(0.04)	(0.04)	(0.04)	(0.03)	(0.03)	(0.03)	(0.08)	(0.04)	(0.02)	(0.01)	(0.02)	
Mean $Cash_t/(Cash_t+A_t)$	-0.13	-0.03	0.19**	0.11	0.26	0.03	-0.12	-0.25**	-0.12	-0.04	0.01	-0.09	-0.18
	(0.12)	(0.09)	(0.09)	(0.09)	(0.15)	(0.16)	(0.14)	(0.11)	(0.08)	(0.09)	(0.08)	(0.09)	
Mean turnover	0.03	0.03**	0.02	0.02	0.02	0.00	0.02	-0.01	0.02	0.03**	0.02	0.00	0.20
	(0.02)	(0.02)	(0.01)	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)	(0.01)	(0.02)	
Panel E: Securities purchases, $Prch_t$													
$Check_{t-s}$	-0.40*	-0.41*	-0.40	0.16	0.15	-0.03	0.57	-0.48*	-0.01	0.02	0.15	0.28	-0.40
	(0.21)	(0.24)	(0.31)	(0.16)	(0.16)	(0.41)	(0.41)	(0.24)	(0.32)	(0.21)	(0.20)	(0.38)	
Age	0.04**	-0.02	0.02	-0.01	-0.01	-0.05**	0.04**	-0.05	0.01	0.02	0.00	0.01	0.00
	(0.02)	(0.02)	(0.02)	(0.01)	(0.03)	(0.02)	(0.02)	(0.03)	(0.03)	(0.02)	(0.01)	(0.02)	
Sex: male	0.00	0.09**	0.04	0.02	-0.05	-0.03	0.03	0.05	0.07	-0.08*	-0.07	0.04	0.11
	(0.07)	(0.04)	(0.05)	(0.05)	(0.06)	(0.05)	(0.05)	(0.05)	(0.08)	(0.05)	(0.05)	(0.06)	
Sex: female	-0.02	0.01	0.00	0.02	-0.10**	-0.10**	-0.07*	0.06	0.19***	-0.05	0.02	-0.01	-0.05
	(0.06)	(0.06)	(0.06)	(0.08)	(0.05)	(0.05)	(0.04)	(0.05)	(0.06)	(0.05)	(0.05)	(0.04)	
Married	0.01	0.03	-0.05	0.08	-0.03	-0.03	0.05	0.10***	0.10*	-0.09*	0.03	-0.12**	0.08
	(0.06)	(0.06)	(0.07)	(0.07)	(0.06)	(0.05)	(0.08)	(0.04)	(0.06)	(0.05)	(0.04)	(0.05)	
Profession: white collar	-0.08	-0.01	-0.03	0.03	0.01	0.02	-0.02	0.03	-0.01	-0.04	-0.02	0.04	-0.08
	(0.07)	(0.05)	(0.05)	(0.07)	(0.06)	(0.05)	(0.11)	(0.06)	(0.06)	(0.04)	(0.05)	(0.07)	
Profession: blue collar	-0.03	0.01	-0.04	-0.06	-0.01	0.07	-0.15	0.04	0.18	-0.02	-0.14*	-0.03	-0.18
	(0.12)	(0.17)	(0.08)	(0.13)	(0.09)	(0.18)	(0.09)	(0.17)	(0.14)	(0.08)	(0.08)	(0.12)	
Profession: civil servant	-0.11	0.04	-0.13*	-0.11	0.09	0.19	-0.13	-0.17***	0.13*	0.08	0.11	-0.03	-0.04
	(0.08)	(0.09)	(0.08)	(0.07)	(0.08)	(0.14)	(0.09)	(0.05)	(0.06)	(0.11)	(0.10)	(0.09)	
Profession: homemaker	0.01	0.02	-0.08	0.51***	0.15	0.21	0.02	-0.16	-0.23*	-0.19*	-0.15	-0.04	0.07
	(0.18)	(0.09)	(0.11)	(0.16)	(0.18)	(0.16)	(0.23)	(0.10)	(0.14)	(0.11)	(0.11)	(0.12)	
Profession: retiree	-0.10	0.01	-0.05	-0.03	-0.01	0.06	-0.14	-0.04	-0.04	0.03	0.04	0.02	-0.25
	(0.06)	(0.09)	(0.06)	(0.10)	(0.11)	(0.07)	(0.14)	(0.07)	(0.07)	(0.07)	(0.06)	(0.09)	
Financially inexperienced	0.01	0.01	0.08*	-0.05	-0.05	-0.12	-0.08	-0.03	-0.05	-0.04	0.03	-0.02	-0.31
	(0.06)	(0.05)	(0.05)	(0.11)	(0.06)	(0.10)	(0.12)	(0.11)	(0.07)	(0.05)	(0.05)	(0.05)	
Account tenure	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.01	-0.01	0.00	-0.01**	-0.01	0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.01)	
Mean A_t	-0.01	0.00	0.02	-0.02	-0.01	0.01	-0.01	0.08	0.01	0.00	-0.01	-0.04*	0.02
	(0.03)	(0.04)	(0.04)	(0.03)	(0.04)	(0.03)	(0.03)	(0.08)	(0.04)	(0.02)	(0.03)	(0.02)	
Mean $Cash_t/(Cash_t+A_t)$	-0.19*	-0.02	0.03	0.03	0.17*	0.04	-0.14	-0.19*	-0.02	-0.02	0.01	-0.11	-0.41
	(0.10)	(0.08)	(0.06)	(0.07)	(0.10)	(0.12)	(0.17)	(0.11)	(0.10)	(0.06)	(0.09)	(0.09)	
Mean turnover	0.04**	-0.03	-0.03	0.00	-0.01	-0.02	0.02	-0.01	0.01	0.00	0.02	0.01	0.00
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.03)	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	

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Table D3: Uses of dividends - interactions *(continued)*

