

SAME BANKS AND SAME CLIENTS BUT DIFFERENT PRICING: HOW DO FLAT-FEES FOR MUTUAL FUNDS AFFECT RETAIL INVESTORS?



Technical Report

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**THINK
FORWARD** INITIATIVE

SAME BANKS AND SAME CLIENTS BUT DIFFERENT PRICING: HOW DO FLAT-FEES FOR MUTUAL FUNDS AFFECT RETAIL INVESTORS? *

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Abstract

Using a field experiment at a German online brokerage, we investigate the effects of a flat-fee scheme versus a commission-based scheme for investments in mutual funds on the behaviour and outcomes of advised individual investors. In a difference-in-differences setting, we compare 699 clients that switched to the flat -fee scheme to one-on-one propensity-score-matched clients in the commission-based scheme. Flat fee switchers respond by improving portfolio efficiency through higher fund shares. Efficiency gains are not driven by potential cost savings for trading and holding mutual funds but by seeking and following financial advice more often. We find evidence that flat rates enhance the perceived quality of financial advice.

Keywords: Household finance; Individual investor; Pricing scheme; Financial advice; Inducements; Consumer financial protection

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1. Introduction

Financial advisors should help their clients to find optimal investment products depending on their personal financial situation and preferences. However, when using investment accounts based on commission-based schemes, the incentives of financial advisors and private investors might not necessarily be aligned.²

To curb the risk of a potential mis-selling and to protect private investors, regulators have reacted either by improving the information flow between the product provider and private investor or – like in the US and in the Netherlands - by banning sales commissions altogether. Whereas such interventions on the supply side have received a lot of attention, the effects on the demand side – the private investors – has not been researched.

Do private investors change their behavior in response to commission bans when holding all bank services, especially the financial advice, constant? Does simply changing the way of how private investors pay for financial products affect the perception of (unchanged) financial advice? Do they benefit from flat-rates for financial products rather than from commission-based schemes by improving their portfolio efficiency?

We make use of a unique field experiment in Germany to address these questions. In September 2009, a large online bank operating in the German market was among the first banks to introduce a flat-fee scheme for trading and holding mutual funds. The flat-fee scheme runs in parallel with the bank's traditional commission-based scheme and,

importantly, the scope and quality of all services offered to clients as well as support functions are identical in both schemes. We scrutinize how clients change their investment behavior (relative to a control group) after switching into the flat-fee scheme.

When choosing the flat-fee scheme, clients pay a quarterly fee in proportion to the average value of their total portfolio holdings, including stocks, bonds, funds, etc. The fees sum up to 0.7% to 1.0% p.a. (per annum) depending on portfolio size. In exchange, front loads for mutual funds are waived, and any kickbacks that the bank receives from asset management (fund management) companies are reimbursed to the client. Under the traditional commission-based scheme, which is still the standard model used at most banks in continental Europe in general and Germany in particular, clients pay front loads to the bank when purchasing mutual funds (on average, 2.0%. The average for the 25th percentile is 1.2% and for the 75th percentile, 2.6%) and the annual fund management expenses of which kickbacks are a part. Consequently, the cost differential between the two schemes is a function of the fund share and fund turnover (trading volume and purchasing costs).³ The flat-fee scheme is voluntary and offered to all clients of the bank via e-mail and the bank's website.

All clients, irrespective of whether they opt for the flat-fee scheme or the commission-based scheme, may consult with a team of professional financial advisors at no extra cost over the phone. All advisors are trained bank clerks, who are employed by the bank

² Inderst & Ottaviani, 2009; Inderst & Ottaviani, 2012a; Inderst & Ottaviani, 2012b; Inderst & Ottaviani, 2012c; Stoughton, Wu, & Zechner, 2011; Bolton, Freixas, & Shapiro, 2007; Bergstresser, Chalmers, & Tufano, 2008.

³ The flat-fee scheme is relatively more attractive when both the turnover in mutual funds and the mutual fund share are

higher. It is constructed by the bank to be cost effective for approximately half of the clients based on their trading behavior over the previous twelve months. This also holds for our sample. Cost effective indicates that clients reduce their overall trading costs by switching to the flat-fee scheme based on their trading decisions in the previous 12 months.

on a fixed-salary contract. The advisors are randomly assigned to clients on a call-by-call basis regardless of the client or pricing scheme. The advisors mainly aid clients in selecting mutual funds from the universe of funds available on the German retail market. The bank's central investment committee provides advisors with a list of mutual funds from all fund categories that advisors are supposed to prioritize in their recommendations.⁴ Advisors remain free to discuss all types of investment products on clients' request. We find that advisors recommend products with the same characteristics to clients under the flat-fee scheme and under the commission-based scheme. This holds at any given point in time as well as for all adopters (=switchers) before and after the switch.

The bank's data we analyze contain de-identified records from 9,543 randomly selected clients in Germany who consulted the advisory team at least once during the sample period and for which demographic and portfolio data are available. The sample period ranges from January 2008 to December 2015. Client records contain socio-demographic information, full trading history, portfolio holdings at month end, all transactions on savings and checking accounts (date and value in euros), and detailed information on any advisory meeting. The information on advisory meetings includes date and time, as well as the International Securities Identification Numbers (ISINs) of all products recommended by the advisor. Additionally, we have details on all fee payments from the clients to the bank and any kickbacks repaid by the bank to the clients as part of the new flat-fee scheme. All sample clients have unrestricted access to the new flat-fee scheme, which was advertised prominently on the

main website of the bank and which was subject to multiple mailing campaigns. Over our sample period, 1,034 existing clients adopted the new scheme. Of these, 699 had been taking advice in the past and 335 had been trading self-directedly before. This latter number compares to 1,380 investors who started using the brokerage's advisory services during the same period but remained under the conventional commission-based scheme after becoming an advisory client.⁵ We focus on the 699 clients who used financial advice before, as we are interested in the effect of the adoption of the flat-fee scheme rather than in the effects of the adoption of financial advice itself. This avoids the endogeneity of whether people use or do not use financial advice. We find that clients with a higher portfolio value, larger fund shares, and better portfolio efficiency (diversification and performance) are more likely to opt in for the flat-fee scheme. Thus, clients choosing the flat-fee scheme seem to be more financially sophisticated than their peers, who continue to take advice under the commission-based scheme.

To identify the effects of the introduction of the flat-fee scheme and to overcome potential issues of self-selection we use a difference-in-differences approach that compares the 699 switchers to the new flat-fee scheme to a control group of propensity-score-matched clients. The control group before matching consists of 7,828 clients who continue trading and taking advice under the commission-based scheme.⁶ This approach leverages the fact that both compensation schemes run in parallel and that clients switch at different points in time. For the difference-in-differences approach to work, common trends in treatment and control group before the

⁴ Our cross-sectional regression analysis shows that the funds on the recommendation list are characterized by larger fund volumes, exhibit better historical performance, and have higher front-end loads than their respective non-recommended funds. We document the analysis in the Internet appendix in tables A.I. to A.III. The bank does not produce mutual funds. Additionally, operating an open architecture provides all funds with a comparable a priori likelihood of being on the list.

⁵ We exclude clients that are new clients of the bank and that switch into or directly start in the flat-fee scheme from

our analysis as we need to observe clients before they start the flat-fee scheme.

⁶ For the analysis of a potential novelty effect we also analyze an additional set of 335 clients who are first time users of financial advice under the flat-fee scheme. We match those clients to the 1,380 clients (which are not part of the 7,828) who are first time users of financial advice under the commission-based scheme during the sample period.

treatment are essential (Roberts & Whited, 2013).⁷ In order to establish these common trends, we alleviate the effects of self-selection and employ a propensity-score matching of clients based on socio-demographics, past investment and trading behavior, and differences in asset allocation as inputs. All inputs are measured at the end of August 2009, the last month before the bank first offered the flat-fee scheme. This approach follows Roberts and Whited (2013) as well as Lemmon and Roberts (2010) and ensures all matching variables are unaffected by the treatment. We also include outcome variables like portfolio value, mutual fund share or number of contacts with an advisor prior to the introduction of the flat-fee scheme to follow the general guideline by Heckman et al. (1998) stating that a rich set of variables is needed in order to have a low bias.

The matching process creates two groups for which we find common trends on the key outcome variables before the switch. In our setting investors and matched controls switch at different points. Therefore, we effectively work with multiple treatment and control groups, as people matched based on August 2009 data may have their individual switching date years later. Thus, our results do not depend on a single event date with potential non-standard economic environments. Our setting furthermore allows to address the issues of unobservable factors in the switching decision in several dimensions. First, we work with investor fixed-effects, which mute all issues stemming from individuals that are time-invariant, and later, in the robustness section, with investor and time-fixed effects, which should mute effects of particular points in time like public opinions or sentiment. Furthermore, we use double-clustered standard errors on the portfolio ID and month-by-year to account for serial and cross correlation. For robustness we run a falsification tests, in which we document no effects for a placebo test, no effects through variations of the control groups (early vs. late

adopters and first time advised clients under the flat-fee scheme vs. the commission-based scheme) and the same effects in a similar setting in a brick-and-mortar bank.

Our difference-in-differences analysis documents an immediate reaction by those who switch. We show that switching to the flat rate scheme accompanies an 18 percentage points (pp) increase in the share of mutual funds in investor portfolios and with a fourfold increase in the number of client-advisor contacts. Additionally, the average portfolio value increases by 30,774 euros, and the average portfolio performance, as measured by risk-adjusted gross returns using 4-factor alphas (ignoring potential cost savings coming from the fee or the commission-based scheme), improves by 3.5% p.a. in the three years after the switch. This holds when we alternatively use international factor from the website of Kenneth French.

The difference-in-differences analysis establishes only the causality between the flat-fee scheme and a change in investment behavior. Next, we discuss potential economic mechanisms for this change in behavior. We show that the increase in fund shares stems from the intensified use of advice and not from a spike in self-directed (mutual fund) trades. This makes the usage of the flat-fee scheme for simply reaping cost savings less likely. By analyzing the probability of following received financial advice, we show that flat-fee scheme clients are approximately 40% more likely to follow an advisor's recommendation in comparison with both the control group and their own previous behavior. A recommendation-by-recommendation analysis of the advisor recommendations shows that switching clients increase their following of advisor recommendations, especially regarding actively managed funds in more informationally distant, international regions.

⁷ We also run a placebo test and find no effects of an artificial switching date prior to the actual switch. This provides additional support for the assumption of unconfoundedness.

These effects might be due to the fact that clients who self-select in the flat-fee scheme have decided to consult the advisory service more and might be willing to follow the advisory service more closely. Alternatively, it might be because they decided to invest more in mutual funds for which it might be useful to contact the advisory service. A third explanation is that clients might believe that they are receiving better advice for paying in a different way and trust their advisor more which is in line with the increase in following in more complex and international products. While all three explanations are reasonable, all of them are only caused by the introduction of the flat-fee scheme which allows clients to reap these benefits. Using the results of an online survey with a subsample of 826 clients, we find supporting evidence for the latter explanation. Respondents perceive the advice under the flat-fee scheme as being of a higher quality than that under the commission-based scheme. They associate the flat-fee scheme at the bank with fairer and better advisor recommendations and feel more confident in investing in international capital markets. Thus, clients seem to trust the (unchanged) financial advice a whole lot more under the flat-fee scheme. This might be explained by the perceived lower risk of advisor misconduct when advisors do not earn a commission with each product sold. Our findings are in line with the model by Gennaioli, Shleifer, and Vishny (2015), who show that asset-allocation decisions are mediated by clients' trust in financial advisors. In contrast to our focus on the clients' reactions towards a different pricing scheme, their model focuses on the effect of clients' trust and the reaction of their financial advisors.

A competing explanation for why switchers increase their fund share relates to the sunk-cost fallacy phenomenon, i.e., the tendency that costs paid in the past influence the decision making of today (Arkes & Blumer, 1985). If switchers were confronted with the fact that the flat rate scheme actually implied higher total investment cost for their current trading strategy than the former pricing scheme did, they might be

tempted to adjust that trading strategy so the cost advantage would bend towards the flat rate. One way clients could perform this action would be by increasing their holdings of mutual funds with high front-end loads and high expense ratios. We do not find any support for that competing explanation. Additionally, we rule out that our results could also be at least partially driven by novelty effects, according to which switchers trade more in mutual funds due to a desire to explore the flat-fee scheme and the corresponding higher attention to trading gained by the switch in comparison to non-switchers for whom these triggers do not exist. To test for this effect, we repeat our main analyses, but we now compare newly advised clients under the inducement and flat-fee schemes. Newly advised clients are clients who use financial advice for the first time after the flat-fee scheme had been made available. Consequently, we also rule out novelty effects as an explanation for our results.

To ensure the robustness of our results, we run several tests. First, we compare the change in behavior of early switchers to that of clients who have not yet switched. Second, and despite the fact that advisors are randomly assigned to clients, we run specifications in which we control for advisor fixed effects using the advisor a client talks to most often. Moreover, we include month fixed effects, and restrict the analysis to clients who use the brokerage as their main bank. We define main banking clients as those who receive their salary to our bank. Our results are robust with respect to all of these alternative specifications.

Finally, we extend our study to within-sample and across different sample analyses. For within-sample tests, we re-use the probit specification explaining who switches and split our sample at the median switching probability. We find that clients, even if they were predicted to be less likely to switch to the flat-fee scheme, improve portfolio efficiency and have more advisory contacts. This shows that the beneficial change in behavior also occurs for clients

which are less likely to switch. Additionally, we replicate our analysis using data from the implementation of a comparable flat rate-pricing scheme alongside a classical inducement based-pricing scheme at a large German branch bank in July 2013. We also find an increase in portfolio values and an increase in fund shares. As the use of advice is much more pervasive among clients in the second bank (almost all of the bank's clients participating in the stock market are advised), it shows additional supporting evidence for our finding that clients use financial advice differently under an alternative pricing scheme. Furthermore, this shows that our results are transferable to the broader population of retail investors.

Our study contributes to the stream of literature on financial advice. Recent studies have shown that financial advisors affect the behavior of individual investors on average (Hackethal, Haliassos, & Jappelli, 2012; Hoechle, Ruenzi, Schaub, & Schmid, 2018; Stolper & Walter, 2018; Linnainmaa, Melzer, & Previtero, 2018) but that brokers charge mark-ups and sell structured retail products for which clearly better alternatives exist (C el erier & Vall e, 2017; Egan, 2019), repeatedly commit misconduct (Egan, Matvos, & Seru, 2017a; Egan, Matvos, & Seru, 2017b), and fail to cure client biases (Mullainathan, Noeth & Schoar, 2012). These studies focus on the quality or take up of financial advice, the misconduct of advisors, or their capability and willingness to cure clients' biases. In contrast and adding to the overall picture of financial advice, we focus solely on customer reactions. Gaudecker (2015), using a Dutch household survey, shows that advised clients hold better diversified investment portfolios due to a higher fund share. We add to this study by showing that the way of how to pay for mutual fund transactions is an additional factor to promoting the portfolio diversification within advised clients.

Our focus on the client's side adds to the general picture of financial advice by showing that changing the way of how to pay for financial services changes the usage and following of financial advice although the availability and particularities of financial advice itself do not change. These findings especially contribute to Bhattacharya, Hackethal, Kaesler, Loos, and Meyer (2012), who show that financial advice, even if it was unbiased and inexpensive, was hardly taken up or followed by brokerage clients who would have benefited from it. Our paper is different in two ways. While Bhattacharya et al. (2012) focus on the reactions of clients after taking up of financial advice but do not provide an economic mechanism for this phenomenon, our paper compares the reactions of already advised clients in different pricing schemes. Furthermore, they show that clients hardly follow financial advice. We show that flat-fee schemes contribute to people following and benefitting from that advice. Note that the initial following with 15% in our sample is highly comparable to Bhattacharya et al. (2012). The switch to the flat-fee scheme then leads to an increase in following to more than 60% in all subsequent advisory talks underscoring the important role of payment schemes for financial advice may play.

All in all, our results show that simply changing pricing schemes to no-commission alternatives for financial products could be a powerful instrument in improving financial wellbeing of private investors. Thus, our study also informs financial institutions and policy makers by showing that motivating private investors to use flat-rate services or offering other no-commission alternatives could improve their portfolio efficiency and trust in received financial advice.⁸ Thereby, we also contribute to the stream of literature concerning the evaluation of various policy responses in regulating consumer financial products and services (Agarwal, Driscoll, Gabaix, & Laibson, 2009; Agarwal, Chomsisengphet, Mahoney, &

⁸ Thus far, regulators have mainly focused on financial advice. The United Kingdom (e.g., McMeel, 2013) and the Netherlands completely banned commission-based financial advice, while Australia and the US have responded

by mandating advisors adhere to a fiduciary duty. The European Union requirements include the Markets in Financial Instruments Directive that advocate greater transparency and documentation.

