Financial Advice and Bank Profits*

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Abstract

We use a unique dataset from a large Swiss retail bank containing internal managerial accounting data on revenues and costs per client to analyze how banks and their financial advisors generate profits with individual investors. We document that transactions executed based on optional financial advice are associated with higher bank profits than independently executed trades of the same client. Moreover, when a client decides to fully delegate account management to the bank, bank profits with this customer increase significantly. We find trades in structured products to generate the highest transaction-related profits for the bank. Bank-own mutual funds are associated with the highest holding-related profits. In addition, we document that profits increase with trade size. Consistently, we show that financial advisors recommend larger trades, trades in structured products, and trades in bank-own mutual funds. Our study is the first to document that financial advisors induce transactions which are associated with above average profits to the bank and thereby above average costs to their clients.

JEL Classification: D14, G11, G21

Keywords: bank profits, financial advice, individual investors, structured products, bank-own mutual funds

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1 Introduction

A large fraction of households relies on financial advice when planning or reviewing their finances.[1] This strong reliance on advice is somewhat surprising given that financial advice is subject to severe agency problems: On the one hand, advisors are expected to help clients to make suitable investment decisions. On the other hand, advisors are also expected to generate revenues for their employer. More specifically, advisors are typically not paid directly by customers for the advice they provide but only indirectly through commissions and fees they generate by selling products to clients. These indirect payments may tilt advisors' recommendations towards products which are associated with higher commissions and fees earned by the bank rather than to products that are most suitable for the client. Moreover, as commissions and fees are typically proportional to the size of transactions, clients may be induced to take on larger positions. In this paper, we use a unique dataset containing internal managerial accounting data from a large Swiss retail bank that has a commission-based remuneration model in place to shed light on the relation between the profits a bank generates with its clients and the recommendations of advisors.[2] Specifically, we first examine whether financial advice impacts the profits our bank generates with its customers. Second, we analyze which trade characteristics and holdings drive a bank's profits earned from individual customers. Finally, we can directly investigate whether advisors induce their clients to trade in a way which is expected to maximize bank profits.

Our dataset provides information on more than 40,000 clients, their approximately 500 advisors, the financial holdings of these clients, and almost 240,000 trades executed by these clients between January 2002 and June 2005. Most importantly, the database contains quarterly managerial accounting data on revenues, costs, and profits generated from each individual client. The customers in our sample can either fully delegate account management to the bank for a fee or they can make use of optional financial advice free of charge. The

[1] For instance, in the U.S., about 19% of individuals rely on their bank advisor and about 29% on other financial advisors, while in Switzerland, which is covered by our study, 38% of individuals make use of financial advice provided by bank employees and 20% talk to other professional financial advisors (BlackRock, 2013).

[2] Advisors at our bank earn a fixed salary as well as a bonus that depends on the overall performance of the bank, the performance of the branch, and their own performance. The performance is measured by means of different key figures such as new money acquired or the fees and commissions generated with clients.

dataset also includes information on all contacts between clients and advisors. This allows us to identify trades influenced by optional financial advice and transactions carried out independently. By investigating the change in bank profits generated with clients that decide to switch from a self-managed to a managed account and by comparing bank profits related to advised and independent trades of the same investor we are able to examine the influence of financial advice on quarterly bank profits in a within-person analysis. Thereby, we overcome the endogeneity problems typically faced by existing studies on financial advice. To the best of our knowledge, our study is the first that uses profitability data on the customer level to shed light on the influence of financial advisors on bank profits as well as the profit generation process of banks in general.

Consistent with our conjecture that advisors act rather in the interest of the bank than in the interest of their clients, we document that when a client decides to fully delegate account management to the bank, the bank's profits with this customer increase significantly. Similarly, transactions executed based on optional financial advice are associated with higher bank profits than independently executed transactions of the same customer. One reason for the higher profitability of advised trades is that advised trades are significantly more likely to be trades in structured products and trades in bank-own mutual funds. We find trades in structured products to generate the highest transaction-related profits for the bank and bank-own mutual funds to generate the highest holding-related profits. Moreover, we find advised trades to be significantly larger than independently executed transactions which also results in higher profits generated by the bank, as commissions and fees are proportional to the size of transactions while there is only limited evidence that transaction-related expenses increase with trade size. Obviously, it could still be the case that this is not problematic from the investors' point of view if these trades also deliver the highest after-cost profits for clients. However, at least in case of structured products such a win-win situation does not exist, as previous research provides strong evidence that structured products are not beneficial for individual investors (e.g., Bergstresser, 2008; Henderson and Pearson, 2011; Hens and Rieger, 2014). To mitigate concerns that these findings are driven by clients contacting their advisors only in case of certain types of trades, for example, in case of trades in structured products,

we reevaluate our results based on the subset of trades that follow advisor-initiated contacts and find all of our main results to hold.

Our study contributes to several strands of research. First, our study relates to the literature on financial advice. Inderst and Ottaviani (2012) show theoretically that if clients naïvely believe that they receive unbiased financial advice despite the fact that advisors are indirectly compensated for advice through fees and commissions they generate, financial advisors can exploit these naïve clients and increase profitability by selling them products with high fees and commissions. In another theoretical study, Gennaioli et al. (2015) show that advisors, which are compensated through the fees and commissions they generate with individual investors, can charge higher fees and commissions the higher the level of trust of individual investors in these advisors. Our study is the first to show empirically that financial advisors tend to sell those products to their clients that generate highest profits for the bank.[3]

Second, we add to the literature on structured products. Hens and Rieger (2014) show theoretically that the most popular structured products do not bring additional utility to investors in a rational framework. In contrast, they rather take advantage of investors' behavioral biases. In an empirical study, Henderson and Pearson (2011) investigate the overpricing of a popular type of structured products in the U.S. and estimate it to amount to about 8%. Moreover, they show that the expected return of these structured products is negative.[4] Despite these apparent drawbacks, structured products enjoy great popularity among investors. In June 2005, at the end of our investigation period, the market for structured products in Switzerland amounts to CHF 172 billion (equivalent to roughly USD 134 billion), of which 46.3% are held by retail investors. Our study contributes to the literature on structured products by first showing that structured products not only generate substantial profits for

[3]Bergstresser et al. (2009) investigate mutual funds distributed in the U.S. and show that mutual funds sold through brokerage firms charge higher fees than funds sold directly to individual investors. Mullainathan et al. (2012) perform an audit study in which they send trained auditors to financial advisors to examine what kind of products financial advisors recommend to retail investors. They document that financial advisors promote actively managed funds that have higher fees even if the client started with a well-diversified, low-fee portfolio. Our study differs from this literature as we take the financial institution's perspective rather than the mutual fund investor's point of view.

[4]Bergstresser (2008) also finds a substantial premium for structured products issued in the U.S., Stoimenov and Wilkens (2005) document similar results for Germany, Szymanowska et al. (2009) report overpricing for structured products issued in the Netherlands, and Burth et al. (2001) document an issue premium for Switzerland (which is covered by our study).

the issuer but also for the distributor. Moreover, because of the high profitability of these products, financial advisors strongly promote them to retail investors, providing a (partial) explanation why retail clients are heavily invested in these products.

Finally, we also contribute to the empirical literature on the determinants of bank profitability. There are several studies that empirically examine various determinants of the profitability of the whole banking sector (e.g., Bikker and Hu, 2002; Albertazzi and Gambacorta, 2009) as well as of individual banks (e.g., Flannery, 1981; Ho and Saunders, 1981). We extend this literature by analyzing drivers of bank profitability on the customer level.

Our results stress the importance of the ongoing debate on commissions and fees paid in the financial services industry that potentially tilt advisors' recommendations towards certain financial products and that incentivize them to promote larger transactions. The recent financial crisis has motivated several countries to consider new regulations better protecting private investors' interests. Most prominently, in June 2014, the European Union published a revised version of its Markets in Financial Instruments Directive (MiFID II).[5] Member States have two years to implement the new rules which will be applicable as of January 2017. However, the new rules only apply to so-called independent advisors.[6] Chalmers and Reuter (2014) document that only 23% of broker clients understand the cost structure of their accounts ("I understand how much money my advisor earns on my account."). Similarly, in a survey among purchasers of retail financial services in Europe, only 18% of respondents state that the way the financial advisor is remunerated influences their confidence in the information or advice received (Chater et al., 2010). Thus, it is questionable whether investors will make a difference between independent and non-independent financial advisors. Moreover, new rules only ban payments financial advisors receive from third parties.[7] This does not necessarily include bank-own products as well as commissions customers pay directly to the bank for

[5] In June 2014, shortly after the European Union, Switzerland (which is covered by our study) issued a draft of the new Federal Financial Services Act/Financial Institutions Act (FFSA/FinIA) that is largely consistent with MiFID II.