	D_t	D_{t-1}	D_{t-2}	D_{t-3}	D_{t-4}	D_{t-5}	D_{t-6}	D_{t-7}	D_{t-8}	D_{t-9}	D_{t-10}	D_{t-11}	Sum
Panel F: Securities sales, Sls_t													
$Check_{t-s}$	-0.17	-0.17*	-0.40	0.16	0.20	0.03	0.81	0.00	-0.11	0.05	-0.08	-0.06	0.26
	(0.12)	(0.10)	(0.24)	(0.17)	(0.18)	(0.06)	(0.81)	(0.26)	(0.21)	(0.09)	(0.20)	(0.16)	
Age	0.02**	0.00	0.00	0.00	0.01	-0.04***	0.02*	-0.01	0.00	0.01	0.00	0.02	0.03
	(0.01)	(0.01)	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.01)	(0.01)	(0.02)	
Sex: male	-0.01	0.06**	-0.01	0.04	-0.04	-0.06	0.00	0.01	0.02	0.02	0.00	0.03	0.06
	(0.04)	(0.02)	(0.03)	(0.07)	(0.04)	(0.04)	(0.06)	(0.04)	(0.03)	(0.05)	(0.04)	(0.03)	
Sex: female	-0.01	0.00	0.01	-0.07	-0.10**	-0.03	0.06	0.00	0.06*	0.03	0.05	0.02	0.02
	(0.05)	(0.05)	(0.05)	(0.06)	(0.04)	(0.03)	(0.04)	(0.05)	(0.04)	(0.03)	(0.04)	(0.04)	
Married	-0.01	0.02	-0.05	0.01	0.00	0.03	0.02	0.00	0.08*	0.00	-0.01	-0.02	0.07
	(0.04)	(0.05)	(0.07)	(0.04)	(0.03)	(0.03)	(0.04)	(0.03)	(0.05)	(0.05)	(0.03)	(0.04)	
Profession: white collar	-0.06	-0.03	0.04	0.04	-0.08*	0.10*	0.04	0.00	0.00	-0.07	-0.05	-0.01	-0.08
	(0.05)	(0.04)	(0.06)	(0.05)	(0.04)	(0.06)	(0.05)	(0.03)	(0.04)	(0.04)	(0.06)	(0.04)	
Profession: blue collar	0.05	0.00	-0.08	0.02	-0.02	-0.10	-0.04	0.04	0.03	-0.05	-0.05	0.01	-0.19
	(0.10)	(0.07)	(0.06)	(0.11)	(0.08)	(0.10)	(0.05)	(0.08)	(0.07)	(0.06)	(0.06)	(0.08)	
Profession: civil servant	-0.11*	-0.10**	-0.01	0.04	-0.11	0.03	0.04	-0.07	0.10	0.00	-0.11	-0.05	-0.35
	(0.06)	(0.05)	(0.07)	(0.08)	(0.08)	(0.09)	(0.08)	(0.07)	(0.07)	(0.05)	(0.09)	(0.05)	
Profession: homemaker	0.04	-0.06	0.46*	0.09	0.20	0.07	-0.10	-0.05	-0.26***	-0.18***	-0.15	0.03	0.09
	(0.15)	(0.10)	(0.26)	(0.11)	(0.15)	(0.13)	(0.15)	(0.13)	(0.09)	(0.05)	(0.13)	(0.10)	
Profession: retiree	-0.06	0.00	0.00	0.01	-0.08	0.15**	-0.02	0.06	-0.01	-0.07	-0.06	-0.05	-0.13
	(0.07)	(0.05)	(0.08)	(0.07)	(0.07)	(0.08)	(0.05)	(0.09)	(0.06)	(0.06)	(0.09)	(0.06)	
Financially inexperienced	0.06**	0.01	0.03	0.04	0.02	-0.01	0.02	0.04	0.01	0.01	0.03	0.04	0.30
	(0.02)	(0.02)	(0.03)	(0.03)	(0.03)	(0.03)	(0.04)	(0.02)	(0.02)	(0.03)	(0.02)	(0.02)	
Account tenure	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01*	0.01	0.00	-0.01	-0.01	0.01
	(0.01)	(0.01)	(0.00)	(0.01)	(0.01)	(0.00)	(0.01)	(0.00)	(0.01)	(0.00)	(0.01)	(0.01)	
Mean A_t	-0.06***	-0.02	0.01	-0.01	-0.02	-0.01	0.00	0.01	0.00	-0.01	-0.01	-0.01	-0.13
	(0.02)	(0.02)	(0.03)	(0.02)	(0.01)	(0.02)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	
Mean $Cash_t/(Cash_t+A_t)$	-0.06	0.01	-0.13*	-0.01	-0.15**	-0.05	-0.01	0.01	0.10	0.09	0.05	0.00	-0.15
	(0.08)	(0.06)	(0.08)	(0.06)	(0.06)	(0.06)	(0.10)	(0.07)	(0.08)	(0.06)	(0.08)	(0.06)	
Mean turnover	0.01	-0.05***	-0.01	-0.04***	-0.04	-0.02	0.02	-0.01	-0.01	-0.02	0.01	0.01	-0.15
	(0.01)	(0.01)	(0.02)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)	(0.01)	
Panel G: Net portfolio withdrawals, $PfWd_t$													
$Check_{t-s}$	0.23*	0.24	-0.02	0.01	0.05	0.09	0.23	0.52*	-0.07	0.01	-0.25	-0.33	0.71
	(0.13)	(0.16)	(0.14)	(0.24)	(0.23)	(0.43)	(0.88)	(0.30)	(0.22)	(0.17)	(0.36)	(0.42)	
Age	-0.02	0.03	-0.01	0.02	0.02	0.01	-0.02	0.04	-0.02	-0.02	0.00	0.01	0.04
	(0.02)	(0.03)	(0.02)	(0.02)	(0.03)	(0.03)	(0.02)	(0.04)	(0.02)	(0.02)	(0.02)	(0.02)	
Sex: male	-0.01	-0.02	-0.06	0.05	-0.01	-0.06	-0.07	-0.02	0.03	0.11	0.01	0.03	-0.02
	(0.07)	(0.05)	(0.05)	(0.08)	(0.07)	(0.07)	(0.05)	(0.07)	(0.09)	(0.08)	(0.03)	(0.06)	
Sex: female	0.03	-0.01	0.00	-0.07	0.02	0.07	0.13**	-0.02	-0.15***	0.04	-0.01	0.05	0.08
	(0.06)	(0.05)	(0.06)	(0.09)	(0.06)	(0.05)	(0.06)	(0.08)	(0.05)	(0.05)	(0.03)	(0.04)	
Married	-0.07	-0.01	-0.02	-0.08	0.03	0.04	-0.02	-0.07	-0.04	0.11	-0.07	0.12*	-0.08
	(0.08)	(0.06)	(0.06)	(0.07)	(0.06)	(0.08)	(0.08)	(0.05)	(0.05)	(0.07)	(0.07)	(0.06)	
Profession: white collar	0.02	-0.06	0.08	0.02	-0.07	0.09	0.07	-0.02	0.00	-0.06	-0.03	-0.08*	-0.04
	(0.06)	(0.07)	(0.05)	(0.06)	(0.06)	(0.06)	(0.12)	(0.06)	(0.07)	(0.06)	(0.07)	(0.05)	
Profession: blue collar	0.13	-0.08	-0.07	0.13	-0.03	-0.10	0.15	0.00	-0.24	0.00	0.05	0.06	0.00
	(0.13)	(0.16)	(0.06)	(0.13)	(0.08)	(0.20)	(0.10)	(0.14)	(0.18)	(0.10)	(0.10)	(0.11)	
Profession: civil servant	-0.03	-0.17*	0.12	0.16*	-0.16**	-0.14	0.17	0.16**	0.02	-0.08	-0.21	-0.06	-0.22
	(0.08)	(0.09)	(0.08)	(0.08)	(0.08)	(0.09)	(0.13)	(0.07)	(0.10)	(0.09)	(0.14)	(0.10)	
Profession: homemaker	0.10	-0.18*	0.58*	-0.35**	-0.08	-0.10	-0.21	0.18	0.04	-0.08	0.03	-0.08	-0.15
	(0.19)	(0.09)	(0.34)	(0.13)	(0.22)	(0.15)	(0.23)	(0.14)	(0.15)	(0.14)	(0.10)	(0.13)	
Profession: retiree	0.08	-0.08	0.04	0.10	-0.09	0.13*	0.14	0.10	0.12	-0.11	-0.14	-0.12	0.17
	(0.08)	(0.09)	(0.08)	(0.10)	(0.09)	(0.07)	(0.13)	(0.08)	(0.07)	(0.09)	(0.09)	(0.08)	
Financially inexperienced	0.05	-0.01	-0.08*	0.11	0.06	0.12	0.09	0.10	0.07	0.04	-0.01	0.06	0.60
	(0.05)	(0.04)	(0.04)	(0.09)	(0.05)	(0.10)	(0.10)	(0.11)	(0.08)	(0.05)	(0.05)	(0.06)	