Stroebe, 2014; Campbell, 2006; Campbell et al., 2011; Thaler & Benartzi, 2004) as well as to the effectiveness of default options (e.g., Beshears, Choi, Laibson, & Madrian, 2009).

2. The field study & data

2.1 The field study

2.1.1 Overview

The German online bank with a focus on brokerage services offers the complete range of retail financial products—including online trading, current accounts, savings products, retirement solutions, and consumer credits—to its several hundred thousand retail clients. The bank does not produce financial products or mutual funds on its own but instead runs an open architecture in selling and advising on mutual funds from all asset management firms available on the German retail market. Most trades clients make are self-directed. Financial advice is offered independently and at no extra cost to all clients. In addition to the traditional commission-based scheme, the bank offered a flat rate for mutual fund trading without charging front-end loads and while charging almost no management fees. The new “flat-fee scheme” (from September 2009 onwards) charges clients based on the average value of their portfolios over the previous quarter (between 0.7 and 0.9%). The content and scope of financial advice is not changed during the introduction of the flat-fee scheme, hence, it is the same for all clients independent of the chosen pricing scheme. Overall, 1,034 clients of 55,551 opt for the flat-fee scheme, of which 699 had previously received financial advice and 335 had not. In addition, 1,380 investors started to use financial advice under the commission-based scheme.

2.1.2 Advisory services

Financial investment advice began to be offered in July 2005 and is only available by phone for investments and not for consumer loans or mortgages. The financial advisory services are provided by trained bank clerks in specialized call centers located in Germany. These bank clerks have all completed a three-year vocational training.⁹ The bank hires trained bank clerks as full-time employees, and their salary is defined by the collective wage agreement for the banking industry, which, for financial advisors, is an annual gross salary of 30,000 to 45,000 euros, depending on experience. The variable payment¹⁰ to financial advisors is based on the success of the entire bank and that of the relevant division, and it must not exceed one monthly gross salary per year. Therefore, variable financial incentives play a minor role for financial advisors employed by our bank.¹¹

The bank employs a central research unit to create a list of recommended products for both advisors and clients. For the recommendation list, the research unit considers only delegated financial products. It gives preference to mutual funds, but index funds, exchange traded funds (ETFs) and basket certificates may occasionally be part of the list. The resulting recommendation list is reviewed monthly. The recommendation list is the basis for financial advice but can also be viewed by all clients when they have logged into their brokerage account. Advisors discuss products not on the recommendation list only on client request. We provide the details on the

⁹ The vocational training for bank clerks in Germany includes extensive on-the-job training in various departments at banks such as serving as client advisor on investments and credit, performing teller functions, and managing back-office responsibilities. During the vocational training, trainees spend two days per week at a vocational school and take classes on financial mathematics, finance, accounting, financial markets and products as well as regulations and legal issues.

¹⁰ As outlined by Hoechle et al. (2018), incentives affect advisor behavior.

¹¹ In line with this notion of weak-powered incentives, changing the performance metric on which the individual variable pay is based by the bank from portfolio turnover to assets under management on January 1, 2011, had no effect on advisors' turnover with clients. This result holds in unreported analyses we run and is confirmed by bank officials who closely monitored advisors during the period in which variable pay was based on turnover and the flat-fee scheme was already made available in September 2009 to avoid gaming by the advisors.

financial advice in the Internet appendix A.I. in tables A.I. to A.III. The bank does not produce mutual funds. Therefore, the bank operates an open architecture, which considers all available funds as candidates for the recommendation list.

No model portfolios cater to different risk aversions. Instead, the asset allocation and the choice of a financial product are determined during the interaction of the advisor and the client and mainly depend on self-reported risk aversion by the client in the know-your-customer (KYC) documentation. Financial advice is always free for the clients because the initial charges and management fees do not differ between advised and self-directed trades.

2.1.3 Details on the introduction of the additional pricing scheme

The bank has traditionally used a commission-based pricing scheme for its fund brokerage services, which continues to be the standard in most bank-client relationships in continental Europe in general and in Germany in particular. Clients pay front loads (at this bank, an average of 2.0% and the average for the 25th percentile is 1.2% and for the 75th percentile, 2.6%) and annual management fees when purchasing and holding mutual funds. Such management fees include kickbacks from the fund management company to the bank. Clients receive a receipt for every security purchase detailing the value, the instrument, the exchange, the purchase price, and all costs related to that purchase. We label this pricing scheme as the commission-based scheme.

In September 2009, our sample bank was one of the first in Germany to introduce a flat-fee scheme in

parallel to this commission-based scheme as a general offer to all clients. Our dataset contains the information about when clients first pay for the flat-fee scheme, which also allows us to derive the start of the quarter in which the switch occurred.

Customers opting into the flat-fee scheme pay a percentage of their average quarterly portfolio value (ranging from 1% to 0.7% per annum for portfolio values under €100k and over €500k, respectively). The bank opts to charge a percentage fee instead of a fixed fee per hour or counselling session to curb the risk of attracting only richer clients. In return for paying the fee, front-end loads on mutual fund purchases are waived, and the bank reimburses all kickbacks they received at the end of each quarter. Kickbacks are initially part of the management fee of the fund. Thus, the cost of holding a fund is the difference between the management fee and the reimbursed kickback. These benefits apply to all mutual fund purchases and holdings of a flat-fee scheme client and not only to mutual funds recommended by the bank or the advisor. Thus, for reaping the savings of mutual funds trading, flat-fee scheme clients are free to act self-directedly or to call an advisor.¹² Additionally, financial advice is based on the same recommendation list for all clients and is offered free and independently of the choice of the pricing scheme. Empirically we find no differences in the recommendations under the flat-fee scheme or the commission-based scheme.¹³ The pricing for all other products and services remains unchanged.

The bank marketed the new flat-fee scheme via its webpage with numerical examples. Furthermore, all clients received an e-mail on the alternative pricing model when it became available. Additionally, purely technical and processual support is available via

¹² We provide an illustrative cost-benefit analysis for two hypothetical clients A and B in Figure A.II. in the Internet appendix. The fund share as a percentage of total portfolio value is illustrated on the x-axis, the costs and benefits of using the flat-fee scheme in euros is illustrated on the y-axis, and the monthly turnover in mutual funds is shown on the z-axis. The costs and benefits of the flat-fee scheme are calculated as the costs for trading securities under the commission-based scheme minus trading securities under the flat-fee scheme. This cost-benefit analysis shows that

clients benefit from switching into the flat-fee scheme when they have, e.g., a mutual fund share above 50% and monthly turnovers above 5%.

¹³ We provide the analyses on the purchase recommendations before and after the switch, summary statistics of recommended and not-recommended funds, and characteristics of recommended funds in table A.I. to A.III. as well as a discussion of the results in A.I. in the Internet appendix.

telephone through which clients can be informed about the particularities of the flat-fee scheme.¹⁴ Therefore, it is unlikely that clients are unaware of or do not understand the new pricing scheme. However, the commission-based scheme is the default scheme for everyone since there are no recurring charges, whereas the flat-fee scheme requires the client's action. Signing up for or changing to the flat-fee scheme requires additionally subscribing by entering a 6-digit transaction number (TAN) (approximately 5 minutes of effort).

2.2 Data and characteristics of flat-fee scheme clients

2.2.1 Investor data

We obtained pseudonymized records on a randomly chosen subset of 113,000 investors for the period from 2008 to 2015. The data comprises socio-demographic information, time-stamped security transactions, and monthly portfolio holdings. We also have transactions on liquidity accounts and balances as well as a file outlining whether a client has received financial advice and how often clients and their advisors have interacted. The information on the advisory meetings includes purchase recommendations, the date of the recommendation, and the product recommended as identified by the ISIN. Here, we analyze purchase recommendations only for two reasons. First, switching pricing schemes affects only the cost of purchase transactions as selling is always free. Second, sell recommendations are path dependent because they are subject to the existing portfolio of the client and therefore bias our assessment of what has changed due to the introduction of the flat-fee scheme. We are also equipped with a file that shows the payment of fees to the bank as well as kickbacks paid to the clients. The file containing fees paid allows us to identify when clients switched to the flat-fee scheme.

We received 113,000 client IDs from the bank. Our sample was reduced to approximately 80,000 investors when we combined these IDs with socio-demographic data and selected the clients that fulfilled the following characteristics: had a private account (non-institutional clients), were alive, and were above the age of 18 and had, for at least 5 years, a securities portfolio during the period between 2007 and the end of the sample. In addition, to measure the effects of the introduction of the flat-fee scheme, we need the clients to be active around the time of its introduction. To do so, we require clients to have a portfolio for at least 200 days over the period between September 2008 and September 2009, the year before the introduction of the flat-fee scheme. For some of these clients, additional demographic variables are missing because they are not mandatorily reported. This is the case for employment status, for example. Of the remaining 55,551 clients, we restrict our analyses to the 9,543 clients that are advised within our observation period. We exclude non-advised clients as we are interested in the effects of alternative pricing schemes in the advisory context. The analysis of the effects of pricing schemes on self-directed clients may be subject to future research. Of these 55,551 clients, 7,828 clients are advised under the commission-based scheme and 1,034 are advised under the flat-fee scheme. Of the 1,034 clients adopting the flat-fee scheme, 699 had been taking advice in the past (switchers) and 335 had been trading self-directedly before (new fee). This latter number compares to 1,380 investors who started using the brokerage's advisory services during the same period but remained under the conventional commission-based scheme after becoming an advisory client.¹⁵ We focus on the 699 clients who used financial advice before, as we are interested in the effect of the adoption of the flat-fee scheme rather than in the effects of the adoption of financial advice itself. This avoids the endogeneity of whether people use or do not use financial advice.

¹⁴ Note that the bank has not called certain clients to explicitly offer them the flat-fee scheme.

¹⁵ We exclude clients that are new clients of the bank and that switch into or directly start in the flat-fee scheme from

our analysis as we need to observe clients before they start the flat-fee scheme.

Nevertheless, we run analyses with the new flat fee clients and clients newly started under the commission-based scheme to rule out novelty effects. The groups of investors are described in table 1 (column 1): the average advised client under the commission-based scheme is 55 years old, married (64%), male (86%), German resident (97%) and has been a client of the bank for 15 years. Most investors work as employees (46%), whereas 17% are retired. The average investor has a risk aversion of 3.84, which is measured on a scale from 1 (indicating high risk aversion) to 5 (indicating low risk aversion).¹⁶ Brokerage clients are expected to be (Cole, Paulson & Shastry, 2014) and are actually more sophisticated than the overall population (Dorn & Huberman, 2005). Therefore, it is not surprising that 7% of our investors hold a doctoral degree. This value is higher than that of the German population (1.1%, German Federal Bureau of Statistics, 2011). These descriptive statistics are highly comparable to those reported in household finance studies based on US data (e.g., Odean, 1998; Barber & Odean, 2001).

The average (median) advised client under the commission-based scheme holds a portfolio value of 60,307 (34,939) euros and has a monthly portfolio turnover of 5.1% (1.4%). The portfolio of the average advised client under the commission-based scheme consists of 34% individual stocks and 49% actively managed funds. The average investor's actively managed funds are 74% equity, which is mainly focused on Germany (30%), Europe (17%), and

multinational (27%). The portfolio of the average investor over the period from January 2003 to September 2009 has an unsystematic variance share of 34% and receives and generates a portfolio performance of -3.2% per annum (4-factor alpha). Clients that switch into the flat-fee scheme are comparable in terms of socio-demographic characteristics to clients who remain in the commission-based scheme. The most important difference are that switchers have higher portfolio values of on average 85,063 (versus 60,307), have lower portfolio turnovers (3.09 versus 5.1), pay more trading fees, and have a higher fund share (65.5% versus 49.3%) with a more multinational focus (40.9% versus 26.7%).¹⁷ The numbers for our advised clients are in line with findings in previous research on the performance of private investors in Germany and the US (e.g., Barber & Odean, 2000; Bhattacharya et al., 2012; Bhattacharya, Loos, Meyer, & Hackethal, 2017). Of course, stock market participants are different from the average German citizen, because participation is well below 50%.

[Insert Table 1 about here]

Investor brokerage data based on administrative data are usually subject to the concern that they observe only play money accounts. To address this concern, we compare average portfolio values to official statistics. Deutsche Bundesbank (2014) reports an average portfolio value of a German stock market investor that is roughly of the same magnitude as the average portfolio value in our sample, which

¹⁶ The German Security Trading Act makes it mandatory for financial institutions to inform investors about the respective risk level of each asset classified by a risk class ranging from less risky to very risky. Consistent with these guidelines the bank uses risk classes for all securities on a five-point scale and makes this information salient to investors before they can buy the respective security. Thus, the risk perception of the investors regarding an asset's risk level very likely depends on this risk class. Note that investments in international stocks are classified as at least risk class 4. Thus, each internationally diversified mutual fund containing equity is classified as risk class 4 or 5. In detail, risk class 1 includes assets such as German government bonds, 3-year (or less) government bonds of other euro countries or money market bonds. Risk class 2 includes assets such as 3- to 10-year government bonds of other euro countries, pension funds or open property funds.

Risk class 3 includes assets such as German or European large cap stocks, stock funds, mixed mutual funds, DAX or EUROSTOXX certificates, bonds of noneuro issuers or 10-year (or less) bonds of euro issuers but not in euros. Risk class 4 includes assets such as German mid-cap stocks, Dow Jones stocks (because of currency risk to German investors), certificates without knock-out conditions or bonds with low credit rankings. Risk class 5 includes assets such as foreign small cap stocks, bonds with very low ratings, high-risk certificates such as knock-out or highly levered certificates, and derivatives, such as options or futures.

¹⁷ For completeness and as we use the two groups within the robustness section, Table 1 also shows the statistics for self-directed clients who newly take up financial advice after the introduction of the flat-fee scheme (new fee and new inducement clients).

therefore seems to be comparable. Additionally, we compare portfolio holdings to self-reported gross annual household incomes for investors reporting these data. Since income is reported within several ranges, we use the midpoint of each range as a proxy for investor income. The mean ratio of the average portfolio value (for the entire sample period) to annual income is close to 1.2. As a comparison, the ratio of total financial assets to gross household income for the German population is roughly 1.1 (German Federal Bureau of Statistics, 2008b; German Federal Bureau of Statistics, 2008a).

2.2.2 Market data

We complement the bank data with data on mutual funds from Thomson Reuters Eikon and with market data from Thomson Financial Reuters Datastream. We use monthly position statements combined with transactions, transfers, and securities' returns to compute daily portfolio positions and daily return series (gross and net of transaction costs) for every investor. To do so, we first infer daily holdings from monthly position statements, security transactions, and account transfers. We have end-of-day holdings for the last day in every month. To obtain the next end-of-day holdings, we multiply the end-of-day value of each holding by the corresponding price return (excluding dividends but considering any capital actions) for that security. These holdings are then properly adjusted for any sales, purchases, and account transfers that occurred on that same day. We repeat this procedure for every security and investor for each trading day in a given month. The holdings on the last day of each month are then reconciled with the true holdings obtained from the online bank to address any data quality issues that might result from the market data.

Second, we compute daily portfolio returns as the weighted average of the returns of all securities held, purchased, or sold by the investor on that day. We use total return data (including dividends) for securities without transactions on that day. With our market data, we are able to cover 97% of the

securities held or traded as measured by investors' total portfolio value. For securities that are either purchased or sold, we consider exact transaction prices to compute returns. We weight each security's return to calculate investors' daily portfolio returns. All holdings and sales are weighted by using values in euros based on the previous day's closing prices. All purchases are weighted by using the transaction value in euros. We compare the performance of investors using gross (before trading costs and after management costs of securities) returns and thereby ignore transaction costs. This procedure is used to isolate the decision quality of the investments. This procedure leads to commission-based scheme clients appearing to be in a relatively better position because we ignore front-end loads and do not account for the reimbursement of kickbacks for flat-fee scheme clients. Our approach in this area is hence conservative with respect to the benefit of the flat-fee scheme. We underestimate the effects by approximately 100 basis points per year because we ignore the reimbursement of the kickbacks.

We use 4-factor alphas to evaluate the performance of the clients. Therefore, we use the following factors computed daily for the broadest German index (CDAX): the German market factor (MKT), a bond factor, small minus big (SMB), high minus low (HML), and the momentum factor (MOM). We use the German CDAX because investors are exhibiting a home bias. For robustness, we also run a model using international factors from the data library by Kenneth French. All analyses are carried out in Euros.

2.2.3 Flat-fee scheme clients

In this section, we aim to show how many clients switch into the flat-fee scheme and which clients are more likely to do so. Thus, this section is mainly descriptive. We analyze all clients switching to the flat-fee scheme during the full sample period between January 2008 and December 2015. We opt for this time frame as clients switch constantly during the sample period, peaking at the first offering in

September 2009. We show the number of switchers per quarter in Figure A.I. in the Internet appendix.