[6] "Advisers declaring themselves as independent will need to match the client's profile and interests against a broad array of products available in the market and say whether they will provide the client with a periodic assessment of the suitability of advised products." (European Commission, 2014, p. 12)

[7] "Independent investment advisers and portfolio managers will be required to transfer all fees, commissions or any monetary benefits paid or provided by a third party to the client who should be accurately informed about all such commissions." (European Commission, 2014, p. 12)

transactions in any product, which in our analysis have a substantial influence on profitability and eventually advisors' recommendations. Thus, our study points out that these rule changes might not be sufficient to align interests of financial advisors and clients.

The remainder of our paper is structured as follows. In the next section, we introduce the dataset from the Swiss retail bank and describe our variables. In Section 3, we first investigate whether financial advice impacts the bank's profitability. We then analyze which transactions and which financial holdings are most profitable for the bank. Finally, we examine whether financial advisors tend to sell those products that are expected to maximize profits. Section 4 concludes.

2 Data and variables

2.1 Data and sample selection

The dataset used in this study stems from a large Swiss retail bank, which we will simply call *the bank* henceforth.[8] Our bank offers a broad range of financial products and services to its clients such as checking accounts, savings accounts, retirement savings accounts, securities accounts, mortgages, and loans.[9] It operates a network of bank branches throughout Switzerland and several branches abroad. The data cover the time period from January 2002 to June 2005. This investigation period includes both bearish and bullish market environments. Markets declined sharply following the burst of the dot-com bubble in 2000 and recovered strongly starting in March 2003.

Customers tend to be traditional bank branch clients relying on a strong and long lasting relationship with their bank. The clients in our sample constitute a random sample comprising 90% of the bank's private clients whose main account is denominated in Swiss Francs and whose wealth at the bank exceeds CHF 75,000 (equivalent to roughly USD 56,000 during our

[8]The same dataset has been used in Hoechle et al. (2014). Hence, the subsequent data description is similar to Section 2 of this paper.

[9]The Swiss pension system is based on three pillars: the state pension system, occupational pension provisions, and private pension provisions. Private pension provisions typically take the form of retirement saving accounts that offer higher interest rates than normal savings accounts as well as tax benefits.

investigation period) at least once prior to December 2003.[10] As of December 2003, 42.0% of Swiss residents subject to taxation had a net wealth (including non-financial wealth) of more than CHF 50,000 (Swiss Federal Statistical Office, 2012). Hence, the clients in our sample are wealthier than the median private person in Switzerland. We believe that this characteristic of our dataset is particularly attractive for a study on financial advice and bank profits as wealthier clients provide a larger profit potential for the bank, giving advisors incentives to pay more attention to these clients as compared to low net-wealth individuals. Furthermore, we can be sure that these accounts are not 'play money' accounts used for gambling on the stock market. Our sample contains information on 40,912 clients, assigned to 485 advisors, executing a total of 237,051 trades between January 2002 and June 2005.

2.2 Managed accounts and optional financial advice

When opening an account at our bank, each client is assigned to an advisor. This advisor serves as the main contact person for the client. Clients can either make use of optional financial advice provided by bank employees or they can completely delegate account management to the bank in return for a semi-annual fee. The dataset provides information on whether a client has a managed account. We construct a dummy variable which is equal to one for clients that delegate account management at least once during our investigation period. There are 1,280 (3.1%) customers with managed accounts in our sample. Unfortunately, this variable is time-invariant and we do not know when account management is assumed by the bank. However, as we have data on the management fees which are paid semi-annually for managed accounts, we can determine when clients switch to and from managed accounts. Hence, for every quarter, we create an additional dummy variable that equals one as soon as a client with a managed account starts paying the semi-annual management fee and zero if there are no semi-annual payments. There are 305 clients that decide to delegate the account management to our bank during our investigation period from January 2002 to June 2005 and 117 clients that switch back from a bank-managed account to a self-managed account according to this definition. 85,548 (36.1%) trades are associated with these managed accounts. For

[10] The bank did not provide information on its complete customer base for confidentiality reasons.

1,218 managed accounts there is at least one trade in our sample. There are only 62 managed accounts without any trading activity during our investigation period.

Clients that do not have managed accounts can rely on optional financial advice free of charge provided by bank employees. We have information on 74,001 contacts between these clients and their advisors. In our dataset, contacts may include everything from a client receiving an anonymous mass mailing to an in-person meeting between the client and the advisor. 11,673 contacts are explicitly classified as advisory contact, of which 40.5% are advisor-initiated advisory contacts. Figure 1 illustrates how the number of advisory contacts evolves over time. It fluctuates between 100 and 400 per months and there is a slight upward trend observable.

Clients that do not have a managed account execute a total of 151,503 trades during our sample period. Figure 2 illustrates how these trades are distributed around advisory contacts. Advisory contacts are clearly associated with an increased number of trades. The advisory contact takes place on day t = 0 and trades also peak on this day. However, an exceptionally high number of trades also take place on the days following the advisory contact. Therefore, we classify *advised trades* as trades executed within five days of an advisory contact, that is, between t = 0 and t = 4. This results in 9,988 (4.2%) advised transactions in our dataset. 38.1% of these advised trades take place after a contact that is classified as advisor initiated. For every quarter, we also calculate the number of advised trades per client as percentage of all trades as well as the fraction of trades that follow advisor-initiated contacts. Panels A and B in Figure 3 illustrate the monthly number of trades in our sample as well as the monthly number of advised transactions. In line with the upward trend observable for advisory contacts, the monthly number of advised trades also tends to increase slightly over time.

Our trade classification could be misleading if clients meet with advisors but then do not follow the advice they get but rather trade in other securities instead. To investigate whether our approach to classify advised trades works properly, we analyze a small subset of 558 client-advisor contacts in our dataset for which the securities discussed between the client and the advisor are reported in the bank's internal system (which unfortunately is not the case for all other contacts). If these contacts result in a trade within the following five

days, in more than 90% of cases these trades involve a security mentioned by the advisor.[11] Thus, our definition of advised trades does capture recommendations of advisors that clients typically follow.

There are 2,132 (5.2%) *advised clients* in our dataset, meaning that they trade on advice at least once during our sample period.[12] Advised clients execute 30,252 independent trades besides the 9,988 advised transactions. Hence, even clients that trade on advice at least once execute most of their transactions independently, highlighting the importance of analyzing the impact of optional financial advice on the trade level and not on the client level. Finally, there are 37,500 independent clients neither relying on optional financial advice nor delegating account management in our sample. 21,050 of these clients do not trade at all during our investigation period from January 2002 to June 2005. The remaining 16,450 clients execute a total of 111,263 independent transactions.

2.3 Descriptive statistics

The database provides information on quarterly revenues, expenses, and profits generated with each client. This is an important feature, as focusing on revenues without taking into account costs allows only for an incomplete picture of the drivers of profitability. Moreover, we have detailed information on clients' use of financial products such as clients' checking account holdings, savings, retirement savings, individual positions in securities accounts, mortgages, loans, as well as transaction data. The dataset also includes various investor characteristics such as gender, age, education, employment, and place of residence. Moreover, the dataset contains account information such as whether investors receive product information, whether

[11] Obviously, these percentages could still be driven by clients approaching their advisors with a specific trading idea in mind. However, this does not seem to be the case for the following reasons: First, 330 of these contacts are advisor initiated and if clients trade after an advisor-initiated contact, in more than 90% of all cases they trade in a security mentioned in the advisory talk, indicating that advisors actively approach clients with trading ideas and clients seem to follow these recommendations. Second, there are typically several identical entries across different clients by the same advisor in the database, indicating that advisors contact different clients with the same trading recommendations.

[12] This figure seems low when compared to the 38% of clients relying on advice when planning or reviewing their finances as reported by BlackRock (2013). However, while 5.2% of clients in our sample trade on advice at least once, and about 10% have at least one advisory contact, the survey question is much less specific ("In which, if any, of the following ways do you plan or review your long-term finances? Talking to my bank advisor/Talking to my bank") making the figures hard to compare.

they have an e-banking account, and the length of the bank relationship. Finally, the dataset also includes detailed information on the advisors, including gender, age, number of children, whether the advisor is part of the bank's management, and the number of clients the advisor is responsible for. All information is collected by the bank on the date of the account opening and subsequently updated when new information is provided either by clients or advisors. Appendix A provides detailed descriptions of all variables used throughout the study.