(continued on next page...)

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Table D3: Uses of dividends - interactions *(continued)*

	D_t	D_{t-1}	D_{t-2}	D_{t-3}	D_{t-4}	D_{t-5}	D_{t-6}	D_{t-7}	D_{t-8}	D_{t-9}	D_{t-10}	D_{t-11}	Sum
Account tenure	0.00	0.01	0.00	0.00	-0.01	-0.02	0.00	0.00	0.01	0.00	0.01	0.00	0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	
Mean A_t	-0.06*	-0.02	-0.01	-0.03	-0.03	0.01	0.01	-0.07	-0.01	-0.01	0.02*	0.02	-0.18
	(0.03)	(0.04)	(0.04)	(0.04)	(0.03)	(0.03)	(0.03)	(0.08)	(0.04)	(0.02)	(0.01)	(0.02)	
Mean $Cash_t/(Cash_t+A_t)$	0.14	0.03	-0.19**	-0.12	-0.26*	-0.03	0.12	0.25**	0.12	0.04	-0.02	0.09	0.17
	(0.12)	(0.09)	(0.09)	(0.09)	(0.15)	(0.16)	(0.14)	(0.11)	(0.08)	(0.09)	(0.08)	(0.09)	
Mean turnover	-0.03	-0.03**	-0.02	-0.02	-0.02	0.00	-0.02	0.01	-0.02	-0.03**	-0.02	0.00	-0.20
	(0.02)	(0.02)	(0.01)	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.01)	(0.01)	(0.02)	

Note: This table shows the results of regressions of the different dividend uses on contemporaneous dividends, the specified lag of dividends, and interactions of these dividends with investor characteristics. Only the results for the interactions are reported. Dividends eligible for automatic reinvestment plans are excluded. The omitted sex category is shared accounts and the omitted profession category is an unknown occupation. The right tail of mean A_t is winsorized at the 99% level, which is EUR 510,496. The right tail of mean turnover is winsorized at 50% of portfolio value. Age is in decades, account tenure in years, mean A_t in EUR 100,000, mean $Cash_t/(Cash_t+A_t)$ in units of ten percentage points and mean turnover in percentage points. All regressions include investor and time fixed effects. Standard errors are clustered by investor and time period and are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. In Panels A-D and G, N = 278,771. In Panels E and F, N = 276,829.

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Table D4: Reinvestment in the dividend payer - stocks and funds

	Stocks			Funds		
	$\text{Inv}_{j,t}$	$\text{Prch}_{j,t}$	$\text{Sls}_{j,t}$	$\text{Inv}_{j,t}$	$\text{Prch}_{j,t}$	$\text{Sls}_{j,t}$
$\text{D}_{j,t}$	0.01	0.02	0.01	0.03**	0.00	-0.03***
	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)
$\text{D}_{j,t-1}$	-0.03	-0.03*	0.00	0.03	0.03*	0.00
	(0.02)	(0.02)	(0.01)	(0.02)	(0.02)	(0.01)
$\text{D}_{j,t-2}$	-0.04*	-0.03*	0.01	0.01	0.00	-0.01
	(0.02)	(0.02)	(0.01)	(0.02)	(0.01)	(0.02)
$\text{D}_{j,t-3}$	-0.01	0.00	0.01	0.00	-0.01	0.00
	(0.02)	(0.02)	(0.01)	(0.01)	(0.01)	(0.01)
$\text{D}_{j,t-4}$	0.01	0.00	-0.01	0.01	0.00	-0.01
	(0.02)	(0.02)	(0.01)	(0.01)	(0.00)	(0.01)
$\text{D}_{j,t-5}$	0.00	0.02	0.02	0.01	-0.01	-0.01
	(0.04)	(0.04)	(0.01)	(0.01)	(0.00)	(0.01)
$\text{D}_{j,t-6}$	0.03	0.03	-0.01	0.02***	-0.01**	-0.03***
	(0.03)	(0.03)	(0.01)	(0.01)	(0.00)	(0.01)
$\text{D}_{j,t-7}$	0.00	-0.01	-0.01	-0.01	-0.01**	0.00
	(0.02)	(0.02)	(0.01)	(0.02)	(0.00)	(0.01)
$\text{D}_{j,t-8}$	0.01	0.00	-0.01	0.01	0.01	0.00
	(0.01)	(0.01)	(0.01)	(0.02)	(0.02)	(0.02)
$\text{D}_{j,t-9}$	0.01	-0.01	-0.02*	-0.02	-0.01	0.02
	(0.02)	(0.01)	(0.01)	(0.02)	(0.01)	(0.02)
$\text{D}_{j,t-10}$	0.01	0.01	0.00	-0.06*	-0.01	0.05
	(0.02)	(0.01)	(0.01)	(0.03)	(0.01)	(0.03)
$\text{D}_{j,t-11}$	-0.03	-0.01	0.01	-0.03	-0.01**	0.01
	(0.02)	(0.01)	(0.01)	(0.02)	(0.01)	(0.02)
Sum	-0.03	-0.01	0.02	0.00	-0.01	-0.02