The flat-fee scheme is available to all clients in our sample. Consequently, investors can switch to the flat-fee scheme from being self-directed or from being advised. 699 clients switch to the flat-fee scheme from being advised and 335 switch who were not using any advisory services before. In the same period, 1,380 investors started advice and opted for the commission-based scheme.

In the following, we mainly focus on the 699 clients who used financial advice previously. The main reason is that we are interested in the effect of the adoption of the flat-fee scheme rather than in comparing non-advised and advised clients (on which several papers exist, e.g., Bhattacharya et al. (2012), Hoechle et al. (2018), and Linnainmaa et al. (2018)). Looking only at switchers to the flat-fee scheme who received financial advice before and after the switch mitigates the issue of self-selection into financial advice.¹⁸

We compare the socio-demographic characteristics of the 699 switchers to the flat-fee scheme to those who stay in the commission-based scheme. Both groups were advised before the introduction of the flat-fee scheme and continue to receive financial advice. In table 1, we present descriptive statistics and, in table 2, we report the results from the probit regressions. The results from both exercises are very similar. We find that switchers are more likely to be female, more likely to hold a PhD, and less likely to

be already retired; they also have a slightly higher risk class, and a longer relationship with the bank than advised commission-based scheme clients. They also have higher portfolio values with lower turnovers from sales and purchases and pay more fees for funds than do inducement clients. Furthermore, they hold fewer single stocks and more actively managed funds and achieve marginally higher returns when comparing the 4-factor alphas.

[Insert Tables 1 and 2 about here]

Looking at the characteristics of switchers reveals two important insights. First, switchers to the flat-fee scheme seem to be more financially sophisticated as they are better diversified and have a marginally better portfolio performance. Switching to new and innovative offers by more sophisticated clients is regularly observed in the literature (e.g., Bhattacharya et al., 2012). Second, the decision to switch might be driven by the motive of reducing costs. Those who switch have higher portfolio values, have paid more for trading funds and maintain a higher fund share. These clients might hence benefit more from the flat-fee scheme as holding and trading mutual funds becomes relatively cheaper. These results clearly show that the flat-fee scheme might involve self-selection, as those who are more sophisticated and may have cost advantages from the flat-fee scheme switch. As we anticipated this self-selection problem, we opt for the propensity-score matching we described earlier.

¹⁸ In the robustness section, we also look at those who switch to the flat-fee scheme and never had financial advice before. There, we compare self-directed clients switching to the flat-fee scheme and those staying in the commission-

based scheme to address the concern that our results are driven purely by the sensation of having access to something new, i.e., a novelty effect.

3. Methodology

3.1 Identification of the effects of the flat-fee scheme

The main goal of our analysis is to investigate what happens to trading behavior, asset allocation, advice usage and portfolio outcomes after clients switch pricing schemes. Investors can switch into the flat-fee scheme from being financially advised and from being self-directed. However, after the switch, almost all clients received financial advice. Irrespective of the chosen pricing scheme, all clients still make self-directed trades.

We can hence compare investors that are advised before and after the switch or we can compare investors who were self-directed before the switch and use financial advice either under the inducement or the flat-fee scheme after the switch. As the decision to use financial advice is endogenous, but not the focus of this study, we mute this effect by focusing exclusively on clients that are financially advised before and after the switch. This comparison allows us to isolate the effect of the flat-fee scheme. Additionally, we present the results on the second comparison (newly advised clients) in the robustness section. There, we also discuss concerns related to novelty effects.

Obviously, we are still left with the endogeneity concern of self-selecting into the flat-fee scheme. In the next section, we will show that switchers hold larger portfolios, contain more mutual funds, and have a higher portfolio efficiency. They thus seem to be more savvy investors. To address this problem, we implement a propensity-score-matching approach initially introduced by Rosenbaum and Rubin (1983). We estimate the propensity score using a logit specification.¹⁹ Figure 1 presents the

available data in a timeline as well as the availability of the flat-fee scheme. The flat-fee scheme is available from September 2009 onwards, and clients switch at different points in time. Regardless of the individual switching date of the respective client, we match a switcher into the flat-fee scheme to a similar investor who decides to remain in the commission-based scheme at the end of August 2009, which is the month prior to the introduction of the flat-fee scheme. This procedure is used to ensure that the variables are unaffected by the flat-fee scheme.

[Insert Figure 1 about here]

We perform a one-to-one matching using the nearest-neighbor approach without replacement. To match, we require switchers and matched non-switchers to be from the region of common support. We use all investor and portfolio characteristics that are available to us. If variables require a time series to be computed (e.g., monthly portfolio turnover), we use the twelve months before September 2009. This approach follows Roberts and Whited (2013) as well as Lemmon and Roberts (2010) and ensures all matching variables are unaffected by the treatment. We also include outcome variables like portfolio value, mutual fund share or number of contacts with an advisor prior to the introduction of the flat-fee scheme to follow the general guideline by Heckman et al. (1998) stating that a rich set of variables is needed in order to have a low bias. All clients we consider for the matching have received financial advice under the commission-based scheme prior to September 2009. Table A.VIII in the internet appendix shows that after matching differences between treatment and control group are statistically insignificant. To further speak to the assumption of

¹⁹ In unreported tests, we also consider probit specifications. The results do not depend on the specification we choose.

the confoundedness assumption table A.IX provides the results of a placebo test showing that there are no effects for an artificial placebo switching date one year before the actual event happened. In addition, figure A.III shows that there is enough common support to find individuals with similar propensity scores. The right panel shows the common support for all individuals used in our study. We drop treatment observations whose propensity score is higher than the maximum or less than the minimum propensity score of the controls.

We match one investor who remains in the commission-based scheme to a switcher to the flat-fee scheme.²⁰ Thus, the control group consists of 7,828 clients who continue trading and taking advice under the commission-based scheme.²¹ This creates a panel in event time in which investors effectively switch at different points in time. We set the Event dummy equal to 1 for the matched investors at the same time in which the treated (=switching) investor changes to the flat-fee scheme. To investigate the effects, we analyze the effects from 12 (36) months around the switching date in event time for each investor. This procedure creates both cross-sectional and time-series variations that help to better identify the effect from switching on investor portfolios. The general panel regression setup for the difference-in-differences analysis is as follows

$$\begin{aligned}
 Y_{i,t} & \\
 &= \alpha_i \\
 &+ \beta_1 \text{Event time (dummy (post = 1))}_i \\
 &+ \beta_2 \text{Event time (dummy (post = 1))}_i \\
 &* \text{Fee (dummy)}_i + \beta_3 \text{PFE} + \varepsilon_{i,t}.
 \end{aligned} \tag{1}$$

where Y represents one of our key metrics from the last section, α_i displays the constant, Fee (dummy) is set to one for switchers, and the Event Time dummy is set to one after the individual switching

date of each switcher and zero otherwise. The switching date for the matched investors is aligned with the switching date of the treated switcher. PFE represents person fixed effects. Including additional time fixed effects has no effect on the results. We also control for month fixed effects and event time fixed effects and report the results in the Internet appendix (tables A.VI. and A.VII). The effect in which we are interested is the coefficient for the interaction term between the Fee and the Event Time dummy, which is measured by β_2 . The null hypothesis is that the effect from switching on diversification, trading behavior, portfolio performance, or investment decisions is zero. We run the analyses using investor double-clustered standard errors on the person and the monthly date.

To evaluate the matching procedure, we first turn to differences in the levels of key outcome variables pre-treatment. In internet appendix A.VIII., we show that the propensity-score-matching reduces any differences between treated and control investors to statistically insignificant values. For example, before the matching, the difference in portfolio values was approximately €30,000, and this difference was highly statistically significant. After matching, the difference is reduced to €6,000, which is statistically insignificant. This result carries over to other important variables such as portfolio performance (alpha), the active mutual fund share, portfolio turnover, the HHI (Herfindahl-Hirschman index), the length of the relationship or whether the flat-fee scheme would be beneficial. Hence, the matching fulfils its function by reducing pre-treatment differences and mitigating overt bias.

Our approach of matching by the end of August 2009 causes a time gap between the matching and the individual switching date. The switch happens at a customer-chosen point in time after the introduction of the flat-fee scheme. Nevertheless, when exploring

²⁰ Figure A.I. in the Internet appendix shows that investors gradually switch to the flat-fee scheme.

²¹ For the analysis of a potential novelty effect we also analyze the 335 clients who are first time users of financial

advice under the flat-fee scheme. We match those clients to the 1,380 clients who are first time users of financial advice under the commission scheme during the sample period.

time-series graphs of the pre-period, we still find the crucial assumption (Roberts & Whited, 2013) of common trends between switchers and their matches to be fulfilled. The existence of common trends provides evidence for the quality of our matching, but they are also necessary pre-conditions for causally interpreting the results. Their existence also alleviates concerns over hidden bias. The charts in Figure 2 provide evidence for reasonable common trends in the 12 months before individual switching dates. We also provide a placebo analysis with switching dates one year prior to the real dates in the internet appendix (table A.IX.). There are no meaningful effects to report. To further alleviate these concerns, we also run specifications in which we control for month-of-year fixed effects. Using month-of-year fixed effects controls for time-specific events that apply to all individuals. In addition, here, our main conclusions remain unchanged.

To demonstrate the robustness of our findings further we try out different approaches to address endogeneity concerns. One alternative way of addressing the endogeneity concern is to compare those customers who switch to the flat-fee schemes early to those who switch late. We split the sample at the median date of switching (July 2012). This strategy exploits the differences in the timing of the switching decision and assumes that those who switch early are comparable to those who switch late and behave similarly had they made decisions on their own. We discuss all of the results in the robustness section. The results qualitatively match those of the propensity score.

Furthermore, investors might use financial advice at points in time that are special to the individual. For example, they may have decided to invest more into funds, which all of the financial advice offered by the

bank is about. Alternatively, taking up financial advice may create some form of excitement. Both may be sources of endogeneity. To address these issues, we turn to the second group of flat-fee scheme clients that we above labelled newly advised clients. We compare newly advised clients in the flat-fee scheme to those who start receiving financial advice in the commission-based scheme. We discuss the results in the robustness section and show again no qualitative differences in the results.

For completeness we also run the difference-in-differences analysis without matching. The resulting table can be found in the Internet appendix (A.X.). As expected, without matching, the results are somewhat stronger²² as endogenous differences between the groups still exist, documenting that our endogeneity treatment reduced potential biases. Remaining time-invariant but unobserved differences are absorbed by the person fixed effects. In sum, we have no reason to believe that our matching did not work properly, and we use the results to evaluate the effects of the flat-fee scheme on the investment decisions of investors.

3.2 Measurement of the effects from switching

To measure the impact of the flat-fee scheme on clients, we look at four dimensions, in which difference through changes in behavior of clients may occur. These dimensions are portfolio efficiency (diversification and performance), advice usage, trading behavior and portfolio size. Therefore, following the literature, we use seven measures.

(1) We measure the total number of client-advisor interactions for each client by counting the number of calls initiated by the advisor or client. (2) We measure the HHI as a measure of diversification and portfolio

²² Without matching, the coefficients go in the same direction but some of them tend to be stronger. For example, switchers to the flat-fee scheme have a 2.03% lower unsystematic variance share using the propensity-score-matched sample whereas they have an 8.95% lower unsystematic variance share without matching. Furthermore, switchers' portfolio performance (portfolio

turnover) increases by 3.23% (2.67%) on average for the matched sample whereas switchers increase their portfolio performance by 5.43% (3.03%) with no matching. The same occurs for the coefficients on portfolio value (14,614 versus 25,853). The coefficient on the share of active funds and talks per month is even higher for the setting using matched clients whereas the HHI is highly comparable.

efficiency.²³ It is calculated as the sum of the squared portfolio weights of each security (identified by its ISIN) in a portfolio at each month end. Following Dorn, Huberman, and Sengmueller (2008), mutual funds are counted as 100 equally weighted securities. When this measure has a lower value, the degree of diversification is higher. (3) As an alternative measure for diversification, we regress portfolio returns on 4-factor portfolios using the German CDAX as the market and use $(1 - R^2)$ as a measure for the share of unsystematic risk in the total portfolio risk. (4) We determine the share of mutual funds, because it drives diversification, and mutual funds are the key advisory content. (5) We take the total portfolio value in euros at month end for each investor. (6) We follow Barber and Odean (2001) to measure portfolio turnover and compute it for investor i in month t :

$$\begin{aligned}
 \text{Portfolio turnover}_{i,t} &= 0.5 * \frac{\text{purchases}_{i,t}}{\text{portfolio value}_{i,t}} \\
 &+ 0.5 \\
 &* \frac{\text{sales}_{i,t}}{\text{portfolio value}_{i,t-1}} \quad (2)
 \end{aligned}$$

When monthly portfolio turnover is larger than 1, the turnover is set to 1 for that specific month. This approach follows Barber and Odean (2001). (7) We measure the bottom-line of investment success, using 4-factor alphas (using German factors) to measure the portfolio performance following Carhart (1997). The results remain qualitatively unaltered when we use 1-factor alphas instead.

²³ The HHI is a measure of diversification widely used in the finance literature (Dorn, Huberman, and Sengmueller, 2008; Ivković, Sialm, and Weisbenner, 2008)

4. Results

4.1 Effects of the flat-fee scheme on switchers

In this section, we continue by analyzing whether the 699 switchers change their behavior after opting into the flat-fee scheme and, ultimately, whether they benefit from doing so. Therefore, we use a propensity-score-matched difference-in-differences design. To analyze the effects of switching, we use the seven key metrics introduced in section 3.2 and the difference-in-differences setting described in section 3.1. We conduct the difference-in-differences analysis with matched pairs of switchers and socio-demographically similar non-switchers (both advised). We first depict the results graphically and then provide statistical robustness through a regression analysis.

Figure 2 provides evidence that, after the switch to the flat-fee scheme, clients trade more in funds. The increasing fund share improves portfolio efficiency by using more diversified mutual funds. Twelve months after the switch, switchers hold an active fund share of 80% in their portfolios, and inducement clients hold a share of roughly 62% active funds. Switchers double their portfolio turnover during the first month after their switch and remain at that higher level during the next months. Furthermore, switchers increase the portfolio value by approximately 20,000 euros from 120,000 to 140,000. This finding indicates that the increase in fund share is driven by newly invested money rather than by re-allocation decisions in the investment portfolio. Ultimately, switchers benefit from the switch in the form of higher portfolio performance measured by 4-factor alphas based on gross returns (Carhart, 1997). The increase in

portfolio turnover mainly comes from trading mutual funds for which loads are waived.²⁴ Hence, the higher turnover cannot lower the performance.²⁵

[Insert Figure 2 about here]

Figure 2 also shows that clients switching to the flat-fee scheme talk more often to their advisor after the switch. While both non-switchers and switchers talked to an advisor once per year before the switch, the number of contacts increased for switchers to 3.5 contacts per year over the 10th months after the switch, whereas the number of contacts remained unchanged for inducement clients. This effect is unlikely to be a sensation or novelty effect of using a new pricing scheme because it persists throughout the 36 months after the switch. We find evidence that clients perceive the advice to be of higher quality as a potential reason for the increasing number of advisor contacts in the section 4.2.

We provide econometric validation of these results using a panel regression in event time on the seven key metrics. We are interested in the interaction term of the Fee dummy and the Event Time dummy. All specifications include client fixed effects, and standard errors are double-clustered on the portfolio ID and month-by-year. We provide the analysis with 12 (36) months before and after the individual switching date of the respective client and show the results in table 3. As the two sets of results are comparable, we report the results with the longer time horizon only. Flat-fee scheme clients are significantly more likely to talk with an advisor

²⁴ Redemption fees and swing pricing arrangements were prohibited in Germany during the sample period. In March 2020, a legislation that allows swing pricing was enacted. Also other mechanisms that penalize investors who switch mutual funds often do not exist.

²⁵ In fact, using gross returns leads to a fair comparison as the flat fee and the reimbursement of kickbacks of

approximately 1% almost perfectly sets of the management fee. By using gross returns, we do not factor in front-end loads that commission-based scheme clients pay for every fund purchase. Thus, we rather overestimate the performance of commission-based scheme clients.

following the switch than are non-switchers. Switchers have approximately two additional advisory talks per year (panel C, column 1). They significantly increase their portfolio diversification (a 5.78% decrease in HHI) by increasing their fund share by 17.7 percentage points (columns 2 and 4). We find a significant increase in portfolio value and an increase in portfolio turnover by 1.67% (panel D, columns 1 and 2). In line with the higher fund share and increasing turnover, flat-fee scheme clients increase their portfolio performance by 3.5% (column 3). The improvement to investor portfolios can also be measured in alphas and unsystematic variance shares. We use the CDAX and German factors or, alternatively, international factors to measure alphas and unsystematic variance shares. Both approaches document an improvement in performance and unsystematic variance share. The improvement is even stronger when we use international factors. In an event window of plus/minus 36 months, using international factors (not tabulated) we find that the alpha increases by 1.74% and the unsystematic variance share decreases by 3.12%. Both effects are statistically significant at the 10% and the 1%-level. This is not surprising as investors are rather advised to invest in internationally focused mutual funds.