Table 1 reports descriptive statistics on the various characteristics. Profit characteristics are presented in Panel A. The bank generates average total revenues of CHF 483 per client and quarter. The revenue figure contains the deposit fee a client pays, the securities transaction income the client generates, the fee the client pays if account management is delegated to the bank, other fee and commission income, and a residual position for other revenues that can be assigned to a client. This compares with average total expenses of CHF 157 per client and quarter. Expenses include all costs that can be attributed to a client such as labor costs of the financial advisor or costs the client generates in another department. This results in average quarterly profits of CHF 326 the bank generates with each client over our investigation period from January 2002 to June 2005. Clients in the most profitable decile of customers generate about 62.8% of all profits. At the lower end of the distribution there are 7,393 clients (18.1%) generating losses to the bank on average over the whole investigation period. Securities transaction income (CHF 93), other fee and commission income (CHF 114), and interest income (CHF 183) account for 80.8% of total revenues. Securities transaction income consists mainly of fees and commissions that customers pay directly to our bank when trading securities regardless of whether the product was issued by the bank or by another financial institution as well as initial kickbacks the bank receives from product providers. Other fee and commission income includes among other things fees for account keeping, fees for payment transactions, and fees for credit cards as well as recurring kickbacks the bank gets from product providers as long as a client holds a security in the portfolio. Interest income contains the net income from mortgages, loans, savings accounts, and retirement savings accounts calculated according to the market interest rate method. The market interest rate method assumes that assets and liabilities are refinanced at current market conditions. Deposit fees generate CHF

46 (9.5%) per client and quarter on average and management fees CHF 20 (4.2%).[13] Clients with a securities account have to pay semi-annual deposit fees. Management fees for accounts managed by our bank are also paid semi-annually. In order to smooth the distributions of these variables, we spread the deposit fee and the management fee over the quarter preceding the payment and the quarter of the actual payment. Finally, other income contributes CHF 26 (5.5%) per client and quarter on average. Figure 4 presents average quarterly profits (Panel A) and average quarterly revenues by profit center (Panel B) over time between January 2002 and June 2005. Average quarterly revenues and profits per client are lowest at the trough of the dot-com crisis in the first quarter of 2003 and tend to increase thereafter.

Panel B of Table 1 reports portfolio characteristics. The average client holds CHF 219,093 (equivalent to about USD 163,000) in financial wealth at our bank. This number can be compared to the average net wealth of all Swiss residents subject to taxation with net wealth above CHF 50,000 which was CHF 529,011 in December 2003 (including non-financial wealth; Swiss Federal Statistical Office, 2012). Hence, a large part of clients' financial wealth appears to be represented in our dataset and we can reasonably assume that the accounts at our bank typically are the clients' main accounts rather than 'play money' accounts. Securities accounts contribute CHF 136,504 (62.3%), savings accounts CHF 48,808 (22.3%), retirement savings accounts CHF 6,173 (2.8%), checking accounts CHF 20,398 (9.3%), and other positions CHF 7,210 (3.3%). Mortgages and loans are not netted against clients' financial wealth. The average client has a mortgage of CHF 30,844 and a loan of CHF 2,966. On average, clients execute 0.4 trades per quarter amounting to an average quarterly trading volume of CHF 12,334.[14]

Panel C presents various socio-demographic variables on the clients as well as information on their accounts. 53.7% of clients in our sample are male. On average, clients are

[13] Management fees are fees the client pays for the management of managed accounts. This should not be confused with mutual fund management fees. If our clients hold mutual funds and have to pay management fees for those, the respective expenses are directly deducted from the fund investment like in the U.S.

[14] 75.9% of clients have at least once a securities account at our bank over the whole investigation period from January 2002 to June 2005, 72.5% have at least once a savings account, 16.9% hold retirement savings at least once, and 67.6% have a checking account at least once. Over the whole investigation period, 11.8% of clients hold a mortgage at least once, but only 1.2% of bank customers have a loan at least once. Finally, 48.4% of the clients in our sample execute at least one transaction during our investigation period from January 2002 to June 2005.

61.1 years old as of January 2002. Education is based on the highest education a client received and measured by a count variable ranging from 1 to 7. Detailed definitions are provided in Appendix A. 79.6% of the clients in our sample completed a vocational education, 13.6% hold a university degree, and the remaining 6.8% are assigned to categories such as 'unskilled', 'semi-skilled', 'high-school degree', 'higher vocational education', or 'technical college'. 61.3% of clients are employed, 33.2% are retired, and 5.5% belong to other categories such as 'self-employed', 'housewives', or 'students'. The information on the clients' education and employment status is only available for 8,207 and 32,115 customers, respectively. The vast majority of clients (81.5%) lives in Switzerland. Product information is distributed to 77.9% of the clients. It typically takes the form of mass-mailings, provides information about new and existing products, and is only partially personalized to client characteristics. 10.9% of clients in our sample have an e-banking account. The average client is a customer of the bank for 6.4 years as of January 2002.

Finally, Panel D of Table 1 reports advisor characteristics.[15] 58.5% of advisors are male. Advisors are on average 34.5 years old as of January 2002. On average, an advisor has approximately one child. 42.8% of advisors belong to the bank's management. Bank management is defined broadly by our bank. It is a dummy variable that is equal to one, once an advisor reaches a certain hierarchical level within the bank. Experienced and established advisors belong to the management category quite regularly. One advisor is responsible for 526 customers on average.

3 Empirical analysis

The unique structure of our dataset allows us to perform three sets of novel tests. First, we analyze whether financial advice impacts the profits the bank generates with its customers (Section 3.1). Second, we investigate how trade characteristics and holding characteristics affect bank profits (Section 3.2). Third, we analyze whether financial advisors induce trades which are, based on the analysis in Section 3.2, expected to maximize bank profits (Section

[15] For six of the advisors in our sample, we do not have any information on characteristics at all.

3.3).

3.1 Financial advice and bank profits

To investigate potential drivers of client profitability, we first classify clients into a *high profit* and a *low profit* group based on whether the average bank profit per client is larger than or smaller/equal to the median client's average profit. The average bank profit is calculated per client over the whole investigation period from January 2002 to June 2005. We start with a univariate comparison of characteristics across more and less profitable customers.

The results are reported in Table 2. Panel A compares profit characteristics across the two groups of clients. The average quarterly profit earned by the bank from clients in the more profitable client group is about CHF 640 while it is only about CH 13 in the low profit group. Average revenues per client are also significantly higher for more profitable clients across all profit centers. Moreover, average expenses per client are more than twice as large for high profit clients compared to low profit clients. This pattern suggests that focusing on revenues can lead to wrong conclusions.

Panel B reports the comparison of advice characteristics between the groups of high and low profit clients. There are almost no managed accounts in the group of less profitable clients. Moreover, the fraction of advised clients in the group of high profit customers is about 10% and thus significantly higher than the 0.8% of advised clients in the low profit group.

In Panel C, we compare portfolio characteristics between the two groups. Our results show that wealthier clients are significantly more likely to be in the high profit group. Differences in securities accounts, mortgages, loans, and trading activity are particularly pronounced between the two groups. More profitable clients hold securities portfolios that are about five times larger than securities portfolios of less profitable customers. Furthermore, low profit clients barely hold mortgages or loans at all. In addition, while high profit clients execute almost one trade per quarter amounting to a quarterly trading volume of CHF 23,188, trading activity of low profit clients is close to zero. Interestingly, less profitable clients have significantly larger retirement savings accounts than more profitable customers, indicating

that previously agreed upon interest rates paid on these accounts are above current market conditions during our sample period leading to losses for the bank.

Panel D compares client and account characteristics of high and low profit clients. The results show that more profitable clients tend to be male, older, better educated, and tend to live abroad. Furthermore, clients in the low profit group are more likely to get anonymous product information. Both groups are equally likely to have an e-banking account. The average length of the bank relationship is significantly longer in the low profit group but the difference is economically small (0.1 years).

In Panel E, we split our sample of advisors into a high profit and a low profit group based on whether the average bank profit per advisor is larger than or smaller/equal to the median advisor's average profit. We find more profitable advisors to be more likely to be male, older, having more children, being part of the bank's management, and being responsible for fewer clients.

However, since these findings are univariate in nature and as many characteristics such as client age and wealth are significantly correlated, we now turn to a multivariate analysis which allows us to investigate the relation between the profit earned by the bank and different advice, portfolio, client, and advisor characteristics holding all the other characteristics constant. Specifically, we estimate a cross-sectional regression at the client level as well as panel regressions at the client-quarter level with different measures of bank profits as dependent variable. As independent variables we include several advice, portfolio, client, and advisor characteristics. In the panel regressions, we also include time and client fixed effects to control for unobserved heterogeneity which is either constant over time or constant across clients, respectively. As different quarterly observations on one client are clearly not independent (within correlation), we use cluster-robust standard errors and treat each client as a cluster. All portfolio characteristics are denoted in Swiss Francs and are scaled by 1,000.[16]

The results are presented in Table 3. In the first column, we report results from a cross-

[16]Some of our variables have a skewed distribution. Thus, in Table A1 in Appendix B, we rerun our analysis winsorizing profit and portfolio characteristics at the 1% level and the 99% level. Our findings remain qualitatively unchanged. Taking the logarithm of these variables is not an option since observations are often zero or even negative.

sectional regression with the average client profit over the full period as dependent variable. The regression specification in Column 1 contains the average percentage of advised trades per client and a managed account dummy variable that equals one for clients that delegate account management to the bank at least once during our investigation period. The coefficient on the dummy variable for clients that had a managed account in at least one quarter is not statistically different from zero, indicating that delegating account management does not influence average profits per client in the cross-section. The coefficient on the average percentage of advised trades is only weakly statistically significant at the 10% level. Hence, the cross-sectional analysis does not provide much evidence that financial advice influences bank profits.