Note: This table shows the results of regressions of investments in a position on dividends paid by that position, separated by the position being a stock or a fund. Each cell corresponds to the results of one regression. For the results in the first row, net investments/purchases/sales in/of a position are regressed on its contemporaneous dividends. For the results in all other rows, net investments/purchases/sales in/of a position are regressed on its contemporaneous dividends and one lag of dividends, which is indicated by row name. In these rows, only the coefficient for the lag is reported. Positions eligible for automatic reinvestment plans are excluded. All regressions include investor-security and time fixed effects. Standard errors are clustered by investor-security, investor, and time period and are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. In the left three columns, N = 1,097,868. In the right three columns, N = 243,256.

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Table D5: Dividend initiations - alternative control period

	Inv	Prch	Sls	Num Prch	Num Sls
Intercept	-0.08	4.47***	4.55***	0.91***	0.47***
	(0.50)	(0.55)	(0.54)	(0.14)	(0.07)
Divs	1.12***	0.78**	-0.34		
	(0.34)	(0.35)	(0.33)		
Post				0.47***	0.25***
				(0.11)	(0.08)
Treat				0.19	0.02
				(0.24)	(0.11)
Post*Treat				-0.22	-0.19*
				(0.18)	(0.11)

Note: Investor-months are identified in which payments of newly initiated dividends exceed 1% of portfolio value (Treat == TRUE). For such investor-months, dividends, net investments, etc. are cumulated over the six-month period following payment (Post == TRUE) and the six-month period one year before that (Post == FALSE). Each pair of observations is matched with a pair of observations covering the same time period from a control group of investors that are not paid large newly initiated dividends (Treat == FALSE). The table shows the results of regressions of cumulated net investments, purchases, etc. on cumulated dividends and dummy variables according to the classification as Post and Treat. Dividends eligible for automatic reinvestment plans are excluded. Net investments, purchases, sales, and dividends are in percentage points. Standard errors are clustered by investor and are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. N = 1,448.

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E Survey questions and results

Table E1: Survey questions

Question	Possible answers
Q1: Have you ever received a dividend payment from a stock, mutual fund or ETF?	a) Yes b) No
Q2: What did you do with the dividend payment in the first week after payment? (In case you have received multiple dividend payments in the past, what did you mostly do?)	a) Invest in stocks, funds, etc. b) Spend c) Nothing (let it sit in the bank)
Q3: What did you do with the dividend payment over the long run, i.e. until today? (In case you have received multiple dividend payments in the past, what did you mostly do?)	a) Invest in stocks, funds, etc. b) Spend c) Nothing (let it sit in the bank)
Q4: Now, we are interested in the structure of the brokerage account that you primarily use to invest in stocks, funds etc. More specifically, we are interested whether this brokerage account has its own cash balance (see the example image). By that, we mean a cash position from which e.g. stock purchases are paid but which is not used for other regular payment transactions (e.g. salary, bills...). Which description matches your account better? (In case you have more than one brokerage account, think of the one with the most assets.)	a) My brokerage account has its own cash balance (like in the image). b) My brokerage account does not have its own cash balance. When I buy stocks/funds, proceeds are taken directly from my checking account (or another bank account).
Q5: Say, you receive a large dividend payment and you want to spend it on a new TV. Which description would match your spending process more accurately?	a) I would pay the TV directly from my brokerage account. b) From my brokerage account, I would first make a transfer to another bank account. Then I would pay the TV from that account.
Q6: Do you have your brokerage account (for investments) and your primary bank account (for receiving salary, paying bills...) at the same bank?	a) Same bank b) Different banks
Q7: How do you primarily buy/sell stocks and funds?	a) Online - smartphone/tablet b) Online - computer c) Phone call d) In-person meetings with a bank employee/other person

Note: This table shows our survey questions and the possible answers that survey takers could select. Q2 and Q3 were asked conditionally on Q1 being answered with "Yes". The image referenced in Q4 is that in Figure F1. In Q5, "brokerage account" was replaced with "bank account that the dividend was paid out to" if Q4 was answered with b). Prior to Q4, respondents were asked if they ever had a brokerage account. Those 15 respondents who answered that they never had a brokerage account were asked to describe how they made stock market investments without a brokerage account. They were also asked to describe their payment process of a hypothetical TV purchase using a dividend. We manually mapped responses to questions Q4, Q5, and Q6 if respondents simply misunderstood the term "brokerage account". If respondents actually never had a brokerage account, we excluded them. In the German translation, "brokerage account" and "brokerage cash balance" were translated to "Wertpapierdepot" and "Verrechnungskonto", respectively. Only one answer per question was allowed.

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Table E2: Survey results

	Means		Difference in means
	Brokerage cash	No brokerage cash	p-value
Panel A: Demographics			
US resident (= 1; Germany = 0)	51.9	43.5	0.20
Male	81.6	62.4	0.00***
Age (in years)	35.3	36.5	0.69
Full-time employed	60.9	48.5	0.11
Student	27.1	25.7	0.88
Panel B: Dividend uses			
Ever received a dividend	91.8	84.7	0.09*
In the week after payment, dividend recipients...			
...invested the dividend.	60.7	44.4	0.03**
...spent the dividend.	1.6	8.3	0.01**
...let the dividend sit in the bank.	37.7	47.2	0.20
Over the long run, dividend recipients...			
...invested the dividend.	79.1	66.7	0.05*
...spent the dividend.	9.4	15.3	0.19
...let the dividend sit in the bank.	11.5	18.1	0.22
Panel C: Account modalities			
Hypothetical TV purchase requires additional bank transfer	97.1	44.7	0.00***
Main bank account and brokerage account at different banks	83.7	51.8	0.00***
Primarily trade via...			
...smartphone/tablet.	48.6	37.6	0.09*
...computer.	49.5	55.3	0.44
...phone call.	1.9	2.4	1.00
...in-person meetings.	0.0	4.7	0.01***
N	208	85	

Note: This table presents mean values of survey responses separated by respondents' answer as to whether their brokerage account does or does not have its own cash balance. 300 participants (150 from Germany and 150 from the US) who reported to have made stock market investments in the past were recruited. After filtering respondents based on ever having a brokerage account and passing an attention check, 293 respondents remained. The exact wording of questions can be found in Table E1. All variables are in percentage points except where noted otherwise. P-values for differences in means of binary variables are calculated on the basis of Fisher's exact test. The p-value for the difference in means of age is calculated on the basis of a t-test. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively.