[Insert Table 3 about here]

In section 5 we demonstrate that these results hold for different approaches of defining the control group, and, by comparing early to late switchers, we show that the results are also not driven by novelty effects. The results also hold for advisor and time fixed effects. We obtain similar results when we limit ourselves to clients who have their salary account with our bank, and we show that the same effects occur, when we analyze a comparable field experiment at a brick-and-mortar bank in section 5.

4.2 Economic mechanism

We find that adoption of the flat-fee scheme results in a higher fund share, and, consequently, in a better portfolio diversification. Four economic mechanisms could be responsible for that linkage. Firstly, as fund transaction costs are cut to zero under the flat-fee scheme, the price of purchasing and holding funds declines also relative to other financial instruments. This phenomenon might increase the demand for mutual funds. Secondly, clients might be subject to a form of the sunk cost fallacy. Because they pay a flat-fee, they feel urged to purchase mutual funds to recoup the fee from saved fund transaction costs. Thirdly, mere novelty effects from trading mutual funds at zero cost under the new scheme might prompt some clients to conduct more mutual funds transactions directly after switching. Fourthly, the flat-fee scheme might increase trust in advisor recommendations' quality as it might reduce the perceived conflict of interest faced by financial advisors. As a result, clients seek advice more and are more likely to follow the advisor's recommendations after each single counselling session. We find evidence for the fourth explanation.

4.2.1 Are cost advantages explaining the results?

The increasing fund share might be caused by clients switching to the flat-fee scheme to purchase funds at reduced costs and reduce the total cost of holdings securities in a portfolio.²⁶ If reaping savings were the only reason to switch in the flat-fee scheme, we would expect self-directed trades and advised trades to be of the same importance before and after the switch. The reason is that, irrespective of the chosen pricing model, financial advice is free and does not change. If cost advantages were the explanation, both self-directed and advised mutual fund trading would increase, because the lower costs apply irrespective of whether a mutual fund is purchased through an advisor or directly. The clients in our sample are well experienced in trading all sorts of

²⁶ The only costs flat-fee scheme clients must pay is the remaining difference between the management fee and the reimbursed kickback.

securities self-directedly. Thus, they neither need to consult an advisor for trade executions nor do they substantially save time (e.g., by lowering information costs) by doing so. Note that following also increases in the mutual funds types they traded before and those mutual funds they sell.

Our data allow us to investigate whether the adoption of the flat-fee scheme affects the relative probability of purchasing funds self-directedly or through an advisor in a difference-in-differences setting in event time. We flag each client-advisor contact and the respective recommendations. We analyze the probability of trading funds within 7 (30) days before and after the advisor interaction and differentiate between self-directed trading and trading based on recommendations by the advisor. This analysis is possible because a substantial number of investors trade in this period both self-directedly and based on recommendations. For mutual fund trading on advisor recommendation we flag each trade related to a recommendation in the following 7 (30) days. We include a dummy for recommended funds and two interaction terms. The first interaction term is for the flat-fee scheme and event time and the second one is for recommendation, advice and event time. The first one measures the changes in self-directed mutual fund trading and the second one measures the changes in mutual fund trading based on financial advice. Table 4 shows the results.

[Insert Table 4 about here]

Looking at the latter interactions, we find that advised clients under the flat-fee scheme are 20.9% more likely to trade funds if they have been recommended after the introduction of the flat-fee scheme in the 7 days after the interaction with their advisor (column 1).²⁷ This effect is statistically significant at the 1%-level. We also look at the days before the interaction with an advisor (columns 3 and 4). In this period, we do not find an increase in self-directed trading in

mutual funds. In this case we are interested in the coefficients on Fee x Event Time because it shows the increase in self-directed mutual fund trading before the interaction with the advisor but after the client has switched to the flat-fee scheme. The result is statistically insignificant, showing no change in self-directed mutual fund trading.

Taken together, these findings contradict the idea of flat-fee scheme clients simply taking advantage of a cheaper way of trading funds. Flat-fee scheme clients are significantly more likely to trade on financial advisor's recommendations than self-directedly. Lower trading costs cannot cause this behavior because the same trading costs applied if clients traded on their own.

4.2.2 Is the sunk cost fallacy explaining the results?

A second explanation for the increasing fund share is the sunk cost fallacy. The sunk cost fallacy dates back to the work of Arkes and Blumer (1985) and describes an effect according to which people continue a behavior or prefer an option once they have invested money or time into it although it is not necessarily the best option.

This theory suggests testable implications. If the sunk cost fallacy could explain the rising fund share, we would expect that those who pay more are the ones who purchase more funds. We compare the clients who pay more under the flat-fee scheme than they did previously when being inducement advised to the clients who pay less under the flat-fee scheme. Additionally, this group should be particularly eager to reach the break-even point, to increase their fund shares more and, potentially, to increase their advisor contacts.

To test these implications, we look at changes in the mutual fund share and changes in the number of contacts with advisors. The first variable allows us to look at changes in the diversification and the second

²⁷ The same result applies when analyzing the 30 days before and after the interaction (column 2).

one allows us to analyze whether people seek more financial advice. We employ three proxies for the investors most susceptible to the sunk cost fallacy or the buffet effect. If sunk costs played a role, investors with larger portfolios, for which the absolute costs in the flat-fee scheme are higher (columns 1 and 4); those who now pay more than before (columns 2 and 5); and those who are in the top two terciles of the flat-fee scheme should have the largest effects (columns 3 and 6).

[Insert Table 5 about here]

The tests we run are all insignificant. The sunk cost fallacy does not explain our findings. One reason might be that the fee is paid only at the end of the quarter and that it is withdrawn directly from the customer account, while kickbacks are reimbursed. Previous literature shows that payments that are more mentally distant payments and means of payments mitigate the effect, which is consistent with our results (e.g., Prelec & Loewenstein, 1998; Prelec & Simester, 2001; Soman, 2001; Soman, 2003).

4.2.3 *Is the 'novelty effect' explaining the results?*

The increasing fund share might be caused by the novelty of the flat-fee scheme. The novelty effect describes the higher usage of new products and services after signing up for or buying them. This situation applies, for example, when individuals first sign up for a gym contract.

We hence focus on people who use financial advice services for the first time at this bank and thus may be subject to a novelty effect and compare new investors under the flat-fee scheme and new investors under the commission-based scheme. Both groups have only recently begun to make use of financial advice and might be subject to a novelty effect. If our results were driven by the novelty effect the effects would not apply for new flat fee clients

matched to new inducement clients. The results are summarized in Table 6.²⁸ We find that our main results remain significant and at a comparable size for newly advised clients. In particular, the increase in fund share is again observable. Thus, our results seem to be less likely to be driven by the novelty effect.

[Insert Table 6 about here]

4.2.4 *Is the flat-fee scheme increasing trust in the financial advice?*

4.2.4.1 *Following in less familiar products and asset classes*

The previous section has shown that cost-related arguments fail to explain our findings. On the contrary, flat-fee scheme clients are more likely to consult a financial advisor and diversify more. We therefore proceed by analyzing the role of advice in explaining the surge in fund share. We first run a difference-in-differences specification that has a dummy for following advisor recommendations as the dependent variable. The dummy is one if a buy (sell) recommendation results in a buy (sell) decision and zero otherwise. We also use a difference-in-differences analysis in event time over the 7 (and 30) days following an interaction with the financial advisor. To do so, we regress an Event Time dummy (before and after) and the interaction of the Event Time dummy with whether a client switched to the flat-fee scheme on Following. Following is an indicator variable that is set equal to one if a trade is following a recommendation and zero otherwise. We show following of recommendations in the 7 days (column (1)) and 30 days (columns (2) and (3)) after the interaction with the financial advisor. We include investor fixed effects. In an additional specification, we control for cost advantages. We show the results in table 7.

[Insert Table 7 about here]

²⁸ We do not report counselling sessions with an advisor per month before the take-up of advice for either groups because they were self-directed. Thus, a difference-in-

difference analysis would not be meaningful for talks per month.

We find that following increases by 38.9% for advised clients under the flat-fee scheme for the 7 days after the advisor-client interaction (column 1). Following before switching was at 12.5%. Extending the specification to 30 days after the interaction reveals that following significantly increases by up to 53.5% for flat-fee scheme clients. When comparing the results reported here with the ones in the subsequent table 5, note that table 5 weights asset classes and regions equally and is therefore not directly comparable.

When controlling for fees to be paid (inducement) or saved (fee) (see the explanation in previous section and the calculation example in Figure A.II. in the Internet appendix), an advised client under the flat-fee scheme is even more likely (58.3%) to follow the received recommendations. Beyond increasing the propensity of following advice, all other variables involving fund fees are insignificant in explaining following. This result provides further evidence that fees do not explain the mechanism behind the higher propensity of following by flat-fee scheme clients (column 3). Customers do not make their fund choice based on the announced fees of funds nor do they consider fees (more) into account after the switch. An increase in the likelihood of following might be driven by an increase in trust in the received recommendations. This idea is in line with Gennaioli, Shleifer, and Vishny (2015), who showed that investors with more trust are more likely to follow their advisors. Trust should be particularly important in products and asset classes clients know less about. Thus, looking at descriptive statistics may inform us whether clients are also more likely to follow in situations involving more complex assets and/or more informationally distant assets. If they were more likely to follow in situations involving such less familiar and thus more information-intensive products, this would be further evidence for clients' trust in the received recommendations. Furthermore, descriptive statistics may inform whether the increase in following is found for both purchase and

sell recommendations. Notably, selling funds has always been free.

To analyze this situation, we compare following in different types of funds and in funds that focus on different regions as well as following in purchase and sell recommendation before and after the switch. We show the results in table 8. Although the content of financial advice does not change for flat-fee scheme clients, these clients follow their advisors more. This result holds both for products and asset classes clients traded before as well as for products and asset classes with which clients may not be experienced. Following in products that are more complex or more informationally distant to clients may signal an increase in trust, bearing in mind that cost savings do not contribute to explaining following. Additionally, following increases even more in sell recommendations. This finding provides further evidence that costs are not the driving force as selling funds has always been free of costs.

[Insert Table 8 about here]

4.2.4.2 Is the flat-fee scheme changing the perception of advice? Evidence from an online survey

To explore a potential change in clients' perception of the advice, we turn to an online survey with the clients of the bank that we administered in 2012. The invitation e-mail was sent out to 10,000 randomly drawn clients in our sample. The survey was online from the end of March to the beginning of May 2012. 826 clients started the survey, and 709 completed it. Participants in the survey were predominantly male (84%), married (68%), had a college education (68%), and were, on average, 54 years old. Overall, the participants are comparable to the average client observed in our sample. The survey focused on collecting information on the respondents and their behavioral predispositions. We asked people whether they currently receive financial advice under the inducement or flat-fee scheme at this bank. 45 out of 709 participants responded that they were

using financial advice under the flat-fee scheme. Those flat-fee clients replied on a five-point Likert-type scale (1 and 2 do not agree; 4 and 5 do agree) that they do not believe that the advice under the flat-fee scheme is beneficial in terms of cost (43% do not agree; 35% agree). However, 49% (32%) believe the quality of advice had (not) improved, 54% say the

advisor now works in the best interest of the client, and 46% (vs. 39%) claim they are now more active in the stock market. Although the advice did not change by the introduction of the flat-fee scheme, clients experience the financial advice to be of better quality under the flat-fee scheme.

5. Robustness & further analyses

5.1 Advisor fixed effects

The literature on financial advice has recently provided evidence for strong advisor fixed effects in the portfolios of clients (Foerster et al., 2017). However, in our case investors call in, are randomly assigned to an advisor, and the recommendation list is created by a central research unit that limits advisor leeway, so advisor fixed effects are presumably small. We nevertheless run a robustness test in which we control for advisor fixed effects. In our case, the advisor fixed effects are based on the advisor with whom a client most often speaks.

We include the investor fixed effects in our standard regression model. However, instead of investor fixed effects, we use advisor fixed effects. In our specification with advisor fixed effects, we now include a fee dummy that is omitted from our main specification because of the investor fixed effects. The clustering strategy remains unaltered. The results are summarized in table 9. We find that the inclusion of advisor fixed effects does not alter our results. The interaction term maintains both its magnitude and its statistical significance level. Hence, the advisor effects in the sample we consider are much smaller (or even negligible) than the ones that Foerster et al. (2017) observe for the Canadian sample. In our case, the R^2 hardly changes, whereas, in their paper, it nearly doubles.

[Insert Table 9 about here]

5.2 Using early versus late switchers to address the selection effect

In the main analyses, we used propensity-score matching to address the endogeneity issue of the switching decision. A sensible alternative to this strategy is employing a strategy that exploits the differences in the timing of the switching decision.

Assuming that those who switch early are comparable to those who switch later, we compare those who switch before July 2012 to those who had not yet switched at this date but who switched later. Using these two groups simplifies our main specification to only having an indicator for before and after the switch alongside investor fixed effects. The results from running this specification are reported in table 10. The results are comparable to those we reported earlier. The switch to the flat-fee scheme increases the number of contacts and improves diversification by increasing the share of actively managed funds. It also leads to higher portfolio values, turnover and fees paid. All effects are highly significant except for the effect on performance.

[Insert Table 10 about here]

The way we address the matching issue is not driving the results of our paper.

5.3 Restricting to clients with a main banking relationship (main accounts)

An issue might be that the effects we observe are driven simply by clients with several bank accounts shifting new money in their account after enrolling in the flat-fee scheme to trade especially mutual funds with this account. This argument is in line with taking advantage of the cost benefits of trading mutual funds and the issue that we might observe only play money accounts. To address this potential issue, we restrict our analysis to clients with a main banking relationship. We classify a client as having a main banking relationship if he/she receives monthly salary payments on their account. Therefore, we flag each client as a main account user if he or she receives at least three salary payments between the start of our observation period in January 2008 and

the introduction of the flat-fee scheme in September 2009. We find that restricting our analysis to main account users yields qualitatively unaltered results. This finding shows that play money accounts or users shifting money into the bank do not drive our results. We show the results in table 11. Restricting the identification of main account users to one or more than three salary payments does not change our results.

[Insert Table 11 about here]

5.4 Treatment effect heterogeneity: Splitting by propensity to switch

The paper has shown that when offering a non-mandatory new pricing scheme, people self-select into it. The socio-demographic characteristics of switchers have shown that switchers have larger portfolios, higher fund shares, and a better portfolio efficiency. In this section, we test whether the effects are driven by a particular group of switchers. To do so, we revisit the probit regression used to explain switching (table 2). We take specification (2), which can be estimated for 8,527 customers because it has the highest R^2 . We then use the coefficient estimates from this specification to predict the 50% (predicted median probability of switching 11.7%) of these clients with the above median probability of accepting advice.²⁹ Essentially, this procedure leads to testing whether those who are more likely to switch have different effects than those who are less likely to switch in comparison to the control group.

We now run the same regression specification that generated the results in Table 3 but for the two client groups who are more (less) likely to switch separately. We report the results in table 12. This regression checks whether portfolio efficiency, trading behavior and performance improve for clients who switch to the flat-fee scheme.

[Insert Table 12 about here]

The coefficient on the interaction term indicates that we observe qualitatively similar effects for the two groups. Both groups benefit from switching to the flat-fee scheme through an increase in financial advisor contacts and a resulting increase in the mutual fund share.

The above result leads to the conclusion that those who switch to the flat-fee scheme benefit from using it even if they were *ex ante* less likely to switch. Therefore, our effects are not bound to a particular group in our sample. If more people switched even if they were unlikely to switch, we expect them to benefit from the flat-fee scheme based on our results.

5.5 Replication with an alternative dataset from a brick-and-mortar bank

Our data stem from a large online bank in Germany. Thus, they might be subject to the concern that we are observing effects only for a special group of online-affine, more active, and more financially literate investors that are less in need of financial advice. Furthermore, the bank plays a pioneering role in offering a flat-fee pricing scheme to its clients in a context directly following the financial crisis. We have already shown that the investors in our sample are comparable to the average German investor, and we controlled for the novelty effect in chapter 4.2.3.