In Column 1 of Table 3, portfolio characteristics are also averaged over the whole investigation period. Consistent with our univariate findings, the coefficients on the size of the securities portfolio, the size of the savings account, the size of the checking account, the value of mortgages, the value of loans outstanding, the number of trades, and the trading volume are all positive and statistically significant. Also consistent with the univariate analysis, retirement savings seem to generate losses for the bank during our sample period. In addition, we find that neither clients' gender nor their age influence profitability significantly. However, consistent with the univariate comparison, foreign clients are significantly more profitable for the bank than Swiss clients. This might be due to foreign clients' different usage of bank products or it could be driven by differences in the fee structure between foreign clients and Swiss clients. Furthermore, we document that clients who receive product information, that is, mass mailings, generate significantly lower profits. This result is probably driven by the bank sending more product information to clients who are less profitable. The coefficient on the length of the bank relationship is positive and statistically significant at the 5% level, suggesting that clients tend to become more profitable the better they get to know the bank. This is consistent with Gennaioli et al. (2015) who show theoretically that trust has a positive influence on profitability. Whether clients have an e-banking account does not affect profitability. Moreover, we document that female advisors, advisors with more children, advisors who are part of the bank's management, and advisors with fewer clients are associated

with significantly higher bank profits, while the coefficient on advisors' age is statistically insignificant. We can only speculate on the reasons for these patterns. Advisors with children might be considered to be more reliable and trustworthy by clients. The same holds true for advisors that are part of the bank's management. This status might also proxy for being successful as advisors in the past and, thus, having the necessary skills to generate revenues. The negative coefficient on the number of clients suggests that an advisor who is responsible for more clients can spend less time and effort on each individual client. Alternatively, this could also be driven by the bank assigning more profitable clients to advisors with fewer clients.

However, the cross-sectional analysis is necessarily imprecise as values are averaged over time and a client is classified into an investor with fully delegated account management even if the client fulfilled this criterion only in one quarter. In order to address this concern, we take advantage of the panel structure of our dataset. As a starting point, we estimate panel regressions with time fixed effects to pick up general time trends in bank profitability. The dependent variable is quarterly profits earned by the bank from the respective client. The independent variables are the quarterly advice characteristics and portfolio characteristics. Most importantly, the managed account dummy variable is now based on the quarterly management fees paid and therefore time-varying. Also the variable measuring the percentage of advised trades is now calculated for each client and quarter. We also control for (time-invariant) client and advisor characteristics.

The results in Column 2 of Table 3 show that the coefficients on the managed account dummy variable and the percentage of advised trades are now both positive and statistically significant, suggesting that managed accounts and advice-driven trading are profitable for the bank. The coefficients on the other variables remain very similar.

While taking advantage of the panel structure of our data and controlling for time-fixed effects is a first step towards establishing causality, there is still an important endogeneity concern we need to address: Clients relying more heavily on advice may have poor financial skills and spend even more money on financial products if they had not been advised. This problem of the unobservable counterfactual is a severe problem in most existing studies on

the impact of financial advice. Hence, in Column 3, we add client fixed effects to our panel regression to control for unobservable client characteristics which are constant over time. This allows us to isolate the within-person variation of the impact of advice on profits. In the fixed effects regressions, we exclude the mostly time-invariant client and advisor characteristics. The coefficient on the managed account dummy variable now measures the change in quarterly profits when a client switches from a self-managed account to a managed account or back from a managed account to a self-managed account. Similarly, the coefficient on the percentage of advised trades now captures the difference in quarterly profits between quarters with more and less advised transactions after controlling for the average profit of the client.

Results in Column 3 show that the coefficient on the managed account dummy variable increases substantially in size as compared to Column 2 and the statistical significance remains well above the 1% significance level. The coefficient estimate indicates that a switch from a non-managed to a managed account is associated with an increase in the bank's profit from this client of CHF 749 (229.7% of the average quarterly bank profit in the respective sample). The coefficient on the percentage of advised trades becomes economically slightly weaker but gains statistical significance with the t-statistic almost doubling. On average, clients execute 0.5 trades per quarter or one trade every six months. The coefficient estimate on the percentage of advised trades indicates that if a client executes this trade on advice rather than independently, this increases bank profits by about CHF 836 (256.5% of the average quarterly bank profit in the respective sample). Hence, our results document that once a client receives financial advice, bank profits earned with this client increase substantially.

While client fixed effects should alleviate endogeneity concerns to a large extent, there is still one remaining problem even in this setting: It could be the case that clients approach their advisors only in case of more expensive trades. Thus, in Column 4 of Table 3, we rerun the analysis only classifying trades as advised transactions if they follow an advisor-initiated contact. This allows us to focus on trades that result from the advisor's initiative rather than the client's initiative.

In Column 4, the coefficient estimate on the percentage of advised trades that follow advisor-initiated contacts is economically even stronger than the coefficient estimate on all

advised trades in Column 3. Hence, advisors promote certain financial products which are particularly profitable or induce customers to take larger positions which also increase profits.

One explanation for these findings are commission-based remuneration models that incentivize financial advisors to induce transactions that increase bank profits. Financial advisors at this bank have direct financial incentives to increase revenues with clients. While we have no information on the specific numerical details of the individual compensation contracts, we know that advisors usually earn a fixed salary as well as a bonus. This bonus depends on the overall performance of the bank, the performance of the branch, as well as the performance of the advisor. The performance on all levels is derived from various key figures such as the inflow of new money and the commissions and fees generated with individual clients. Based on conversations with representatives of other banks we know that remuneration models are relatively similar across banks. Moreover, even in the absence of direct financial incentives, career concerns are likely to provide indirect incentives for advisors to generate revenues with customers, because often those advisors get promoted that contribute most to the bank's performance.

To investigate the potential drivers of bank profits in more detail, we rerun our analysis for the various profit centers of the bank. In Columns 5 to 10 of Table 3, we again estimate panel regressions using our most conservative specification with client and time fixed effects. The dependent variable is the income for different profit centers and the incurred expenses of the bank, respectively: the deposit fee in Column 5, the securities transaction income in Column 6, the management fee in Column 7, other fee and commission income in Column 8, interest income in Column 9, and expenses in Column 10.

The results in Column 5 show that, as expected, deposit fees are mainly driven by the size of the securities portfolio. Interestingly, clients with managed accounts pay lower deposit fees, probably because the management fee already includes deposit fees. In Column 6, we document that securities transaction income is most strongly influenced by the number of trades and the trading volume. Managed accounts are again associated with lower securities transaction income, probably because the management fee already includes commissions. The coefficient on the percentage of advised trades is positive and significant at the 1% level.

Hence, advisors seem to generate significant transaction-related profits by selling products which are more profitable than others and by inducing customers to take larger positions which also generate higher commission income for the bank. By definition, management fees are mainly driven by managed accounts (Column 7). The results in Column 8 show that the main drivers of other fee and commission income are securities portfolios and checking accounts. Other fee and commission income contains among other things kickbacks from mutual funds and fees from payment transactions. While the former is driven by mutual fund holdings in the securities portfolio, the latter is driven by the number of transactions on the checking account. Clients with managed accounts and clients who rely on advice when trading generate significantly higher other fee and commission income. Hence, advisors also seem to generate higher holdings-related profits probably by tilting their recommendations towards products with higher kickbacks. In Column 9, we find that, as expected, interest income is driven by savings, retirement savings, mortgages, and loans. Finally, in Column 10, larger securities portfolios, more retirement savings, higher mortgages, more transactions, and higher trading volumes are also associated with higher costs for the bank. Moreover, switching to a managed account also increases expenses for the bank significantly. However, the coefficient on the percentage of advised trades is not statistically significant, indicating that more advised transactions do not necessarily increase expenses. As labor costs of financial advisors that can be assigned to individual clients are included in the expense figure, advisors seem to be able to generate higher income for the bank without generating higher costs.

In Table A1 in Appendix B, we run a number of robustness tests. First, we investigate whether the skewed distribution of some of our variables influences results. To this end, we replicate the panel regression with client and time fixed effects from Column 4 of Table 3 and winsorize profit and portfolio characteristics at the 1% level and the 99% level. Results remain very similar. Second, to analyze whether the positive coefficient on the managed account dummy variable is driven by clients delegating account management to the bank or by clients switching back to self-managed accounts, we replicate our analysis separately for the two groups of clients. While the coefficient on the managed account dummy remains positive and statistically significant for clients switching to managed accounts in Column

2, the coefficient turns negative and significant when focusing on clients switching back to self-managed accounts in Column 3. This could be driven by the bank bringing clients to switch back to non-managed accounts if their managed accounts are unprofitable for the bank. Finally, in Columns 4 and 5 of Table A1, we rerun the analysis separately for Swiss and foreign clients. The activity of Swiss and foreign clients might differ because of differences in tax regimes. Moreover, there might be differences in the fee structure for Swiss clients and foreign clients. However, we find results to be similar for the two groups.