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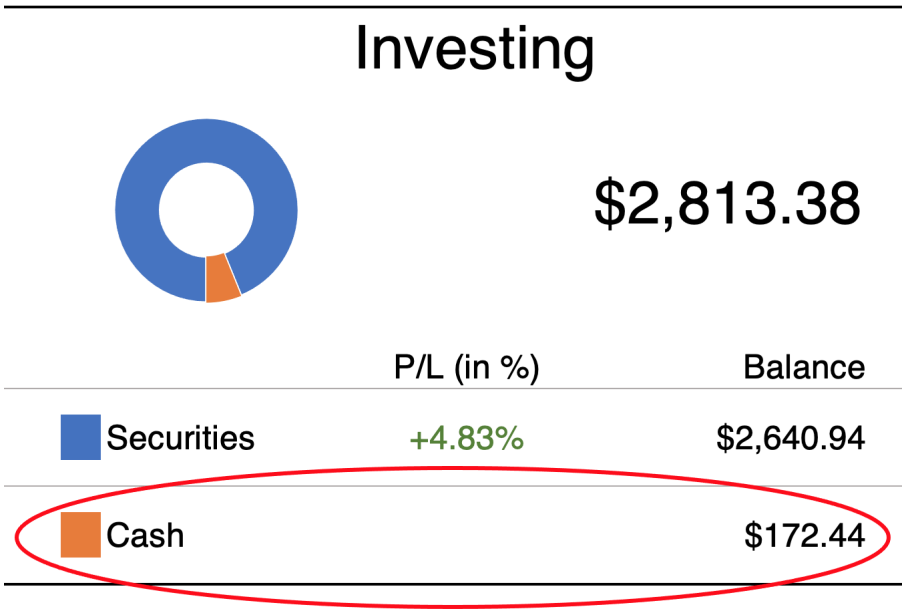
F Brokerage cash examples and an overview

Figure F1: Brokerage cash



Note: This figure shows a stylized example of brokerage cash. We define brokerage cash as a cash position that is part of the brokerage account and primarily, if not exclusively, serves as the link between an outside (reference) bank account and securities investments; that is, if the investor transfers money to his brokerage account to invest, the money is added to the brokerage cash balance. In turn, if the investor sells securities or is paid dividends, proceeds are added to his brokerage cash balance. Brokerage cash is generally not designed as a bank account through which regular payment transactions are cleared (e.g., bills are paid).

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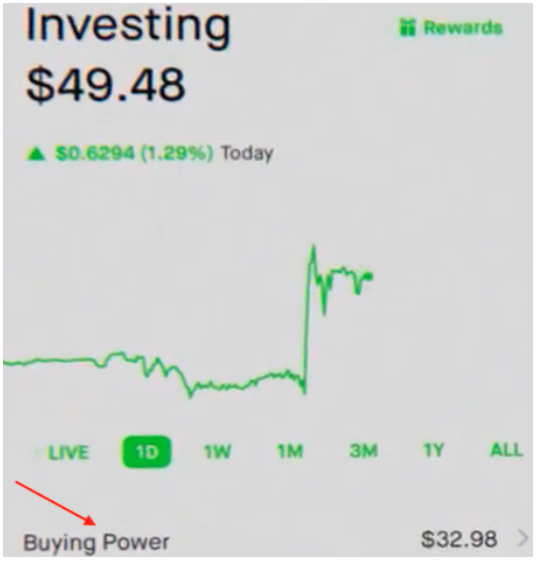
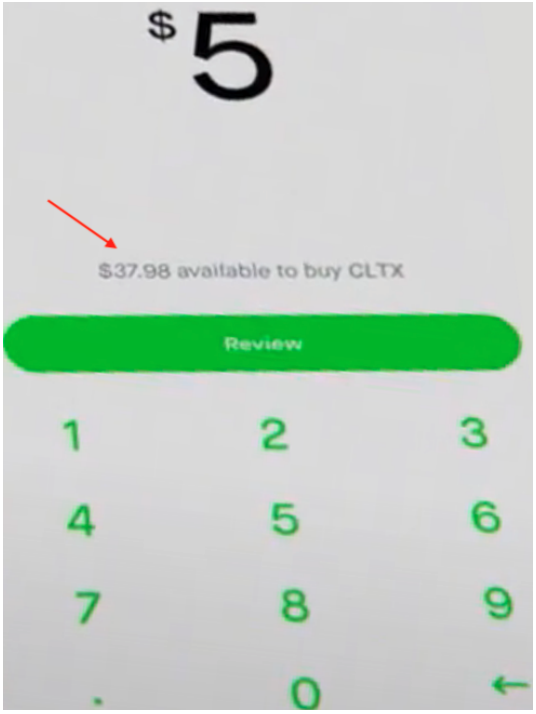
Figure F2: Brokerage cash at Robinhood

Panel A: Account summary



Panel B: Order interface



Note: This figure shows screenshots of a brokerage account at Robinhood. The red arrows highlight the brokerage cash balance, a.k.a., buying power. (Note: There may be a small difference between brokerage cash and buying power due to unsettled trades.) The screenshots capture content of the following video (as of December 17, 2022): youtube.com/watch?v=SvKbVp_7AzM.