However, to address the potential criticism of a selected online sample, we make use of a comparable dataset of one of the largest German banks with a widespread network of branches. In this bank, face-to-face financial advice is prevalent, with financial advisors ultimately executing customer orders. Self-directed trading by customers plays only a minor role. This bank also introduced an alternative flat-fee scheme in July 2013 in which clients pay an annual fee of 1.45% of their portfolio value (but at

²⁹ The results are robust to different cutoff points—including 10%, 20% or even 50%—with highest likelihood to opt for advice.

least 145 euros quarterly), but they do not pay for their securities account, nor do they pay initial charges for mutual fund purchases. Additionally, annual charges are reduced, and only third-party management fees, on average 0.25%, are charged. On the contrary, clients in the traditional commission-based scheme pay a small securities account fee (if they execute at least one trade per month; otherwise, they pay an annual securities account fee of 0.175% of their portfolio value). They also pay initial charges and annual charges in full. In both schemes, clients can receive the same face-to-face individual financial advice in the branch, online or via phone at no extra cost; receive periodic newsletters including analyst reports; have access to several additional reports and sources of information (e.g., daily market assessment, 7-day outlook, 30-day outlook, detailed assessments of single products as stocks, bonds, ETFs, mutual funds, and certificates); and participate in periodic CIO calls. Flat-fee scheme clients trade every asset class (stocks, bonds, mutual funds, and certificates) at no cost, except for the remaining management fee. The offered financial advisory services are also the same for flat fee and commission-based scheme clients. As self-directed trades play only a minor role, portfolio turnover is likely to be mainly driven by advised trades. We expect the effect of the flat-fee scheme not to be limited to mutual funds only because the cost benefits of the flat-fee scheme in this bank occur for all instruments.

We apply the same identification strategy to the alternative dataset as we used for our main sample. We propensity-score match users of the flat-fee scheme to non-users to reduce the effects of self-selection and then repeat both the graphical common trend analysis for the alternative dataset from the second bank and the difference-in-differences fixed-effect regression. Using our alternative dataset on one of the largest German banks, in which clients are commonly advised and the flat-fee scheme advantage is not limited to mutual funds, demonstrates the robustness of our initial findings:

First, flat-fee schemes lead clients to consult their financial advisors more frequently. Second, as buy turnover increases in a setting where self-directed trading plays only a minor role, clients increase their portfolio values and hold more diversified portfolios. In detail, we include portfolio turnover, portfolio buy turnover, fund share, mutual fund share, value of mutual funds, portfolio diversification (HHI), and portfolio value (Figure 3). Flat-fee scheme clients increase their portfolio turnover after having switched to the flat-fee scheme. This increase is mainly driven by buy turnover. Additionally, switchers increase their mutual fund holdings. However, this increase is proportional to an increasing overall portfolio value. Flat-fee scheme clients increase their portfolio values by approximately €20,000 from €80,000 to €100,000 in the 12 months after the switch. Furthermore, flat-fee scheme clients improve their portfolio diversification, as the HHI decreases after the switch.

[Insert Figure 3 about here]

We continue by analyzing the effect of the switch to the flat-fee scheme in a pooled cross-sectional difference-in-differences analysis including an Event Time dummy and its interaction with the Flat-fee scheme dummy on the above-mentioned variables. We show the results in table 13. The regression results are in line with the graphical results and show that flat-fee scheme clients significantly increase their portfolio turnover by 40% per month. This increase is driven by an increasing buy turnover in the same magnitude. The share of purchased mutual funds is not statistically significant, whereas the total value in active funds increases significantly by approximately €13,000. Flat-fee scheme clients seem to hold their fund share constant but increase their overall portfolio value and mutual fund values. Flat-fee scheme clients also significantly improve their portfolio diversification.

[Insert Table 13 about here]

Overall, the results for our alternative dataset lead to the same insights generated from our main analysis. The introduction of flat-fee schemes induces clients to hold larger, more diversified portfolios and to

interact more often with their advisors. These phenomena all occur in a situation in which the supply processes and personnel remain unaltered.

6. Conclusion and implications

To analyze how changes in the way customers pay for financial services can affect individual investors' behavior, we make use of a unique field experiment in Germany. In August 2009, the bank with which we work introduced a flat-fee model for trading and holding mutual funds. The flat-fee scheme runs in parallel with the bank's traditional commission-based scheme. This pricing does not change the scope and quality of the offered services.

We find that clients opting into the flat-fee scheme are already advised, hold more wealth, are more educated, are more likely to be female, and generate a cost-benefit by switching. We find that switchers benefit from the switch by increasing their portfolio diversification due to a higher share of actively managed funds. Furthermore, switchers increase their portfolio value and their monthly portfolio turnover. We find that fee scheme clients speak more often with their financial advisor. The economic mechanism underlying the increasing fund share of advised clients under the fee scheme is not simply taking advantage of a cheaper way of trading funds, suffering from a sunk cost fallacy or being subject to the novelty effect. Instead, fee scheme clients are approximately 40% more likely to follow the financial

advisor's recommendations for funds in the first week after they have received the recommendation. The self-directed trading of funds, which has also become cheaper, does not change. Combining the types of funds and their regional focus with survey evidence, our study suggests that clients under the fee scheme value financial advice more than their counterparts do under the inducement scheme. We show that these effects are not due to the experimental setting. Repeating our analyses with a comparable introduction of a fee scheme in a large German brick-and-mortar bank yields similar findings.

Our study shows that changing the cost model of financial services leads to a sustainable and valuable change in clients' behavior. These effects are stronger among clients who switched but who were not deemed to do so based on their demographics. As our results suggest that payment for financial services is causally important for portfolio choice, our results are important for financial institutions, regulators, and policy makers alike. Our study shows that expectations on the negative consequences of potentially wrong incentives are an impediment to trusting and following the recommendations of a financial service provider.

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8. Appendix

Figure 1: The timeline of the data and the empirical approach

This chart shows the sequences of relevant events in the field study. The data we use for the paper start in 2008 and end in December 2015. For this period, we possess trading records, portfolio holdings, recommendations by advisors and client socio-demographic information.

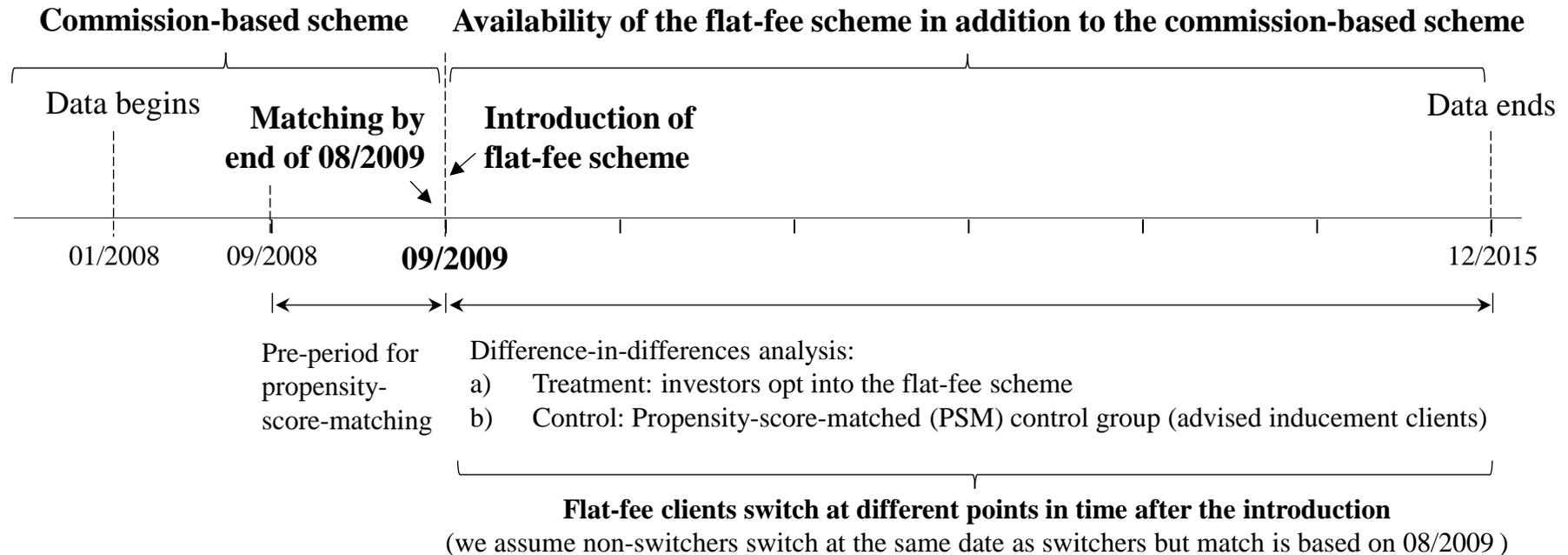


Figure 2: Common trends and effects of the switch

The charts show the effect of the switch to the flat-fee scheme on measures of advice usage, portfolio allocation and portfolio performance for switching clients compared to propensity-score-matched commission-based scheme clients in event time, analyzing the 12 months before and after the switch. Switchers are defined as commission-based scheme clients who switch to the flat-fee scheme. Chart (1) illustrates the monthly Herfindahl Hirschman Index (HHI), assuming that a mutual fund holds 100 securities, and (2) shows the unsystematic variance share in percentage terms measured by 4-factor alphas. Chart (3) shows the share of active funds purchased, and chart (4) illustrates the total number of talks with an advisor in the past 12 months. Chart (5) shows the portfolio performance per year in percentage terms measured by 4-factor alphas, and chart (6) depicts the monthly portfolio turnover as a percentage of the portfolio value. Chart (7) illustrates the monthly portfolio value in thousands of euros. The dotted line illustrates clients switching into the new flat-fee scheme, whereas the solid line shows the propensity-score-matched control group of non-switchers.

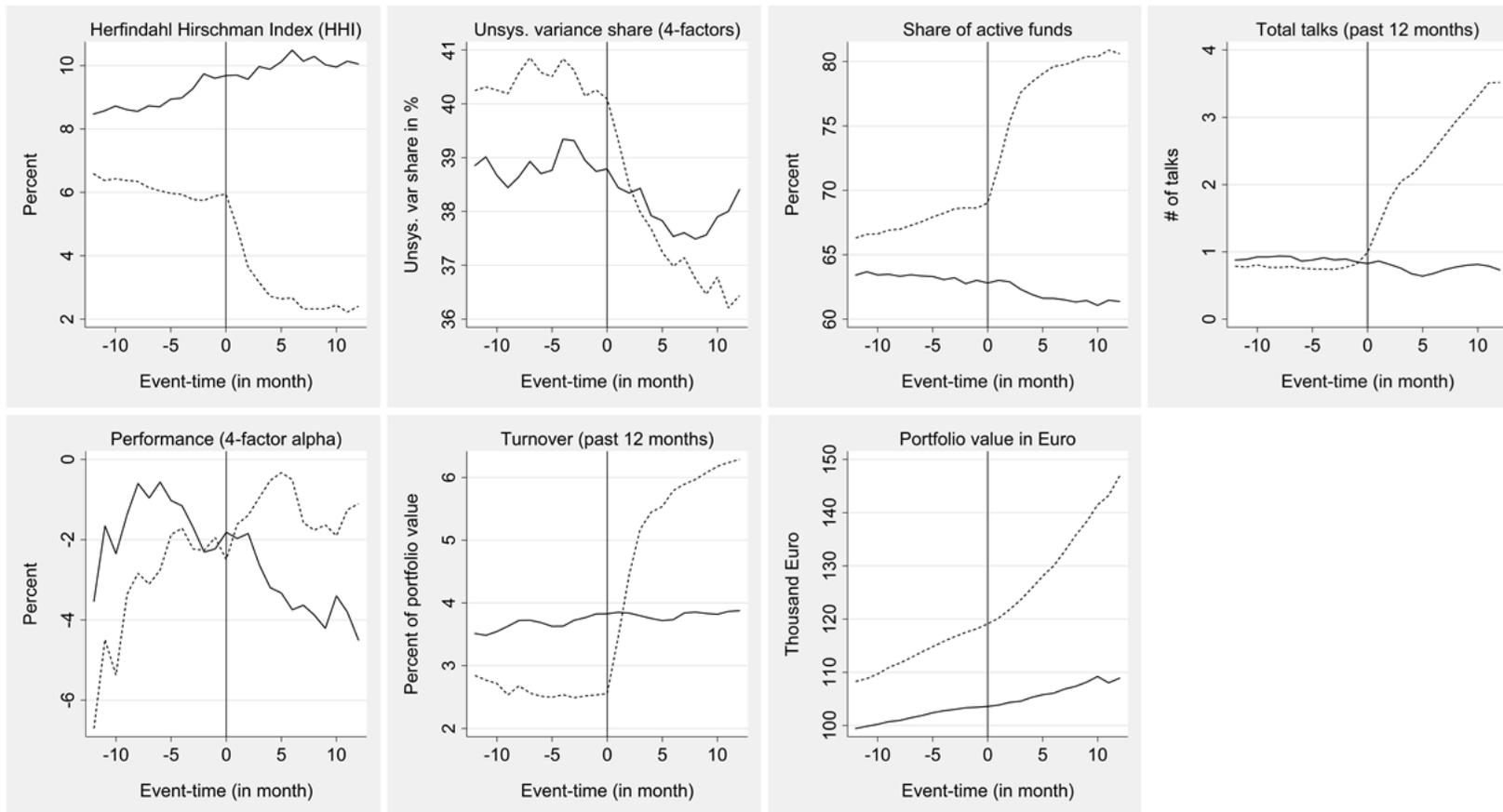


Figure 3: Robustness: Common trends and effects of the switch at a branch bank

The charts show the effect of the switch to the flat-fee scheme at a branch bank on measures of portfolio allocation and trading behavior for switching clients compared to propensity-score-matched commission-based scheme clients in event time, analyzing the 12 months before and after the switch. Switchers are defined as commission-based scheme clients who switch to the flat-fee scheme. Chart (1) shows the monthly Herfindahl Hirschman Index (HHI), assuming that a mutual fund holds 100 securities, and chart (2) shows the share of mutual funds purchased per month. Chart (3) shows the total value of mutual funds per month in euros, and chart (4) illustrates the monthly portfolio buy turnover as a percentage of the portfolio value. Chart (5) shows the monthly portfolio turnover as a percentage of the portfolio value, and chart (6) shows the monthly portfolio value in thousands of euros. The dotted line illustrates clients switching into the new flat-fee scheme whereas the solid line shows the propensity-score-matched control group of non-switchers.