3.2 The determinants of transaction- and holding-related bank profits

In this section, we analyze which transactions and which holdings are most profitable for our sample bank. We do not have information on the revenues and expenses generated by each individual trade. However, to still further investigate the determinants of transaction-related profits, we now focus on quarters with only one trade. We use very similar panel regression specifications as in Table 3. We focus on those profit centers which have been shown to be significantly influenced by transactions in Table 3. These are quarterly profits, quarterly commission income, and quarterly expenses. The set of explanatory variables includes dummy variables for trades in different asset classes as well as the actual trade size by asset class. We group transactions into Swiss and foreign bond trades, Swiss and foreign stock trades, bank-own mutual fund trades, trades in mutual funds of partner firms, other mutual fund trades, derivative transactions, and structured product trades. In case of the regression that includes dummy variables for transactions in different asset classes, the omitted base case is the transactions in Swiss bonds. Moreover, we include all portfolio characteristics as control variables, except for the number of trades as there is one trade per quarter in all specifications by definition. We also include the variable on the percentage of advised trades, which by construction becomes a dummy variable in this setting. In addition, every regression contains the managed account dummy variable, and client and time fixed effects. The coefficients on these control variables are not reported for space reasons.

The results are presented in Table 4. In Column 1, we use profits as dependent variable and find that trades in bank-own mutual funds and structured products are the most profitable

ones. Specifically, we document that quarterly bank profits from clients executing a trade in a bank-own mutual fund are on average CHF 271 higher (53.0% of average quarterly bank profits in the respective sample) compared to the average quarterly profits from trades in Swiss bonds of the same client. Moreover, trades in structured products increase average quarterly profits by CHF 181 (35.4% of average quarterly bank profits in the respective sample). In addition, trades in foreign bonds are also associated with significantly positive transaction-related profits. The results in Columns 2 and 3 show that the higher profitability of these transactions is almost entirely driven by higher securities transaction income as transactions do not cause much variation in expenses. One explanation for higher securities transaction income is up-front kickbacks paid by the department that manages the bank's own mutual funds as well as by structured product providers. As our bank does not issue its own structured products, higher bank profits cannot be driven directly by the issue premium of structured products (e.g., Burth et al., 2001; Henderson and Pearson, 2011). In Columns 4 to 6 of Table 4, we replace the dummy variables for different asset classes by the actual size of trades. These variables are again denoted in Swiss Francs and scaled by 1,000. The results show that larger trades in any asset class are associated with higher bank profits (Column 4). Similarly, in Column 5, we document that larger trades in any asset class are also associated with higher securities transaction income. With the exception of foreign bonds and other mutual funds, expenses are still largely unrelated to the trade size in different asset classes (Column 6). These findings show that the bank has a strong incentive to induce trades in bank-own mutual funds, structured products, and foreign bonds as well as trades that are larger in size.

The results in Table 4 suggest that transactions involving structured products are among the most profitable transactions from the bank's perspective. To further analyze transaction-related profits of structured products, we group structured products into different categories. We follow the categorization of the Swiss Structured Products Association (SSPA).[17] In our sample, there are 17,051 transactions in 1,649 different structured products. Since the Swiss

[17]Details on the categorization are available on the website of the Swiss Structured Products Association (SSPA): http://www.svsp-verband.ch

Structured Products Association only categorizes products issued in Switzerland, we can only classify Swiss structured products. There are 12,980 transactions in 1,087 different Swiss structured products in our dataset. Thereof, we are able to categorize 11,684 transactions in 803 products. The most frequently traded structured products are tracker certificates, discount certificates, reverse convertibles, barrier reverse convertibles, and bonus certificates. There are 6,386 (54.7%) trades in tracker certificates (77 different products), 2,553 (21.9%) transactions in discount certificates (296 different products), 1,085 (9.3%) trades in reverse convertibles (191 products), 871 (7.5%) trades in barrier reverse convertibles (177 products), 586 (5.0%) trades in bonus certificates (18 products), and 203 (1.7%) trades in various other structured products (44 products).

To investigate whether the complexity of structured products influences the profits the bank generates with clients, in Table A2 in Appendix B, we rerun our analysis from Table 4 and split structured product trades into transactions in tracker certificates and other structured products. While tracker certificates have linear payoff profiles, all other structured products have more complex non-linear payoffs. Carlin (2009) shows theoretically that financial institutions can exploit uninformed investors and increase profitability by adding complexity to financial products. Moreover, in an empirical study, Célérier and Vallée (2014) investigate retail structured products sold in Europe and find that complex products are associated with higher issue premiums. The results in Columns 1 and 2 of Table A2 show that transactions in tracker certificates appear to generate higher profits for our bank compared to other structured products. However, 80.9% of all transactions in tracker certificates take place in managed accounts. To investigate whether the profitability of structured products differs for managed accounts and non-managed accounts, we replicate the regressions from Columns 1 and 2 excluding trades in managed accounts. Results in Columns 3 and 4 indicate that the profitability of tracker certificates and other structured products is similar. Thus, complexity of structured products as captured by the payoff profile does not significantly influence profitability for the distributor. However, this is not necessarily inconsistent with findings from existing literature as our bank does not issue structured products and therefore our results do not reflect the issue premiums but only trading commissions paid directly by

the customers and initial kickbacks received from product providers.

Next, we focus on holding-related profits. To separate these profits from transaction-related profits, we investigate the drivers of profitability in quarters without any transactions. The regression specifications are again similar to those in Table 3. We focus on those profit centers which have been shown to be significantly influenced by securities holdings in Table 3. The dependent variables are bank profits, deposit fees, management fees, other fee and commission income, and expenses. The independent variables of interest are the holdings in all asset classes. All regressions also include the full set of portfolio characteristics, except for the number of trades and the volume of trades as we focus on quarters without any transactions. We also include the dummy variable for managed accounts, as well as client and time fixed effects as explanatory variables. For space reasons, we only report the coefficients on the holdings in the different asset classes.

Results are shown in Table 5. The findings for bank profits are reported in Column 1. We document that holdings in foreign bonds, Swiss stocks, bank-own mutual funds, and mutual funds of partner firms are associated with higher bank profits while larger holdings of Swiss bonds are associated with lower bank profits. However, the effect is by far strongest for bank-own mutual funds and partner mutual funds. Within the category of mutual funds, holdings in bank-own mutual funds are about six times more profitable than holdings in mutual funds of partner firms. The results in Columns 2 to 5 show the sources of these profits and losses. Larger holdings in bank-own mutual funds are associated with higher management fees and higher other fee and commission income. Moreover, the higher profitability of partner mutual funds seems to be driven by higher deposit fees and again higher other fee and commission income. These two positions outweigh expenses, which are also significantly higher the higher the holdings in mutual funds of partner firms. The high other fee and commission income is most probably due to kickbacks paid by mutual funds as long as clients hold these securities in their portfolios. These findings suggests that the advisors have incentives to promote mutual funds, and within this asset class particularly bank-own mutual funds, if they are stimulated to maximize profits for the bank.

3.3 Do advisors promote trades that are expected to maximize bank profits?

In the final step, we now analyze whether financial advisors promote trades which are, based on the findings in the previous section, expected to maximize bank profits. If advisors recommend transactions that are most profitable for the bank, we expect advised trades to be larger than independently executed transactions and to be more likely to involve foreign bonds, bank-own mutual funds, and structured products. In this section, we do not take into account trades of clients who delegate account management at least once to our bank during our investigation period. First, the set of assets advisors can choose from in case of managed accounts is typically restricted. Second, the profitability of trades differs in managed accounts and self-managed accounts as seen in Table 3 (and in Table A2 in Appendix B). Moreover, the trade-by-trade within-person comparison of advised and independent trades we use in this section allows us to better address the selection and endogeneity problems described above than an analysis of clients switching from and to managed accounts. Thus, we start with a univariate comparison of advised and independent trades.

The results are presented in Table 6. Findings for purchases (Panel A) and sales (Panel B) are reported separately. In Panel A, mostly consistent with our conjecture, we find that advised trades are larger on average and are more likely to involve foreign bonds, foreign stocks, bank-own mutual funds, and structured products. The results on sell transactions in Panel B of Table 6 are similar. Again, we find advised trades to be larger on average and to be more likely to involve Swiss bonds, foreign bonds, foreign stocks, mutual funds, and structured products.