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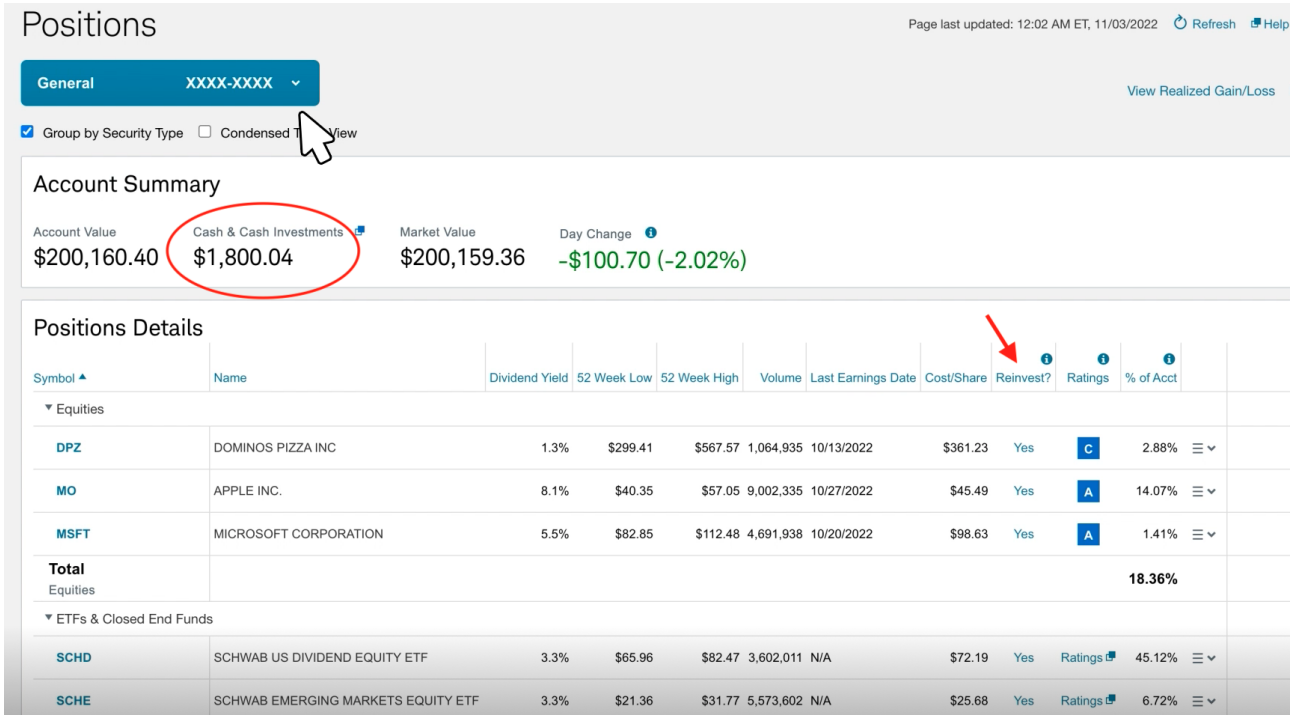
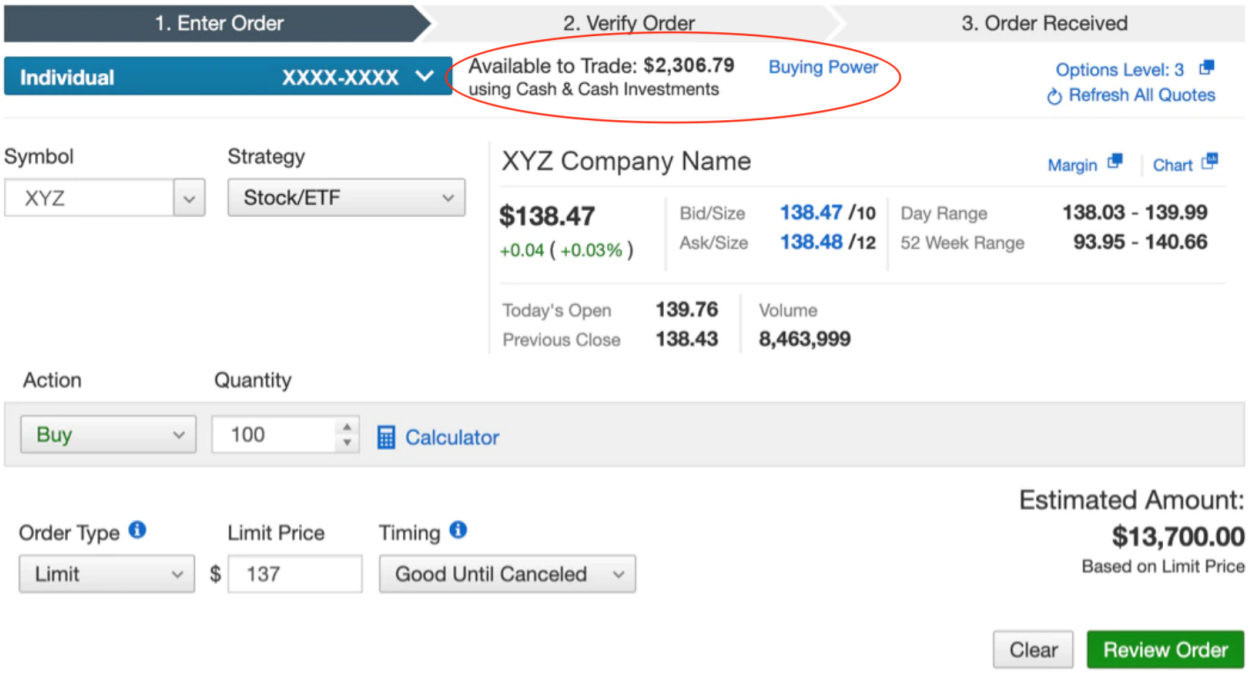
Figure F3: Brokerage cash at Charles Schwab

Panel A: Positions



Panel B: Order interface



Note: This figure shows screenshots of a brokerage account at Charles Schwab. The red circles highlight the brokerage cash balance. The red arrow in Panel A highlights an automatic dividend reinvestment feature. The screenshot in Panel A captures content of the following website (as of December 17, 2022): www.schwab.com/content/how-to-reinvest-dividends. The screenshot in Panel B captures content of the following website (as of December 17, 2022): www.schwab.com/stocks.