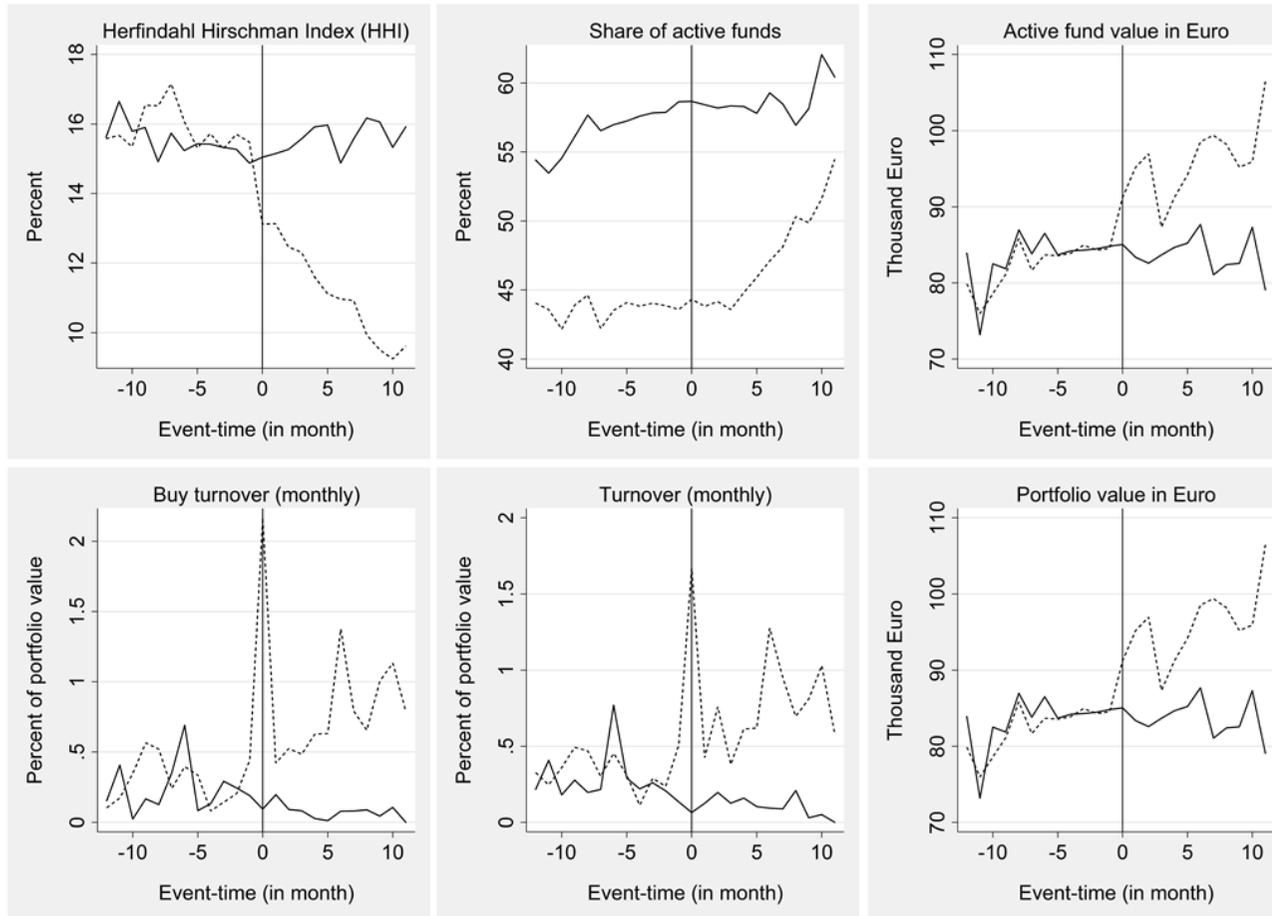


Table 1: Investor data and demographics of advised and non-advised clients

Note: This table presents summary statistics for our retail investor data as of September 2009, which is the month before the flat-fee scheme was made available. Column (1) shows the statistics for commission-based scheme clients, whereas column (2) shows the statistics for advised commission-based scheme clients switching to the flat-fee scheme (Switchers). Column (3) shows statistics for self-directed clients taking up advice under the commission-based scheme whereas column (4) shows statistics for self-directed clients taking up financial advice under the flat-fee scheme. We report socio-demographic information on the clients' age (Age), marital status (Married), gender (Gender), whether they hold a PhD (PhD), length of the relationship with the bank (Length of relationship), whether they currently live in Germany (German resident) and whether they work as employees (Employed), are retired (Retired) or have another job (Other). We also include information on their portfolio and trading behavior. All variables that require a time-series to be computed use the previous 12 months. Thus, we include the average portfolio value in euros, the turnover from purchases, sales and the entire portfolio, and the fees paid. We also include information on the asset allocation in August 2009. We show the asset allocation by instrument, asset class and regional focus. The asset class and the regional focus account only for funds and equities. Finally, we provide information on clients' diversification using the unsystematic variance share from a 4-factor model and the Herfindahl-Hirschman Index assuming that a mutual fund holds 100 securities. We finally report average factor loadings between January 2003 and September 2009 using the 4-factor model. The 4-factor model uses the German CDAX and its constituents to build daily factors. Data on the investors come from the bank, while data on asset allocations come from the bank and Thomson Reuters Eikon. Other market data are taken from Thomson Reuters Financial Datastream. We include investors who had a portfolio for at least 200 days as of August 2009.

	(1)			(2)			(3)			(4)		
	Commission-based advice			Commission-based advice to flat-fee advice (Switchers)			Self-directed to commission-based advice (New inducement)			Self-directed to flat-fee advice (New fee)		
	N	Mean	Median	N	Mean	t-test (p-val)	Mean	t-test (p-val)	N	Mean	t-test (p-val)	
<i>Socio-demographics</i>												
Age (in years)	7,828	55.17	54.00	699	54.50	0.29	1,380	54.30	0.01	335	51.09	0.00
Married (married = 1)	7,828	0.64	1.00	699	0.68	0.06	1,380	0.65	0.56	335	0.61	0.06
Gender (male = 1)	7,828	0.86	1.00	699	0.84	0.19	1,380	0.85	0.65	335	0.83	0.11
Ph. D. (yes = 1)	7,828	0.07	0.00	699	0.09	0.16	1,380	0.08	0.41	335	0.12	0.00
Length of relationship (in years)	7,828	15.04	13.00	699	15.36	0.01	1,380	14.61	0.00	335	14.38	0.00
Risk class (1 = low, 5 = high)	7,828	3.84	4.00	699	3.91	0.08	1,380	3.51	0.00	335	3.36	0.00
German resident (yes = 1)	7,828	0.97	1.00	699	0.96	0.03	1,380	0.98	0.49	335	0.95	0.06
Employed (yes = 1)	7,828	0.46	0.00	699	0.45	0.89	1,380	0.47	0.47	335	0.44	0.35
Retired (yes = 1)	7,828	0.17	0.00	699	0.15	0.46	1,380	0.15	0.03	335	0.11	0.02
Other (yes = 1)	7,828	0.37	0.00	699	0.39		1,380	0.38		335	0.45	
<i>Portfolio & Trading (previous 12 months)</i>												
Portfolio value (average past 12 months, in Euro)	7,828	60,307	34,939	699	85,063	0.00	1,380	48,168	0.00	335	37,850	0.00
Turnover from sales (past 12 months, in % per month)	7,828	4.40	0.35	699	2.04	0.00	1,380	3.77	0.02	335	2.73	0.00
Turnover from purchases (past 12 months, in % per month)	7,828	5.80	1.73	699	4.14	0.00	1,380	5.32	0.07	335	4.18	0.01
Turnover total portfolio (past 12 months, in % per month)	7,828	5.10	1.40	699	3.09	0.00	1,380	4.55	0.03	335	3.46	0.00
Trading fees paid (past 12 months, in Euro)	7,828	518.45	105.17	699	615.18	0.10	1,380	364.00	0.00	335	332.06	0.05
Trading fees paid funds (past 12 months, in Euro)	7,828	217.61	19.52	699	471.05	0.00	1,380	159.45	0.01	335	110.42	0.00

contd.	(1)			(2)			(3)			(4)		
	Commission-based advice			Commission-based advice to flat-fee advice (Switchers)			Self-directed to commission-based advice (New inducement)			Self-directed to flat-fee advice (New fee)		
	N	Mean	Median	N	Mean	t-test (p-val)	Mean	t-test (p-val)	N	Mean	t-test (p-val)	
<i>Asset allocation (in %)</i>												
<i>by instrument:</i>												
Funds (active)	7,828	49.27	49.81	699	65.52	0.00	1,380	46.56	0.01	335	59.79	0.00
Single stocks	7,828	33.83	21.63	699	16.48	0.00	1,380	40.85	0.00	335	31.53	0.13
Certificates	7,828	7.36	0.00	699	9.68	0.00	1,380	5.14	0.00	335	3.05	0.00
Funds (passive)	7,828	3.88	0.00	699	1.87	0.00	1,380	3.34	0.10	335	1.84	0.00
Single bonds	7,828	2.94	0.00	699	2.10	0.06	1,380	2.88	0.94	335	2.12	0.49
Other instrument	7,828	2.73	0.00	699	4.35	0.00	1,380	1.24	0.00	335	1.68	0.01
<i>by asset class (for funds):</i>												
Equity	7,828	74.30	83.65	699	69.66	0.00	1,380	79.27	0.00	335	82.02	0.00
Fixed income	7,828	6.97	0.00	699	8.17	0.00	1,380	7.01	0.74	335	6.73	0.61
Real estate	7,828	4.07	0.00	699	4.68	0.12	1,380	2.57	0.00	335	3.98	0.77
Commodities	7,828	2.74	0.00	699	0.91	0.00	1,380	2.95	0.71	335	1.78	0.01
Money market	7,828	0.51	0.00	699	0.37	0.57	1,380	0.79	0.05	335	0.21	0.01
Other asset class	7,828	11.40	0.00	699	16.22	0.00	1,380	7.41	0.00	335	5.27	0.00
<i>by region (for equity & funds with equity):</i>												
Germany	7,828	30.45	16.84	699	17.86	0.00	1,380	35.69	0.00	335	30.81	0.56
Multinational	7,828	26.73	18.67	699	40.91	0.00	1,380	21.97	0.00	335	29.77	0.00
Europe	7,828	16.89	10.14	699	16.65	0.18	1,380	18.66	0.00	335	19.13	0.01
Asia	7,828	10.04	0.00	699	9.36	0.10	1,380	8.54	0.06	335	9.43	0.78
North America	7,828	6.86	0.00	699	3.91	0.00	1,380	8.46	0.00	335	5.60	0.89
South America	7,828	2.33	0.00	699	3.67	0.00	1,380	1.77	0.03	335	1.74	0.20
Africa	7,828	0.09	0.00	699	0.07	0.41	1,380	0.05	0.14	335	0.06	0.51
Other region	7,828	6.65	0.00	699	8.16	0.04	1,380	4.72	0.00	335	4.72	0.01
<i>Diversification (in %)</i>												
Unsystematic variance share (4 factor, 01/2003-09/2009)	7,828	34.13	36.74	699	32.09	0.00	1,380	35.75	0.00	335	37.60	0.00
HHI 100	7,828	11.78	4.28	699	6.57	0.00	1,380	14.05	0.00	335	12.40	0.65
Number of positions	7,828	13.92	11.00	699	14.50	0.12	1,380	12.25	0.00	335	10.49	0.00
<i>Performance & Factor loadings (annualized from daily data from 01/2003 - 09/2009, in %)</i>												
Alpha (4 factor)	7,828	-3.21	-0.90	699	-3.18	0.93	1,380	-5.71	0.01	335	-4.32	0.31
Beta	7,828	0.74	0.75	699	0.65	0.00	1,380	0.75	0.73	335	0.70	0.01
SMB	7,828	0.35	0.36	699	0.37	0.38	1,380	0.29	0.00	335	0.30	0.00
HML	7,828	-0.04	-0.02	699	-0.03	0.13	1,380	-0.07	0.00	335	-0.07	0.03
MOM	7,828	-0.13	-0.12	699	-0.11	0.05	1,380	-0.18	0.00	335	-0.16	0.01

Table 2: Demographics of switchers

Note: This table presents the results from the probit regressions on switchers. The dependent variable in columns (1) and (2) is a dummy variable equal to one when an investor switches from financial advice under the commission-based scheme to financial advice under the flat-fee scheme (Switchers) and zero if the client continues to receive commission-based scheme advice. As explanatory variables, we use socio-demographic information on the client's age (Age), marital status (Married), gender (Gender), whether they hold a PhD (PhD), length of the relationship with the bank (Length of relationship), whether they currently live in Germany (German resident) and whether they work as employees (Employed), are retired (Retired) or have another job (Other). We also include information on their portfolio and trading behavior. All variables that require a time-series to be computed use the previous 12 months. We include the average portfolio value in euros, the turnover from purchases, sales and the entire portfolio as well as the fees paid and a variable showing whether the flat-fee scheme would have been beneficial in terms of costs using the previous 12 months. We also include information on the asset allocation in September 2009. We show the allocation by instrument, asset class and regional focus. The asset class and the regional focus account only for funds and single stocks, not the total portfolio. Finally, we provide information on clients' diversification using the unsystematic variance share from a 4-factor model as well as the Herfindahl-Hirschman Index (HHI) assuming that a mutual fund holds 100 securities. We finally report average factor loadings for the previous 12 months using the 4-factor model. The 4-factor model uses the German CDAX and its constituents to build daily factors. Data on the investors come from the bank, while data on asset allocations come from the bank and Thomson Reuters Eikon. Other market data are taken from Thomson Reuters Financial Datastream. ***, **, and * indicate that the coefficient estimates are significantly different from zero at the 1%, 5%, and 10% levels, respectively. We use heteroscedasticity-robust standard errors.

	(1)	(2)
	Flat-fee advice (Switchers) to commission-based advice	Flat-fee advice (Switchers) to commission-based advice
<i>Socio-demographics</i>		
Age (in years)	-0.0041* (0.0024)	-0.0030 (0.0025)
Married (1 = married)	0.1133*** (0.0452)	0.0957** (0.0462)
Gender (male = 1)	-0.0460 (0.0564)	-0.0238 (0.0573)
Ph. D. (yes = 1)	0.0149 (0.0753)	0.0066 (0.0768)
Length of relationship (in years)	0.0077 (0.0064)	0.0011 (0.0066)
Risk class (1 = low, 5 = high)	0.0382** (0.0170)	0.0497*** (0.0181)
German resident (yes = 1)	-0.2293** (0.1082)	-0.2446** (0.1108)
Employee (yes = 1)	-0.0487 (0.0448)	-0.0734 (0.0459)
Retired (yes = 1)	0.0271 (0.0749)	0.0196 (0.0767)
<i>Portfolio & Trading (previous 12 months)</i>		
Portfolio value (past 12 months, in Euro)	0.0000*** (0.0000)	0.0000*** (0.0000)
Turnover total portfolio (past 12 months, in % per month)	-0.6289* (0.3280)	-0.4377 (0.3333)
Trading Fees paid (past 12 months, in Euro)	-0.0001*** (0.0000)	-0.0001** (0.0000)
Advantage if fee-based scheme (past 12 months, in Euro)	0.0002*** (0.0000)	0.0001*** (0.0000)
<i>Asset Allocation (in %)</i>		
<i>by instrument:</i>		
Single stocks		-0.0259 (0.4680)
Single bonds		-0.0607 (0.5116)
Funds (active)		0.5049 (0.4522)
Funds (passive)		-1.0391** (0.4954)
Certificates		0.5106* (0.2715)

contd.	(1)	(2)
	Flat-fee advice (Switchers) to commission-based advice	Flat-fee advice (Switchers) to commission-based advice
<i>by asset class (for funds):</i>		
Equity		-2.1317*** (0.5463)
Fixed income		-0.2255 (0.3773)
Money Market		-1.0678 (0.7096)
Commodities		-1.3303* (0.7247)
Real estate		-0.8599** (0.3650)
<i>by region (for equity & funds with equity):</i>		
Germany		1.7941*** (0.4491)
Europe		1.5412*** (0.4379)
North America		1.8443*** (0.5059)
Africa		0.9303 (1.1184)
South America		2.6391*** (0.4954)
Asia		1.2418*** (0.4558)
Multinational		1.9810*** (0.4099)
Other region		2.0408*** (0.4642)
<i>Diversification</i>		
Unsystematic variance share (4 factor)	0.2159* (0.1251)	0.1496 (0.1374)
HHI 100 (in %)	-0.6331*** (0.1597)	-0.7723*** (0.2491)
<i>Performance & Factor loadings (previous 12 months)</i>		
Alpha (4 factor) (in %)	0.2395** (0.1098)	0.2710** (0.1302)
Beta (in %)	-0.3588*** (0.0968)	-0.0473 (0.1186)
SMB (in %)	0.1659 (0.1071)	-0.1538 (0.1251)
HML (in %)	-0.0967 (0.1079)	-0.0435 (0.1220)
MOM (in %)	0.0652 (0.1216)	-0.0545 (0.1449)
Constant	-1.1281*** (0.2181)	-1.2188*** (0.3735)
Observations	8,527	8,527
R-squared (pseudo)	0.0493	0.0881

Table 3: Event time study on the flat-fee scheme's impact

Note: This table presents a difference-in-difference analysis in event time for clients switching to the flat-fee scheme relative to a propensity-score-matched control group. Event time is set to 1 after the switch to the flat-fee scheme and zero otherwise. Fee is 1 for all clients switching to the flat-fee scheme. Fee x Event Time is the interaction effect of the two. Panel A includes the regressions on portfolio allocation and advice usage. We report the Herfindahl-Hirschman Index (HHI), assuming that a mutual fund holds 100 securities; the unsystematic variance share from a 4-factor model, the share of active funds, and the number of talks per month. Panel B includes measures of portfolio performance and trading activity. We show the portfolio performance (4-factor alpha), the monthly portfolio turnover, and the monthly portfolio value in euros. Panels A and B report the results for the period from 12 months before and 12 months after the switch in event time. Panels C and D report the results of the same analyses as panels A and B but for 36 months before and after the switch. We use investor fixed effects. Standard errors are double-clustered on portfolio ID and month-by-year. ***, **, and * indicate that the coefficient estimates are significantly different from zero at the 1%, 5%, and 10% levels, respectively.