We corroborate these univariate findings by running panel logit regressions of a dummy variable whether a trade is advised or whether a trade is advised and follows an advisor-initiated contact on trade size and dummy variables for the different asset classes. To account for the skewness of trade size, we use the natural logarithm. All regressions include portfolio characteristics (except for the number of trades and the trading volume since we focus on individual trades) and time fixed effects. To be able to estimate marginal effects, we first run

regressions without client fixed effects but we including client and advisor characteristics as additional controls. Moreover, we also run our analysis with client fixed effects. For space reasons, we do not report the coefficients on portfolio, client, and advisor characteristics. We focus on purchases of securities. Sales differ from purchases to the extent that selling a security requires holding it in the portfolio since short sales are not allowed by our bank. Moreover, sales are often driven by liquidity needs.

Results are presented in Table 7. In the first two columns, we report marginal effects. In Column 1, we show that consistent with the results in the previous section, advised trades are larger on average and more likely to involve foreign bonds, bank-own mutual funds, and structured products. Moreover, we document that advised trades are more frequently trades in foreign stocks even though there is not much evidence that these trades are associated with higher profits. The coefficient estimates are largest for bank-own mutual funds and structured products. They suggest that if a trade in a structured product or a bank-own mutual fund takes place, the probability of that trade being an advised transaction is about 4.5 percentage points and 3.1 percentage points higher, respectively compared to trades in Swiss bonds, the base category. Given the overall percentage of advised trades in this sample of 6.7%, these effects are economically meaningful. To mitigate concerns that these findings are driven by clients contacting their advisors only in case of certain types of trades, for example, large trades, trades in bank-own mutual funds, or trades in structured products, we reevaluate our results based on the subset of trades that follow advisor-initiated contacts in Column 2. However, with the exception of the coefficient estimate on foreign bonds that turns insignificant, results remain similar in Column 2, indicating that advisors actively contact their clients with the intention to induce larger trades, trades in structured products, bank-own mutual funds, and foreign stocks. In Columns 3 and 4, we rerun the analysis from Columns 1 and 2 including client fixed effects that account for all client characteristics that remain constant over time. In our most restrictive specification in Column 4, we again find evidence that advisors actively promote larger trades and trades in structured products. The coefficient on bank-own mutual funds remains positive but is borderline insignificant. Finally, in Columns 5 and 6, we add an additional dummy variable to the specifications in Columns

3 and 4 that equals one for structured product transactions that take place before the first listing date of the product. These transactions must take place at the issue price set by the product provider and therefore investors executing these trades are forced to pay the issue premium that is widely documented in the literature (e.g., Burth et al., 2001; Henderson and Pearson, 2011). In Columns 5 and 6, the positive and significant coefficients on both the structured product dummy and the dummy variable for structured products that are purchased before the first listing date suggest that transactions in structured products are even more likely to be advised if they take place before the first listing date. Thus, advised clients are more likely to pay the issue premium which eventually has a negative impact on portfolio performance.[18]

Trades in structured products are particularly attractive for the bank not only because they are highly profitable but also since most of them expire after a rather short period of time. In our sample, the average lifetime of structured products is 1.3 years, while stocks and mutual funds usually do not have a fixed maturity and bonds typically only mature after several years. Hence, an advisor recommending a structured product knows that after some time the client will probably again trade either to sell the underlying if the product delivered the underlying at maturity date or to buy a new asset in case the product was settled in cash. In Table A3 in Appendix B, we rerun the analysis from Table 7 (Columns 1 to 4) and split structured products into tracker certificates and other structured products. We document that advisors mainly promote structured products with non-linear payoff profiles. One reason why advisors do not sell tracker certificates might be that tracker certificates typically have a substantially longer time to maturity or that they do not have a fixed maturity at all. For instance, in our sample, almost 20% of tracker certificates do not mature at all. Thus, they appear less attractive from the advisors' point of view because they do not ensure future transactions.

Overall, we find that advisors are successful in inducing clients to trade those products

[18]In unreported tests, we investigate whether bank profits are higher for structured product transactions taking place before the first listing date. This does not seem to be the case, suggesting that initial kickbacks our bank receives from structured product providers do not differ between transactions taking place before and after the first listing date. Remember, our bank does not issue its own structure products.

that maximize bank profits. Given that these findings are at least partially driven by trades in structured products and these products are known to usually hurt investor performance (e.g., Bergstresser, 2008; Henderson and Pearson, 2011; Hens and Rieger, 2014) and that Hoechle et al. (2014) based on the same dataset show that advised trades in stocks underperform independent trades of the same clients, this is not a win-win situation. Rather, advisors face a conflict of interests and behave in a way that benefits the bank and hurts their clients.

4 Conclusion

In this paper, we investigate how banks with commission-based remuneration models generate profits with individual investors. We find that transactions executed based on optional financial advice are associated with higher bank profits than independently executed transactions. Moreover, we document that when a client decides to fully delegate account management to the bank, the bank's profits with this customer increase significantly. Our results show that trades in structured products generate the highest transaction-related profits for the bank and that trades in bank-own mutual funds generate the highest holding-related profits. Moreover, bank profits tend to increase with trade size, as commissions and fees are proportional to the size of transactions while we find at best limited evidence that transaction-related expenses increase with trade size. Consistently, we show advised trades to be significantly more likely to be trades in structured products and bank-own mutual funds compared to independently executed trades of the same client. Moreover, advised trades are significantly larger than independently executed transactions resulting in higher profits generated by banks.

The unique structure of our dataset allows us to address potential endogeneity issues. We can classify each trade as either an independent or an advised trade. In addition, we are able to observe switches to and from fully delegated account management. This unique feature of our dataset allows us to compare bank profits and expenses in a within-person analysis. To mitigate concerns that our findings are driven by clients contacting their advisors only in case of certain types of trades, for example, large trades or trades in structured products, we reevaluate our results based on the subset of trades that follow advisor-initiated contacts.

In this subset of trades, we find all of our main results to hold. In summary, our paper is the first to document that advisors induce transactions which are associated with above average profits to the bank and thus above average costs to their clients. These findings are of particular importance in light of the ongoing debate on commissions and fees paid in the financial services industry.

While we think that our dataset has many advantages, the main limitation of our study is that all information is from one bank only. Thus, it is a valid question whether this bank, its customers, and its advisors are representative. However, there are no obvious reasons to expect the bank to be different from other financial institutions in any fundamental way. First, according to a recent survey by BlackRock (2013), individual investors' reliance on advice fluctuates roughly between 20% and 40% across a broad range of industrialized countries (Belgium, Canada, France, Germany, Italy, Netherlands, Switzerland, U.K., U.S.). Hence, financial advice is of similar importance across developed countries. Second, even though commission-based remuneration models have come under scrutiny more recently, they are still a wide-spread reward system for financial advisors.[19] Moreover, even if financial advisors do not have direct financial incentives, career concerns are likely to provide at least indirect incentives to increase revenues with clients.[20] Therefore, incentives of financial advisors are expected to be similar across different financial institutions. Finally, to analyze whether our clients and their trading behavior deviates from the trading behavior of individual investors in other samples, we replicate a number of studies on individual investors' behavior that use data from a large U.S. brokerage house, including Barber and Odean (2000, 2001, and 2002), Ivkovic et al. (2008), and Seasholes and Zhu (2010). We find that their results also hold in our dataset. Thus, there is no reason to expect investors in our dataset to behave differently from investors in other samples. We can of course not completely rule out differences between our bank and other financial institutions but this is a problem we share with most studies on individual investors.

[19]See, e.g., "Canada's trouble with investment advisers", The Globe and Mail, November 23, 2013.

[20]See, e.g., "Former brokers say JP Morgan favored selling bank's own funds over others", The New York Times, July 2, 2012.

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Tables

Table 1: Descriptive statistics

This table presents descriptive statistics on advice characteristics (Panel A), profit characteristics (Panel B), portfolio characteristics (Panel C), client characteristics (Panel D), and advisor characteristics (Panel E). For time-varying variables beginning-of-period values (*age*, *length of relationship*) or averages over the sample period from January 2002 to June 2005 are reported (profit characteristics and portfolio characteristics). Appendix A provides detailed descriptions of all variables used throughout the study.