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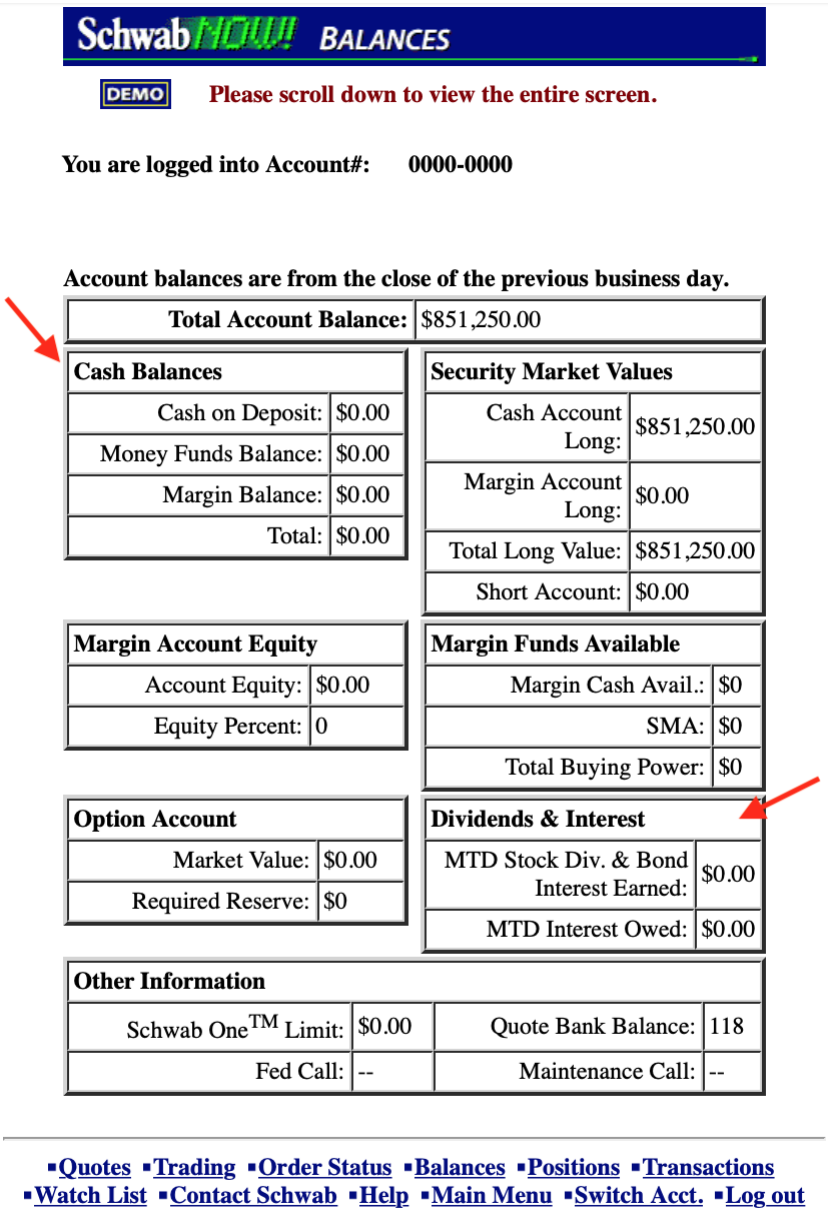
Figure F4: Demo brokerage account at Charles Schwab in 1997



Schwab NOW! BALANCES

DEMO Please scroll down to view the entire screen.

You are logged into Account#: 0000-0000

Account balances are from the close of the previous business day.

Total Account Balance:	$851,250.00

Cash Balances	
Cash on Deposit:	$0.00
Money Funds Balance:	$0.00
Margin Balance:	$0.00
Total:	$0.00

Security Market Values	
Cash Account Long:	$851,250.00
Margin Account Long:	$0.00
Total Long Value:	$851,250.00
Short Account:	$0.00

Margin Account Equity	
Account Equity:	$0.00
Equity Percent:	0

Margin Funds Available	
Margin Cash Avail.:	$0
SMA:	$0
Total Buying Power:	$0

Option Account	
Market Value:	$0.00
Required Reserve:	$0

Dividends & Interest	
MTD Stock Div. & Bond Interest Earned:	$0.00
MTD Interest Owed:	$0.00

Other Information			
Schwab One™ Limit:	$0.00	Quote Bank Balance:	118
Fed Call:	--	Maintenance Call:	--

▪Quotes ▪Trading ▪Order Status ▪Balances ▪Positions ▪Transactions
▪Watch List ▪Contact Schwab ▪Help ▪Main Menu ▪Switch Acct. ▪Log out

Copyright 1996 Charles Schwab & Co.,Inc. All rights reserved. Member SIPC/NYSE
Unauthorized access is prohibited. Usage will be monitored.

Note: This figure shows a screenshot of a demo account at Charles Schwab in 1997. The top left arrow highlights brokerage cash that is either held as bank deposits or swept in money market funds. The bottom right arrow highlights the amount of dividends received in the current month. The screenshot captures content of the following website (as of December 18, 2022): web.archive.org/web/19970108124047/schwab.com/Trading/demo/html/Start.html.

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Figure F5: Demo brokerage account at Ameritrade in 1998

Note: This figure shows a screenshot of a demo account at Ameritrade in 1998. The red arrow highlights the brokerage cash balance, a.k.a., buying power. (Note: There may be a small difference between brokerage cash and buying power due to unsettled trades.) The screenshot captures content of the following website (as of December 17, 2022): web.archive.org/web/19980211224009/http://www.ameritrade.com/demo/mainmenu_demo.html.

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Table F1: Brokerage cash at large German and US brokers

	Brokerage cash available	Possible to not have brokerage cash	Brokerage cash is default	Name for brokerage cash	Source
Panel A: German brokers					
ING	Yes	Yes	Yes	Extra-Konto	ing.de/sparen-anlegen/direkt-depot/
Comdirect	Yes	Yes	No	Verrechnungskonto	comdirect.de/depot/comdirect-depot.html
Flatex	Yes	No	Yes	Cash-Konto	flatexdegiro.com/de/flatexdegiro-bank/faqs
Trade Republic	Yes	No	Yes	Verrechnungskonto	support.traderepublic.com/de-de/27-Warum-muss-ich-Geld-einzahlen
S Broker	Yes	Yes	Yes	Verrechnungskonto	sbroker.de/82.0.html
DKB	No	Yes	No	-	bank.dkb.de/privatkunden/investieren/depot
Panel B: US brokers					
Charles Schwab	Yes	Yes	Yes	Cash & Cash Investments	schwab.com/brokerage
Fidelity	Yes	Yes	Yes	Cash (Core)	fidelity.com/trading/faqs-about-account
TD Ameritrade	Yes	Yes	Yes	Cash	tdameritrade.com/investment-products/cash-solutions.html
E-Trade	Yes	Yes	Yes	Cash	us.etrade.com/frequently-asked-questions/account-features
Robinhood	Yes	No	Yes	Brokerage Cash/ Buying Power	robinhood.com/us/en/support/articles/difference-between-cm-and-spending-account/