<i>Panel A: Portfolio allocation & Advice usage (12 months before and after the switch)</i>				
	(1)	(2)	(3)	(4)
	HHI	Unsys. variance share	Share of active funds	Talks per month
Event time (dummy)	0.0120*** (0.00402)	-0.00984 (0.00701)	-0.0198*** (0.00541)	-0.108 (0.0914)
Fee (dummy) x Event time (dummy)	-0.0439*** (0.00560)	-0.0203** (0.00888)	0.129*** (0.00954)	1.960*** (0.220)
Investor fixed effects	YES	YES	YES	YES
Observations	32,827	32,881	32,827	19,765
R-squared	0.777	0.780	0.872	0.619
<i>Panel B: Portfolio performance & Trading activity (12 months before and after the switch)</i>				
	(1)	(2)	(3)	
	Portfolio performance	Portfolio turnover	Portfolio value	
Event time (dummy)	-0.0189** (0.00812)	0.00220 (0.00172)	4,679*** (1,568)	
Fee (dummy) x Event time (dummy)	0.0323** (0.0120)	0.0267*** (0.00314)	14,614*** (3,302)	
Investor fixed effects	YES	YES	YES	
Observations	32,881	32,879	32,879	
R-squared	0.448	0.849	0.975	
<i>Panel C: Portfolio allocation & Advice usage (36 months before and after the switch)</i>				
	(1)	(2)	(3)	(4)
	HHI	Unsys. variance share	Share of active funds	Talks per month
Event time (dummy)	0.0207*** (0.00571)	-0.0281*** (0.00828)	-0.0328*** (0.00850)	-0.0672 (0.0987)
Fee (dummy) x Event time (dummy)	-0.0578*** (0.00697)	0.00684 (0.0113)	0.177*** (0.0124)	2.217*** (0.158)
Investor fixed effects	YES	YES	YES	YES
Observations	86,549	86,694	86,549	49,794
R-squared	0.632	0.587	0.777	0.548
<i>Panel D: Portfolio performance & Trading activity (36 months before and after the switch)</i>				
	(1)	(2)	(3)	
	Portfolio performance	Portfolio turnover	Portfolio value	
Event time (dummy)	-0.00539 (0.00606)	0.00127 (0.00238)	10,324*** (2,743)	
Fee (dummy) x Event time (dummy)	0.0350*** (0.00890)	0.0167*** (0.00328)	30,774*** (4,988)	
Investor fixed effects	YES	YES	YES	
Observations	86,694	86,648	86,648	
R-squared	0.207	0.668	0.904	

Table 4: Analysis on cost advantages in an event time study

Note: This table presents panels in an event time study for flat-fee scheme clients. The dependent variable is trading in active mutual funds. Therefore, each trade is flagged with one if it is a mutual fund trade and zero otherwise. Column (1) illustrates mutual fund trading in the 7 days after an advisor contact, whereas column (2) shows mutual fund trades in the 30 days after an advisor contact. Columns (3) and (4) show mutual fund trading in the 7 and 30 days before an advisor contact. Event Time is set to 1 after the switch to the flat-fee scheme and zero otherwise. Fee is 1 for all clients switching to the flat-fee scheme. Fee x Event Time is the interaction effect of the two. Recommended is set to 1 if a mutual fund has been recommended by a financial advisor to the clients. Fee x Event Time x Recommended is the interaction effect of the three. We use investor fixed effects. Standard errors are double-clustered on portfolio ID and month-by-year. ***, **, and * indicate that the coefficient estimates are significantly different from zero at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)
	Mutual fund trading (Day 0 to 7)	Mutual fund trading (Day 0 to 30)	Mutual fund trading (Day -7 to 0)	Mutual fund trading (Day -30 to 0)
Event time (dummy)	0.0271 (0.0295)	0.0361 (0.0337)	0.105 (0.0804)	0.0463 (0.0603)
Fee (dummy) x Event time (dummy)	-0.0929* (0.0477)	-0.0713* (0.0410)	-0.0110 (0.0924)	0.0420 (0.0709)
Fee (dummy) x Event time (dummy) x Recommended (dummy)	0.209*** (0.0234)	0.222*** (0.0170)		
Investor fixed effects	YES	YES	YES	YES
Observations	7,304	19,094	3,500	16,179
R-squared	0.453	0.456	0.582	0.530

Table 5: Test for the sunk-cost fallacy

Note: This table presents the results from the cross-sectional regressions on the percentage change in the mutual fund share and the percentage increase in the number of talks from the month of switching to twelve months after the switch. This analysis focuses on switchers to the flat-fee scheme only. The fee more expensive dummy is a dummy variable equal to one when a flat-fee scheme client pays more under the flat-fee scheme relative to his/her costs in the previous year and zero otherwise. Fee in % differentiates clients by the percentage they have to pay under the flat-fee scheme. All tests reject the presence of collinearity. We control for the socio-demographic information on the client's age (Age), marital status (Married), gender (Gender), whether they hold a PhD (PhD), length of the relationship with the bank (Length of relationship), whether they currently live in Germany (German resident) and whether they work as employees (Employed), are retired (Retired) or have another job (Other). We also include information on their portfolio and trading behavior. We use heteroscedasticity-robust standard errors following. ***, **, and * indicate that the coefficient estimates are significantly different from zero at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Change in fund share	Change in fund share	Change in fund share	Change in talks	Change in talks	Change in talks
<i>Sunk-cost fallacy/ buffet effect measures</i>						
Fee more expensive (dummy)		0.206 (0.178)	0.208 (0.179)		0.732 (0.489)	0.771 (0.491)
Portfolio value (in thousand euros)	0.000186 (0.000186)	0.000183 (0.000181)	0.000172 (0.000193)	-0.000370 (0.00231)	-0.000412 (0.00227)	-0.00323* (0.00188)
Fee in % (medium group)			0.0854 (0.146)			-3.007*** (1.089)
Fee in % (highest group)			0.0307 (0.182)			-4.398*** (1.322)
<i>Socio-demographics & Performance</i>						
Age (in years)	0.00480 (0.00708)	0.00474 (0.00714)	0.00429 (0.00719)	-0.00197 (0.0262)	-0.00126 (0.0261)	-0.00951 (0.0265)
Married (married = 1)	-0.301*** (0.105)	-0.283** (0.115)	-0.280** (0.115)	-0.544 (0.476)	-0.497 (0.476)	-0.412 (0.480)
Gender (male = 1)	0.337 (0.225)	0.341 (0.225)	0.340 (0.226)	0.313 (0.640)	0.326 (0.639)	0.280 (0.641)
Ph. D. (yes = 1)	0.0776 (0.0715)	0.102* (0.0610)	0.0915 (0.0629)	0.371 (0.794)	0.458 (0.794)	0.211 (0.788)
Length of relationship (in years)	0.000354 (0.0165)	0.000355 (0.0166)	-0.000738 (0.0175)	-0.0804 (0.0761)	-0.0750 (0.0757)	-0.103 (0.0758)
Risk class (1 = low, 5 = high)	0.000354 (0.0165)	0.000355 (0.0166)	-0.000738 (0.0175)	-0.0804 (0.0761)	-0.0750 (0.0757)	-0.103 (0.0758)
German resident (yes = 1)	-0.138 (0.121)	-0.152 (0.112)	-0.151 (0.113)	0.678 (1.216)	0.538 (1.216)	0.807 (1.179)
Employed (yes = 1)	-0.0764 (0.0936)	-0.0678 (0.0956)	-0.0707 (0.0927)	-0.710 (0.446)	-0.680 (0.446)	-0.662 (0.449)
Retired (yes = 1)	-0.140 (0.237)	-0.148 (0.237)	-0.142 (0.237)	-1.704* (0.910)	-1.721* (0.908)	-1.641* (0.909)
Performance (Alpha)	0.110 (0.0739)	0.124* (0.0699)	0.130* (0.0737)	0.0292 (0.443)	0.00144 (0.443)	0.205 (0.439)
Constant	0.0131 (0.333)	-0.0408 (0.309)	-0.0381 (0.386)	1.559 (2.011)	1.381 (1.996)	6.277*** (2.333)
Observations	620	620	620	440	440	440
R-squared	0.024	0.030	0.030	0.030	0.034	0.052

Table 6: Test for the novelty effect

Note: This table presents a difference-in-difference analysis in event time for clients switching from being self-directed to advice under the flat-fee scheme and clients switching from being self-directed to advice under the commission-based scheme. Neither group has received advice before. Event Time is set to 1 after the switch to the flat-fee scheme and zero otherwise. Fee is 1 for all clients switching to the flat-fee scheme. Fee x Event Time is the interaction effect of the two. Panel A includes the regressions on portfolio allocation and advice usage. We report the Herfindahl-Hirschman Index (HHI), assuming that a mutual fund holds 100 securities; the unsystematic variance share from a 4-factor model; the share of active funds; and the number of talks per month. Panel B includes measures of portfolio performance and trading activity. We show the portfolio performance (4-factor alpha), the monthly portfolio turnover, and the monthly portfolio value in euros. Panels A and B report the results for the period from 12 months before and 12 months after the switch in event time. Panels C and D report the results of the same analyses as panels A and B but applied to 36 months before and after the switch. We use investor fixed effects. Standard errors are double-clustered on portfolio ID and month-by-year. ***, **, and * indicate that the coefficient estimates are significantly different from zero at the 1%, 5%, and 10% levels, respectively.

<i>Panel A: Advice usage & Portfolio allocation (12 months before and after the switch)</i>				
	(1)	(2)	(3)	(4)
	HHI	Unsys. variance share	Share of active funds	Talks per month
Event time (dummy)	-0.0289*** (0.00405)	-0.0101* (0.00578)	0.0308*** (0.00602)	
Fee (dummy) x Event time (dummy)	-0.0521*** (0.0117)	-0.0550*** (0.0103)	0.151*** (0.0170)	not applicable
Investor fixed effects	YES	YES	YES	
Observations	45,229	45,354	45,229	
R-squared	0.713	0.792	0.860	
<i>Panel B: Trading activity & Portfolio performance (12 months before and after the switch)</i>				
	(1)	(2)	(3)	
	Portfolio performance	Portfolio turnover	Portfolio value	
Event time (dummy)	0.0242* (0.0138)	0.0139*** (0.00167)	19,563*** (1,956)	
Fee (dummy) x Event time (dummy)	-0.00175 (0.0171)	0.0286*** (0.00330)	9,705*** (3,525)	
Investor fixed effects	YES	YES	YES	
Observations	44,996	44,959	44,959	
R-squared	0.431	0.813	0.917	
<i>Panel C: Portfolio allocation & Advice usage (36 months before and after the switch)</i>				
	(1)	(2)	(3)	(4)
	HHI	Unsys. variance share	Share of active funds	Talks per month
Event time (dummy)	-0.0268*** (0.00496)	-0.0294*** (0.00716)	0.0202*** (0.00695)	
Fee (dummy) x Event time (dummy)	-0.0545*** (0.0110)	-0.0283** (0.0130)	0.178*** (0.0177)	not applicable
Investor fixed effects	YES	YES	YES	
Observations	116,221	116,585	116,221	
R-squared	0.643	0.642	0.802	
<i>Panel D: Portfolio performance & Trading activity (36 months before and after the switch)</i>				
	(1)	(2)	(3)	
	Portfolio performance	Portfolio turnover	Portfolio value	
Event time (dummy)	0.0296* (0.0165)	0.00486** (0.00215)	29,175*** (2,683)	
Fee (dummy) x Event time (dummy)	-0.00851 (0.0136)	0.0219*** (0.00396)	24,487*** (5,746)	
Investor fixed effects	YES	YES	YES	
Observations	115,699	115,546	44,959	
R-squared	0.262	0.674	0.917	

Table 7: Following in an event time study

Note: This table presents panels in an event time study for flat-fee scheme clients receiving financial advice. The dependent variable is following, which is a dummy equal to one if a trade follows financial advice and 0 if the advice is not followed. Event Time is set to 1 after the switch to the flat-fee scheme and zero otherwise. Fee is 1 for all clients switching to the flat-fee scheme. Fee x Event Time is the interaction effect of the two. Fees (%) is the initial charge of a mutual fund. We include interaction effects of these variables. Column (1) refers to following during the 7 days after an advisor interaction, whereas columns (2) and (3) illustrate following during the 30 days after an advisor interaction. We use investor fixed effects. Standard errors are double-clustered on portfolio ID and month-by-year. ***, **, and * indicate that the coefficient estimates are significantly different from zero at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)
	Following (Day 0 to 7)	Following (Day 0 to 30)	Following (Day 0 to 30)
Event time (dummy)	-0.0530 (0.0530)	-0.0519 (0.0630)	-0.0754 (0.0555)
Fee (dummy) x Event time (dummy)	0.389*** (0.0672)	0.535*** (0.0672)	0.583*** (0.0585)
Fees (%)			0.790 (1.621)
Event time (dummy) x Fees (%)			1.347 (2.161)
Fee (dummy) x Fees (%)			0.574 (1.867)
Fee (dummy) x Event time (dummy) x Fees (%)			-2.545 (2.458)
Investor fixed effects	YES	YES	YES
Observations	9,120	13,430	13,430
R-squared	0.502	0.499	0.500

Table 8: Following of purchase and sell recommendations

Note: This table reports summary statistics on followed purchase (panels A and B) and sell (panels C and D) recommendations of commission-based scheme clients and switchers to the flat-fee scheme before and after the actual switch date. The security characteristics come from the bank and are enriched with data from Thomson Reuters Eikon. The percentage numbers provided in this table are based on counts of the purchase and sell recommendations that were followed. Panels A and C show a split by asset class, and panels B and D show a split by region. We group commodity and money market funds together because recommendations are few. We report numbers for switchers and their propensity-score-matched controls. Columns 1 and 2 split the sample before the switch into switchers and those matched investors who remain in the commission-based scheme. Columns 3 and 4 split the sample after the switch to the flat-fee scheme.

	Before switch date in fee scheme				After switch date in fee scheme			
	N	Following purchase recommendations (inducement)	N	Following purchase recommendations (switchers)	N	Following purchase recommendations (inducement)	N	Following purchase recommendations (switchers)
<i>PANEL A: Following by asset class (in %)</i>								
Equity	382	31.15	1,528	15.18	908	29.85	12,062	65.08
Fixed income	134	24.63	417	7.91	165	23.03	1,935	62.69
Real estate	1	0.00	6	0.00	11	18.18	129	60.47
Commodity & money market	2	50.00	2	0.00	1	0.00	33	63.64
<i>PANEL B: Following by region (in %)</i>								
Multi-national	202	33.66	858	17.02	443	26.86	5,365	63.93
Europe	81	25.93	269	10.78	194	26.80	2,780	66.44
Asia	6	16.67	45	8.89	41	34.15	790	66.58
South America	0	0.00	5	0.00	4	50.00	55	54.55
Germany	21	33.33	83	24.10	50	42.00	751	66.31
North America	28	35.71	93	6.45	60	35.00	1,021	65.43
Other & Africa	0	26.19	0	12.99	0	34.91	7	66.86
	Before switch date in fee scheme				After switch date in fee scheme			
	N	Following Sell Recommendations (inducement)	N	Following Sell Recommendations (switchers)	N	Following Sell Recommendations (inducement)	N	Following Sell Recommendations (switchers)
<i>PANEL C: Following by asset class (in %)</i>								
Equity	179	49.16	665	30.68	457	35.89	5,702	81.27
Fixed income	28	64.29	58	39.66	59	47.46	1,004	84.66
Real estate	2	0.00	15	26.67	7	28.57	35	62.86
Commodity & money market	2	0.00	1	0.00	1	0.00	27	81.48
<i>PANEL D: Following by region (in %)</i>								
Multi-national	93	50.54	281	36.65	207	40.10	2,537	81.43
Europe	15	33.33	125	25.60	82	45.12	1,076	82.16
Asia	18	55.56	97	21.65	53	28.30	525	78.10
South America	10	80.00	30	26.67	19	26.32	170	71.76
Germany	17	41.18	39	33.33	36	13.89	426	84.04
North America	3	33.33	17	11.76	14	35.71	303	87.79
Other & Africa	0	48.39	2	35.23	0	40.38	10	81.00

Table 9: Robustness: advisor fixed effects

This table presents a difference-in-difference analysis in event time for clients switching to the flat-fee scheme relative to a propensity-score-matched control group controlling for advisor fixed effects. Event time is set to 1 after the switch to the flat-fee scheme and zero otherwise. Fee is 1 for all clients switching to the flat-fee scheme. Fee x Event Time is the interaction effect of the two. Panel A includes the regressions on portfolio allocation and advice usage. We report the Herfindahl-Hirschman Index (HHI), assuming that a mutual fund holds 100 securities; the unsystematic variance share from a 4-factor model; the share of active fund, and the number of talks per month. Panel B includes measures of portfolio performance and trading activity. We show the portfolio performance (4-factor alpha), the monthly portfolio turnover, and the monthly portfolio value in euros. Panels A and B report the results for the period from 12 months before and 12 months after the switch in event time. Panels C and D report the results of the same analyses as panels A and B but applied to 36 months before and after the switch. Standard errors are double-clustered on advisor ID and month-by-year. ***, **, and * indicate that the coefficient estimates are significantly different from zero at the 1%, 5%, and 10% levels, respectively.