	Mean	10%	Median	90%	St.Dev.	N
Panel A: Profit characteristics						
Avg. profit (CHF)	326.321	-31.214	99.586	763.071	994.419	40,912
Avg. revenues (CHF)	482.917	40.308	193.214	1069.556	1151.986	40,912
Avg. expenses (CHF)	156.597	15.357	107.286	316.143	221.831	40,912
Avg. deposit fee (CHF)	45.958	0.000	12.423	114.571	125.667	40,912
Avg. sec. transaction income (CHF)	92.981	0.000	0.000	192.357	470.947	40,912
Avg. mgmt. fee (CHF)	20.279	0.000	0.000	0.000	216.667	40,912
Avg. other fee/com. income (CHF)	114.442	0.182	32.883	289.643	268.318	40,912
Avg. interest income (CHF)	182.918	3.286	55.643	383.000	620.856	40,912
Panel B: Portfolio characteristics						
Avg. bank wealth (,000; CHF)	219.093	58.522	122.298	412.426	513.541	40,912
Avg. securities account (,000; CHF)	136.504	0.000	51.963	308.202	429.576	40,912
Avg. savings account (,000; CHF)	48.808	0.000	26.912	118.556	77.744	40,912
Avg. retirement savings (,000; CHF)	6.173	0.000	0.000	18.426	20.964	40,912
Avg. checking account (,000; CHF)	20.398	0.000	5.052	52.100	76.458	40,912
Avg. mortgage (,000; CHF)	30.844	0.000	0.000	33.875	200.154	40,912
Avg. loan (,000; CHF)	2.966	0.000	0.000	0.000	43.744	40,912
Avg. # trades	0.439	0.000	0.000	0.857	1.575	40,912
Avg. trading volume (,000; CHF)	12.334	0.000	0.000	22.999	76.642	40,912
Panel C: Client characteristics						
Client male (d)	0.537	0.000	1.000	1.000	0.499	40,912
Client age (years)	61.076	38.000	62.000	83.000	16.668	40,900
Client age $<$ 45 (d)	0.183	0.000	0.000	1.000	0.387	40,900
45 $\leq$ client age $<$ 60 (d)	0.260	0.000	0.000	1.000	0.439	40,900
60 $\leq$ client age $<$ 75 (d)	0.326	0.000	0.000	1.000	0.469	40,900
Client age $\geq$ 75 (d)	0.230	0.000	0.000	1.000	0.421	40,900
Education (1-7)	3.602	3.000	3.000	7.000	1.435	8,207
Employment, employed (d)	0.613	0.000	1.000	1.000	0.487	32,115
Employment, retired (d)	0.332	0.000	0.000	1.000	0.471	32,115
Swiss (d)	0.815	0.000	1.000	1.000	0.389	40,912
Product information (d)	0.779	0.000	1.000	1.000	0.415	40,912
E-banking account (d)	0.109	0.000	0.000	1.000	0.311	40,912
Length of relationship (years)	6.379	3.167	7.083	7.083	1.701	40,912
Panel D: Advisor characteristics						
Advisor male (d)	0.585	0.000	1.000	1.000	0.493	479
Advisor age (years)	34.473	21.000	33.000	51.000	11.178	385
Advisor age $<$ 30 (d)	0.392	0.000	0.000	1.000	0.489	385
30 $\leq$ advisor age $<$ 45 (d)	0.397	0.000	0.000	1.000	0.490	385
Advisor age $\geq$ 45 (d)	0.210	0.000	0.000	1.000	0.408	385
# children	0.808	0.000	0.000	2.000	1.139	479
Part of bank's management (d)	0.428	0.000	0.000	1.000	0.495	479
# clients	526.480	0.000	275.000	1035.000	891.457	431

Table 2: Univariate comparisons of more and less profitable clients and advisors

This table presents mean values of advice characteristics (Panel A), profit characteristics (Panel B), portfolio characteristics (Panel C), client characteristics (Panel D), and advisor characteristics (Panel E) for subsamples of more and less profitable clients and advisors. We classify clients (advisor) into a *high profit* group and a *low profit* group based on whether the average bank profit per client (advisor) is larger than or smaller/equal to the median client (advisor)'s average profit. For time-varying variables beginning-of-period values (*age*, *length of relationship*) or averages over the sample period from January 2002 to June 2005 are reported (profit characteristics and portfolio characteristics). Appendix A provides detailed descriptions of all variables used throughout the study. Means of the subgroups are tested for equality using a standard t-test (t-value). ***, **, * denote statistical significance at the 1%, 5%, 10% level.

	Mean	High profit	Low profit	Difference	t-value	N
Panel A: Profit characteristics						
Avg. profit (CHF)	326.321	639.517	13.124	626.393	67.120***	40,912
Avg. revenues (CHF)	482.917	864.747	101.088	763.660	71.058***	40,912
Avg. expenses (CHF)	156.597	225.230	87.963	137.267	65.809***	40,912
Avg. deposit fee (CHF)	45.958	78.901	13.015	65.886	54.944***	40,912
Avg. sec. transaction income (CHF)	92.981	176.722	9.239	167.483	36.548***	40,912
Avg. mgmt. fee (CHF)	20.279	40.273	0.285	39.989	18.745***	40,912
Avg. other fee/com. income (CHF)	114.442	197.935	30.950	166.985	66.227***	40,912
Avg. interest income (CHF)	182.918	322.833	43.003	279.830	46.785***	40,912
Panel B: Advice characteristics						
Managed account (d)	0.031	0.058	0.004	0.054	31.499***	40,912
Trades on advice (d)	0.052	0.096	0.008	0.088	40.801***	40,912
Panel C: Portfolio characteristics						
Avg. bank wealth (,000; CHF)	219.093	333.291	104.896	228.395	46.133***	40,912
Avg. securities account (,000; CHF)	136.504	231.328	41.680	189.648	45.777***	40,912
Avg. savings account (,000; CHF)	48.808	55.155	42.460	12.695	16.570***	40,912
Avg. retirement savings (,000; CHF)	6.173	4.577	7.769	-3.192	-15.443***	40,912
Avg. checking account (,000; CHF)	20.398	29.120	11.676	17.444	23.226***	40,912
Avg. mortgage (,000; CHF)	30.844	60.456	1.231	59.225	30.258***	40,912
Avg. loan (,000; CHF)	2.966	5.822	0.110	5.712	13.235***	40,912
Avg. # trades	0.439	0.768	0.110	0.659	43.253***	40,912
Avg. trading volume (,000; CHF)	12.334	23.188	1.481	21.707	28.935***	40,912
Panel D: Client characteristics						
Client male (d)	0.537	0.566	0.508	0.058	11.799***	40,912
Client age (years)	61.076	62.082	60.070	2.012	12.230***	40,900
Client age < 45 (d)	0.183	0.154	0.212	-0.059	-15.413***	40,900
$45 \leq$ client age < 60 (d)	0.260	0.267	0.253	0.014	3.201***	40,900
$60 \leq$ client age < 75 (d)	0.326	0.347	0.306	0.042	9.014***	40,900
Client age ≥ 75 (d)	0.230	0.232	0.229	0.003	0.752	40,900
Education (1-7)	3.602	3.727	3.457	0.271	8.554***	8,207
Employment, employed (d)	0.613	0.598	0.629	-0.031	-5.637***	32,115
Employment, retired (d)	0.332	0.351	0.313	0.038	7.141***	32,115
Swiss (d)	0.815	0.742	0.887	-0.144	-38.232***	40,912
Product information (d)	0.779	0.704	0.855	-0.151	-37.519***	40,912
E-banking account (d)	0.109	0.107	0.110	-0.003	-0.873	40,912
Length of relationship (years)	6.379	6.329	6.430	-0.101	-6.036***	40,912
Panel E: Advisor characteristics						
Advisor male (d)	0.585	0.732	0.438	0.295	6.844***	479
Advisor age (years)	34.473	37.990	30.549	7.441	6.906***	385
Advisor age < 30 (d)	0.392	0.202	0.604	-0.402	-8.836***	385
$30 \leq$ advisor age < 45 (d)	0.397	0.547	0.231	0.316	6.666***	385
Advisor age ≥ 45 (d)	0.210	0.251	0.165	0.086	2.083**	385
# children	0.808	1.184	0.433	0.751	7.631***	479
Part of bank's management (d)	0.428	0.690	0.167	0.524	13.623***	479
# clients	526.480	339.963	715.612	-375.649	-4.469***	431

Table 3: Determinants of profits

This table presents a cross-sectional regression (Column 1), panel regressions with time fixed effects (Column 2), and panel regressions with client and time fixed effects (Columns 3 to 10). The dependent variable is either the average profit per client over the whole investigation period from January 2002 to June 2005 (Column 1), the quarterly profit (Columns 2 and 4), the quarterly deposit fee (Column 5), the quarterly securities transaction income (Column 6), the quarterly management fee (Column 7), the quarterly other fee and commission income (Column 8), the quarterly interest income (Column 9), or the quarterly expenses (Column 10). Appendix A provides detailed descriptions of all variables used throughout the study. All portfolio characteristics are denoted in Swiss Francs and scaled by 1,000 except for *# trades*. The t-values (in parentheses) are based on heteroskedasticity-robust White (1980) standard errors in Column 1 and the cluster-robust variant of the Huber–White (Huber, 1967; White, 1982) sandwich estimator which accounts for the dependence of observations within clusters (different quarterly observations for one client) in Columns 2 to 10. ***, **, * denote statistical significance at the 1%, 5%, 10% level.