Note: This table provides an overview of brokerage cash at large German and US brokers. We define brokerage cash as a cash position that is part of the brokerage account and primarily, if not exclusively, serves as the link between an outside (reference) bank account and securities investments. If there are multiple types of brokerage accounts at a given broker, we provide information on that account which we deem to be a "standard brokerage account". At DKB, if you open a brokerage account, you have to open a checking account which is then used for settling investment-related transactions. At US brokers, brokerage cash is often swept into money market funds. At US brokers, clients can often apply for cash management features such as credit/debit cards, check writing, and bill paying (usually not enabled by default). If such features are available, we put "Yes" in the column "Possible to not have brokerage cash" (with such features enabled, the cash position no longer fulfills our definition of brokerage cash). If such features are not enabled by default, we put "Yes" in the column "Brokerage cash is default". Robinhood no longer offers cash management features for brokerage accounts but offers a separate "spending account" with cash management features. Robinhood clients that have both, a brokerage account and a spending account, have two separate cash balances with cash management features being limited to the spending account. All information is based on internet research as of December 17, 2022.

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G Uses of interest payments on brokerage cash

G.1 Uses of interest payments on brokerage cash

Investors in our sample earn interest on their brokerage cash balances. Interest payments are made annually, on December 31 of each year. Although interest payments are not the main subject of our empirical inquiry, it may be interesting to see how estimates of their uses line up with those of dividend payments. Table G1 reports the results. We estimate that 26% of interest payments remain as brokerage cash, 26% are withdrawn from brokerage accounts, 5% are invested in CDs, and 43% are invested in securities after a full year. We believe that these estimates and their differences to estimates for dividends mostly reflect the specific behavior of investors that receive large interest payments relative to their securities portfolio value. Because we scale interest payments by investors' securities portfolio value, investors who receive larger interest payments (scaled by portfolio value) have larger cash balances relative to their securities holdings. This means that those investors who receive the largest (scaled) interest payments are those that have the smallest allocations to securities relative to their cash balances. These smaller overall allocations to securities may explain why the ratio of securities investments to withdrawals of interest payments is smaller than the ratio of securities investments to withdrawals of dividends. Moreover, we suggest that the larger share of interest payments that remains as brokerage cash is mostly driven by a mechanical selection of investors that leave more money as brokerage cash to be the ones that receive larger interest payments on brokerage cash. If an investor retains more money as brokerage cash, he receives more interest on brokerage cash. Thus, knowing that an investor receives more interest on his brokerage cash, it is likely that he retains more money as brokerage cash.

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Table G1: Uses of interest payments on brokerage cash

	Uses				Purchases and sales		P.withd.
	CshInc_t	AccWd_t	CdInv_t	Inv_t	Prch_t	Sls_t	PfWd_t
I_t	0.89***	0.09***	0.01	0.01	-0.04	-0.05***	-0.01
	(0.04)	(0.03)	(0.01)	(0.06)	(0.05)	(0.01)	(0.06)
I_{t-1}	-0.07	0.01	0.02	0.05	0.03***	-0.02	-0.05
	(0.06)	(0.03)	(0.01)	(0.03)	(0.01)	(0.03)	(0.03)
I_{t-2}	-0.04	0.01	0.01*	0.02	0.02**	0.01	-0.02
	(0.06)	(0.05)	(0.00)	(0.02)	(0.01)	(0.01)	(0.02)
I_{t-3}	-0.16***	0.11***	-0.01	0.05***	0.03*	-0.02	-0.05***
	(0.02)	(0.03)	(0.01)	(0.02)	(0.01)	(0.02)	(0.01)
I_{t-4}	0.00	-0.02	0.00	0.02	0.01	0.00	-0.02
	(0.03)	(0.03)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)
I_{t-5}	-0.01	0.00	-0.01*	0.03**	0.01	-0.02	-0.03
	(0.04)	(0.03)	(0.01)	(0.02)	(0.01)	(0.02)	(0.02)
I_{t-6}	-0.07***	0.05**	0.00	0.02	0.02	0.00	-0.02
	(0.03)	(0.02)	(0.01)	(0.02)	(0.02)	(0.01)	(0.02)
I_{t-7}	-0.03	-0.02	-0.01	0.06***	0.02**	-0.03***	-0.06***
	(0.03)	(0.03)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
I_{t-8}	-0.07**	0.00	0.02	0.05***	0.03**	-0.01	-0.05***
	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)	(0.01)	(0.02)
I_{t-9}	-0.16***	0.08**	0.01**	0.06***	0.03**	-0.03***	-0.06***
	(0.04)	(0.04)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
I_{t-10}	-0.02	-0.05***	0.02**	0.05*	0.01	-0.03*	-0.05*
	(0.04)	(0.02)	(0.01)	(0.03)	(0.02)	(0.02)	(0.03)
I_{t-11}	0.00	0.00	-0.01**	0.02	-0.01	-0.02**	-0.01
	(0.02)	(0.04)	(0.00)	(0.02)	(0.02)	(0.01)	(0.02)
Sum	0.26	0.26	0.05	0.43	0.15	-0.23	-0.43

Note: This table shows the results of regressions of the different uses of interest payments on contemporaneous and lagged interest payments that investors receive on their brokerage cash balances. Each cell corresponds to the results of one regression. For the results in the first row, the different uses are regressed on contemporaneous interest payments. For the results in all other rows, the different uses are regressed on contemporaneous interest payments and one lag of interest payments, which is indicated by row name. In these rows, only the coefficient for the lag is reported. CshInc stands for net brokerage cash increases, AccWd for net brokerage account withdrawals, CdInv for net CD investments, Inv for net securities investments, Prch for securities purchases, Sls for securities sales, and PfWd for net portfolio withdrawals. All regressions include investor and time fixed effects. Standard errors are clustered by investor and time period and are reported in parentheses. ***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. For all regressions, N = 278,771, except for regressions of purchases and sales, where N = 276,829.

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