<i>Panel A: Advice usage & Portfolio allocation (12 months before and after the switch)</i>				
	(1)	(2)	(3)	(4)
	HHI	Unsys. variance share	Share of active funds	Talks per month
Event time (dummy)	-0.00564 (0.00545)	-0.0124 (0.0124)	0.00197 (0.0100)	-0.0893 (0.0974)
Fee (dummy)	0.00529 (0.0114)	-0.0126 (0.0236)	-0.0399 (0.0278)	-0.0308 (0.167)
Fee (dummy) x Event time (dummy)	-0.0261*** (0.00738)	-0.0187 (0.0147)	0.108*** (0.0107)	1.985*** (0.170)
Advisor fixed effects	YES	YES	YES	YES
Observations	19,100	19,126	19,100	18,401
R-squared	0.060	0.067	0.098	0.290
<i>Panel B: Trading activity & Portfolio performance (12 months before and after the switch)</i>				
	(1)	(2)	(3)	
	Portfolio performance	Portfolio turnover	Portfolio value	
Event time (dummy)	-0.0240 (0.0194)	0.00440 (0.00419)	2,192 (2,916)	
Fee (dummy)	-0.0244* (0.0138)	-0.000685 (0.00659)	-59,971** (26,738)	
Fee (dummy) x Event time (dummy)	0.0408* (0.0220)	0.0251*** (0.00480)	16,227*** (1,423)	
Advisor fixed effects	YES	YES	YES	
Observations	19,126	19,126	19,126	
R-squared	0.030	0.104	0.086	
<i>Panel C: Portfolio allocation & Advice usage (36 months before and after the switch)</i>				
	(1)	(2)	(3)	(4)
	HHI	Unsys. variance share	Share of active funds	Talks per month
Event time (dummy)	-0.0119 (0.00871)	-0.00742 (0.0167)	0.0180 (0.0156)	-0.0920 19,100
Fee (dummy)	0.00774 (0.0108)	0.00188 (0.0208)	-0.0507* (0.0260)	0.0168 (0.132)
Fee (dummy) x Event time (dummy)	-0.0266** (0.0100)	-0.0213 (0.0190)	0.130*** (0.0184)	2.307*** (0.198)
Advisor fixed effects	YES	YES	YES	YES
Observations	50,584	50,646	50,584	46,609
R-squared	0.056	0.050	0.111	0.326
<i>Panel D: Portfolio performance & Trading activity (36 months before and after the switch)</i>				
	(1)	(2)	(3)	
	Portfolio performance	Portfolio turnover	Portfolio value	
Event time (dummy)	0.00176 (0.0212)	-0.000314 (0.00481)	8,039 (9,745)	
Fee (dummy)	-0.00829 (0.0120)	0.00138 (0.00666)	-60,517** (26,381)	
Fee (dummy) x Event time (dummy)	0.0345* (0.0205)	0.0189*** (0.00510)	33,250*** (10,145)	
Advisor fixed effects	YES	YES	YES	
Observations	50,646	50,622	50,622	
R-squared	0.018	0.068	0.085	

Table 10: Robustness: early vs late switchers

This table presents a difference-in-difference analysis in event time for clients switching to the flat-fee scheme early (between September 2009 and July 2012) relative to those switching late (after July 2012). Event Time is set to 1 after the switch to the flat-fee scheme and zero otherwise. Panel A includes the regressions on portfolio allocation and advice usage. We report the Herfindahl-Hirschman Index (HHI), assuming that a mutual fund holds 100 securities; the unsystematic variance share from a 4-factor model; the share of active funds; and the number of talks per month. Panel B includes measures of portfolio performance and trading activity. We show the portfolio performance (4-factor alpha), the monthly portfolio turnover, and the monthly portfolio value in euros. Panels A and B report the results for the period from 12 months before and 12 months after the switch in event time. Panels C and D report the results of the same analyses as panels A and B but applied to 36 months before and after the switch. We use investor fixed effects. Standard errors are double-clustered on portfolio ID and month-by-year. ***, **, and * indicate that the coefficient estimates are significantly different from zero at the 1%, 5%, and 10% levels, respectively.

<i>Panel A: Advice usage & Portfolio allocation (12 months before and after the switch)</i>				
	(1)	(2)	(3)	(4)
	HHI	Unsys. variance share	Share of active funds	Talks per month
Event time (dummy)	-0.0239*** (0.00510)	-0.0308*** (0.0104)	0.0874*** (0.0107)	1.090*** (0.135)
Investor fixed effects	YES	YES	YES	YES
Observations	7,728	7,740	7,728	7,389
R-squared	0.697	0.749	0.806	0.627
<i>Panel B: Trading activity & Portfolio performance (12 months before and after the switch)</i>				
	(1)	(2)	(3)	
	Portfolio performance	Portfolio turnover	Portfolio value	
Event time (dummy)	0.0143 (0.0214)	0.0214*** (0.00262)	21,625*** (3,356)	
Investor fixed effects	YES	YES	YES	
Observations	7,740	7,740	7,740	
R-squared	0.425	0.715	0.980	
<i>Panel C: Portfolio allocation & Advice usage (36 months before and after the switch)</i>				
	(1)	(2)	(3)	(4)
	HHI	Unsys. variance share	Share of active funds	Talks per month
Event time (dummy)	-0.0287*** (0.00594)	-0.0471*** (0.0131)	0.129*** (0.0127)	1.427*** (0.139)
Investor fixed effects	YES	YES	YES	YES
Observations	21,521	21,546	21,521	19,259
R-squared	0.568	0.515	0.705	0.484
<i>Panel D: Portfolio performance & Trading activity (36 months before and after the switch)</i>				
	(1)	(2)	(3)	
	Portfolio performance	Portfolio turnover	Portfolio value	
Event time (dummy)	0.0320 (0.0222)	0.00960*** (0.00282)	45,569*** (6,449)	
Investor fixed effects	YES	YES	YES	
Observations	21,546	21,522	21,522	
R-squared	0.161	0.498	0.911	

Table 11: Robustness: clients with main banking relationship (main accounts)

This table presents a difference-in-difference analysis in event time for clients switching to the flat-fee scheme relative to a propensity-score-matched control group. The analysis is restricted to clients using their account as their main account. Main account users are defined as clients who received at least three salary payments between the start of the observation period in January 2008 and the introduction of the flat-fee scheme in September 2009. Event time is set to 1 after the switch to the flat-fee scheme and zero otherwise. Fee is 1 for all clients switching to the flat-fee scheme. Fee x Event Time is the interaction effect of the two. Panel A includes the regressions on portfolio allocation and advice usage. We report the Herfindahl-Hirschman Index (HHI), assuming that a mutual holds 100 securities; the unsystematic variance share from a 4-factor model; the share of active funds; and the number of talks per month. Panel B includes measures of portfolio performance and trading activity. We show the portfolio performance (4-factor alpha), the monthly portfolio turnover, and the monthly portfolio value in euros. Panels A and B report the results for the period from 12 months before and 12 months after the switch in event time. Panels C and D report the results of the same analyses as panels A and B but for 36 months before and after the switch. We use investor fixed effects. Standard errors are double-clustered on portfolio ID and month-by-year. ***, **, and * indicate that the coefficient estimates are significantly different from zero at the 1%, 5%, and 10% levels, respectively.

<i>Panel A: Advice usage & Portfolio allocation (12 months before and after the switch)</i>				
	(1)	(2)	(3)	(4)
	HHI	Unsys. variance share	Share of active funds	Talks per month
Event time (dummy)	0.00459 (0.00715)	-0.00756 (0.0126)	-0.0187 (0.0125)	0.0171 (0.200)
Fee-advice (dummy) x Event time (dummy)	-0.0436*** (0.0109)	0.0634*** (0.0185)	0.143*** (0.0222)	1.829*** (0.266)
Investor fixed effects	YES	YES	YES	YES
Observations	6,277	6,277	6,277	3,921
R-squared	0.748	0.752	0.856	0.613
<i>Panel B: Trading activity & Portfolio performance (12 months before and after the switch)</i>				
	(1)	(2)	(3)	
	Portfolio performance	Portfolio turnover	Portfolio value	
Event time (dummy)	-0.0233 (0.0222)	0.00591** (0.00246)	7,500*** (2,296)	
Fee-advice (dummy) x Event time (dummy)	0.0282 (0.0326)	0.0203*** (0.00597)	14,468*** (5,457)	
Investor fixed effects	YES	YES	YES	
Observations	6,277	6,277	6,277	
R-squared	0.439	0.835	0.958	
<i>Panel C: Portfolio allocation & Advice usage (36 months before and after the switch)</i>				
	(1)	(2)	(3)	(4)
	HHI	Unsys. variance share	Share of active funds	Talks per month
Event time (dummy)	0.0168 (0.0110)	0.0224 (0.0148)	-0.0270 (0.0210)	0.163 (0.250)
Fee-advice (dummy) x Event time (dummy)	-0.0635*** (0.0134)	0.0230 (0.0205)	0.179*** (0.0285)	1.953*** (0.324)
Investor fixed effects	YES	YES	YES	YES
Observations	16,597	16,597	16,597	9,815
R-squared	0.605	0.568	0.755	0.525
<i>Panel D: Portfolio performance & Trading activity (36 months before and after the switch)</i>				
	(1)	(2)	(3)	
	Portfolio performance	Portfolio turnover	Portfolio value	
Event time (dummy)	-0.0152 (0.0196)	0.00149 (0.00519)	12,306*** (4,647)	
Fee-advice (dummy) x Event time (dummy)	0.0136 (0.0245)	0.0123* (0.00688)	36,096*** (11,082)	
Investor fixed effects	YES	YES	YES	
Observations	16,597	16,595	16,595	
R-squared	0.187	0.689	0.843	

Table 12: Event time study on the flat-fee scheme's impact for likely and unlikely switchers

This table presents a difference-in-difference analysis in event time for clients switching to the flat-fee scheme relative to a propensity-score-matched control group. We split the flat-fee scheme clients into clients who are likely (equal or above-median probability) and unlikely (below-median probability) to switch based on their predicted probability of switching derived from their demographics. Event Time is set to 1 after the switch to the flat-fee scheme and zero otherwise. Fee is 1 for all clients switching to the flat-fee scheme. Fee x Event Time is the interaction effect of the two. Panel A includes the regressions on portfolio allocation and advice usage. We report the Herfindahl-Hirschman Index (HHI), assuming that a mutual fund holds 100 securities; the unsystematic variance share from a 4-factor model; the share of active funds; and the number of talks per month. Panel B includes measures of portfolio performance and trading activity. We show the portfolio performance (4-factor alpha), the monthly portfolio turnover, and the monthly portfolio value in euros. Panels A and B report the results for the period from 12 months before and 12 months after the switch in event time. Panels C and D report the results of the same analyses as panels A and B but applied to 36 months before and after the switch. We use investor fixed effects. Standard errors are double-clustered on portfolio ID and month-by-year. ***, **, and * indicate that the coefficient estimates are significantly different from zero at the 1%, 5%, and 10% levels, respectively.

<i>Panel A: Portfolio allocation & Advice usage (12 months before and after the switch)</i>								
	(1)		(2)		(3)		(4)	
	HHI		Unsys. variance share		Share of active funds		Talks per month	
	<i>Likely</i>	<i>Unlikely</i>	<i>Likely</i>	<i>Unlikely</i>	<i>Likely</i>	<i>Unlikely</i>	<i>Likely</i>	<i>Unlikely</i>
Event time (dummy)	0.0134** (0.00593)	0.0107* (0.00542)	0.000742 (0.00896)	-0.0440*** (0.0104)	-0.0281*** (0.00911)	-0.0119* (0.00615)	-0.194 (0.127)	0.0371 (0.123)
Fee (dummy) x Event time (dummy)	-0.0429*** (0.00838)	-0.0452*** (0.00762)	-0.0170 (0.0113)	0.00173 (0.0157)	0.119*** (0.0139)	0.140*** (0.0128)	1.863*** (0.176)	2.015*** (0.167)
Investor fixed effects	YES	YES	YES	YES	YES	YES	YES	YES
Observations	16,495	16,332	16,517	42,673	16,495	16,332	10,739	9,026
R-squared	0.736	0.802	0.735	0.613	0.805	0.897	0.645	0.589
<i>Panel B: Portfolio performance & Trading activity (12 months before and after the switch)</i>								
	(1)		(2)		(3)			
	Portfolio performance		Portfolio turnover		Portfolio value			
	<i>Likely</i>	<i>Unlikely</i>	<i>Likely</i>	<i>Unlikely</i>	<i>Likely</i>	<i>Unlikely</i>		
Event time (dummy)	-0.0377*** (0.0141)	-0.00318 (0.0130)	0.00720*** (0.00258)	-0.00255 (0.00246)	3.744* (2.116)	5.566** (2.254)		
Fee (dummy) x Event time (dummy)	0.0498** (0.0197)	0.0265 (0.0187)	0.0242*** (0.00354)	0.0289*** (0.00397)	12.196*** (3.519)	17.327*** (3.456)		
Investor fixed effects	YES	YES	YES	YES	YES	YES		
Observations	16,517	16,364	16,515	16,364	16,515	16,364		
R-squared	0.432	0.473	0.776	0.880	0.982	0.952		
<i>Panel C: Portfolio allocation & Advice usage (36 months before and after the switch)</i>								
	(1)		(2)		(3)		(4)	
	HHI		Unsys. variance share		Share of active funds		Talks per month	
	<i>Likely</i>	<i>Unlikely</i>	<i>Likely</i>	<i>Unlikely</i>	<i>Likely</i>	<i>Unlikely</i>	<i>Likely</i>	<i>Unlikely</i>
Event time (dummy)	0.0119 (0.00760)	0.0292*** (0.00812)	-0.0116 (0.0106)	-0.0440*** (0.0104)	-0.0287** (0.0133)	-0.0368*** (0.0106)	-0.109 (0.137)	-8.93e-05 (0.147)
Fee (dummy) x Event time (dummy)	-0.0478*** (0.00977)	-0.0676*** (0.00978)	0.00910 (0.0136)	0.00173 (0.0157)	0.163*** (0.0180)	0.192*** (0.0169)	2.110*** (0.179)	2.325*** (0.188)
Investor fixed effects	YES	YES	YES	YES	YES	YES	YES	YES
Observations	43,940	42,609	44,021	42,673	43,940	42,609	27,536	22,258
R-squared	0.576	0.669	0.530	0.613	0.667	0.822	0.543	0.552
<i>Panel D: Portfolio performance & Trading activity (36 months before and after the switch)</i>								
	(1)		(2)		(3)			
	Portfolio performance		Portfolio turnover		Portfolio value			
	<i>Likely</i>	<i>Unlikely</i>	<i>Likely</i>	<i>Unlikely</i>	<i>Likely</i>	<i>Unlikely</i>		
Event time (dummy)	-0.0213 (0.0150)	0.0110 (0.0144)	0.00823** (0.00371)	-0.00548* (0.00320)	11.258** (4.882)	9.419*** (3.353)		
Fee (dummy) x Event time (dummy)	0.0453*** (0.0142)	0.0376** (0.0146)	0.0109** (0.00415)	0.0221*** (0.00412)	24.672*** (6.902)	37.494*** (6.050)		
Investor fixed effects	YES	YES	YES	YES	YES	YES		
Observations	44,021	42,673	43,998	42,650	43,998	42,650		
R-squared	0.158	0.262	0.496	0.748	0.923	0.848		

Table 13: Robustness: alternative bank data

This table presents a difference-in-differences analysis in event time for clients switching to the flat-fee scheme relative to a propensity-score-matched control group for an alternative dataset taken from a branch bank. Event Time is set to 1 after the switch to the flat-fee scheme and zero otherwise. Fee is 1 for all clients switching to the flat-fee scheme. Fee x Event Time is the interaction effect of the two. We report the Herfindahl-Hirschman Index (HHI), assuming that a mutual fund holds 100 securities; the share of actively managed mutual funds; the total value held in actively managed mutual funds in euros; the portfolio buy turnover; the portfolio turnover; and the portfolio value. We report the results for the period from 12 months before and 12 months after the switch in event time. We use investor fixed effects. Standard errors are double-clustered on portfolio ID and month-by-year. ***, **, and * indicate that the coefficient estimates are significantly different from zero at the 1%, 5%, and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	HHI	Share of active funds	Active fund value	Portfolio buy turnover	Portfolio turnover	Portfolio value
Event time (dummy)	-0.00114 (0.00379)	0.0309*** (0.00599)	4,006** (1,983)	-0.00158*** (0.000580)	-0.00150*** (0.000510)	-769.0 (2,557)
Fee (dummy) x Event time (dummy)	-0.0365*** (0.00820)	-0.0108 (0.01000)	13,407*** (3,220)	0.00398*** (0.00139)	0.00404*** (0.00119)	23,630*** (4,427)
Investor fixed effects	YES	YES	YES	YES	YES	YES
Observations	17,530	17,530	17,530	17,885	18,240	17,885
R-squared	0.875	0.926	0.967	0.080	0.064	0.966

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