	Avg. profit (CHF)	Profit (CHF)			Deposit fee (CHF)	Sec. transaction income (CHF)	Mgmt. fee (CHF)	Other fee/com. income (CHF)	Interest income (CHF)	Expenses (CHF)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Advice characteristics										
Managed account (d)	136.093	595.666***	749.199***	745.980***	-105.651***	-209.023***	989.239***	249.286***	-63.123	177.575***
	(1.29)	(6.17)	(5.73)	(5.70)	(-7.35)	(-2.97)	(14.99)	(6.43)	(-1.14)	(11.66)
% advised trades	65.884*	420.155***	368.534***		4.260*	305.269***	-19.966**	43.821***	3.327	5.857
	(1.89)	(6.93)	(13.50)		(1.88)	(14.63)	(-2.47)	(4.07)	(0.51)	(1.36)
% advisor-initiated				412.157***						
				(10.40)						
Portfolio characteristics										
Securities account	0.796***	0.903***	0.877***	0.876***	0.127***	0.114	0.234**	0.162***	0.248*	0.075***
	(6.32)	(8.45)	(5.00)	(4.99)	(4.52)	(1.28)	(2.31)	(3.37)	(1.66)	(3.76)
Savings account	0.904***	0.854***	0.869***	0.869***	-0.002	0.280***	0.044	0.022	0.474**	-0.025
	(9.38)	(9.73)	(3.89)	(3.89)	(-0.13)	(3.03)	(1.02)	(0.79)	(2.46)	(-1.12)
Retirement savings	-0.708***	-0.841***	-2.052***	-2.055***	-0.023	0.043	-0.146**	-0.113	-1.631***	0.138***
	(-5.77)	(-7.24)	(-5.21)	(-5.23)	(-0.20)	(0.27)	(-2.22)	(-0.92)	(-9.86)	(2.75)
Checking account	0.742*	0.418	-0.318	-0.317	0.024	0.325	0.197**	0.216***	-1.280	-0.124
	(1.65)	(0.95)	(-0.51)	(-0.51)	(0.43)	(0.97)	(2.29)	(2.83)	(-1.43)	(-1.60)
Mortgage	2.047***	2.075***	2.099***	2.098***	0.017**	0.069**	-0.022*	-0.038	2.369***	0.287***
	(13.33)	(14.02)	(17.33)	(17.33)	(2.25)	(2.00)	(-1.70)	(-1.62)	(24.63)	(4.05)
Loan	3.183***	3.054***	2.212***	2.212***	0.071*	-0.009	-0.108	-0.083	2.463***	0.024
	(6.76)	(8.30)	(2.66)	(2.67)	(1.66)	(-0.05)	(-1.14)	(-1.26)	(3.53)	(0.45)
# trades	58.200*	30.606**	25.194***	25.924***	0.914**	53.354***	5.930*	-0.309	2.610	51.261***
	(1.91)	(1.99)	(3.10)	(3.19)	(2.08)	(7.77)	(1.82)	(-0.09)	(1.58)	(60.38)
Trading volume	4.323***	3.749***	3.267***	3.272***	0.025	2.913***	0.052	-0.016	0.123*	0.076***
	(3.61)	(7.27)	(11.56)	(11.54)	(1.58)	(10.88)	(1.31)	(-0.12)	(1.72)	(3.36)

Client characteristics										
Client male	6.561	12.208								
	(0.82)	(1.64)								
45 $\leq$ client age $<$ 60	13.520	14.561								
	(1.39)	(1.61)								
60 $\leq$ client age $<$ 75	-7.846	-10.048								
	(-0.79)	(-1.02)								
Client age $\geq$ 75	-18.550	-24.092**								
	(-1.57)	(-2.16)								
Swiss	-51.849***	-66.329***								
	(-3.06)	(-4.14)								
Product information	-86.520***	-68.570***								
	(-7.81)	(-6.39)								
E-banking account	-23.319	-6.848								
	(-1.37)	(-0.53)								
Length of rel. (years)	6.854**	2.582								
	(2.39)	(1.19)								
Advisor characteristics										
Advisor male	-13.414**	2.525								
	(-2.19)	(0.48)								
30 $\leq$ advisor age $<$ 45	-4.001	3.215								
	(-0.39)	(0.44)								
Advisor age $\geq$ 45	-13.474	-14.979*								
	(-1.37)	(-1.80)								
# children	15.891***	15.910***								
	(3.85)	(4.22)								
Part of bank's mgmt.	50.579***	41.317***								
	(3.08)	(3.09)								
# clients	-0.069***	-0.074***								
	(-4.37)	(-5.02)								
Constant	69.511***	84.794***	41.439	42.766	35.745***	39.087**	-25.853	-6.090	65.688***	78.788***
	(2.61)	(2.82)	(1.51)	(1.55)	(7.06)	(2.14)	(-1.40)	(-0.67)	(4.47)	(23.32)
Client fixed effects	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time fixed effects	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.714	0.564	0.281	0.280	0.124	0.405	0.081	0.071	0.209	0.238
N	32,415	479,791	541,451	541,451	541,451	541,451	541,451	541,451	541,451	541,451

Table 4: Determinants of transaction-related profits

This table presents panel regressions with client and time fixed effects. Only quarters with one trade are considered. The dependent variable is either the quarterly profit (Columns 1 and 4), the quarterly securities transaction income (Columns 2 and 5), or the quarterly expenses (Columns 3 and 6). Appendix A provides detailed descriptions of all variables used throughout the study. In Columns 5 to 8, all trade characteristics are denoted in Swiss Francs and scaled by 1,000. All regressions include the full set of portfolio characteristics as summarized in Appendix A as controls except for the variables *bank wealth* and *# trades*. In addition, we include the variables *managed account* and *% advised trades* as controls. Control variables are not reported for space reasons. The t-values (in parentheses) are based on the cluster-robust variant of the Huber-White (Huber, 1967; White, 1982) sandwich estimator which accounts for the dependence of observations within clusters (different quarterly observations for one client). ***, **, * denote statistical significance at the 1%, 5%, 10% level.

	Profit (CHF)	Sec. trans. income (CHF)	Expenses (CHF)	Profit (CHF)	Sec. trans. income (CHF)	Expenses (CHF)
	(1)	(2)	(3)	(4)	(5)	(6)
Foreign bond (d)	126.228***	103.304***	20.987**			
	(4.43)	(7.11)	(2.40)			
Swiss stock (d)	30.668	57.861***	-3.328			
	(1.02)	(3.51)	(-0.38)			
Foreign stock (d)	54.143	88.488***	-3.692			
	(1.13)	(3.19)	(-0.29)			
Bank-own mutual fund (d)	271.348***	246.020***	-7.594			
	(2.86)	(5.18)	(-0.46)			
Partner mutual fund (d)	-11.392	-5.322	-9.615			
	(-0.26)	(-0.35)	(-1.12)			
Other mutual fund (d)	58.281	24.814	-21.157**			
	(1.48)	(1.33)	(-1.99)			
Derivative (d)	-18.724	-58.389**	15.064			
	(-0.34)	(-2.43)	(1.50)			
Structured product (d)	181.349***	164.028***	-2.840			
	(4.03)	(8.07)	(-0.23)			
Swiss bonds				2.585**	1.691***	0.111
				(2.25)	(3.52)	(0.79)
Foreign bonds				4.520***	3.657***	0.173***
				(7.11)	(8.60)	(2.85)
Swiss stocks				2.480*	4.525***	0.121
				(1.88)	(6.29)	(0.67)
Foreign stocks				5.932*	6.834***	0.124
				(1.77)	(8.10)	(0.28)
Bank-own mutual funds				15.223***	9.804***	-0.006
				(8.00)	(6.62)	(-0.03)
Partner mutual funds				1.676*	1.581***	-0.001
				(1.72)	(3.04)	(-0.02)
Other mutual funds				4.585***	4.188***	-0.439**
				(4.30)	(7.30)	(-2.34)
Derivatives				4.448*	4.583***	0.812
				(1.73)	(4.78)	(1.04)
Structured products				5.458***	6.233***	-0.104
				(3.26)	(10.88)	(-0.44)
Constant	74.648	162.664***	197.222***	87.343	167.450***	195.028***
	(0.76)	(4.11)	(10.92)	(0.87)	(7.57)	(12.37)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Client fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.075	0.197	0.055	0.079	0.230	0.053
N	34,399	34,399	34,399	34,399	34,399	34,399

Table 5: Determinants of holding-related profits

This table presents panel regressions with client and time fixed effects. Only quarters without any transactions are considered. The dependent variable is either the quarterly profit (Column 1), the quarterly deposit fee (Column 2), the quarterly management fee (Column 3), the quarterly other fee and commission income (Column 4), or the quarterly expenses (Column 5). Appendix A provides detailed descriptions of all variables used throughout the study. All portfolio characteristics are denoted in Swiss Francs and scaled by 1,000. All regressions include the full set of portfolio characteristics as summarized in Appendix A as controls except for the variables *bank wealth*, *# trades*, and *trading volume*. In addition, we include the variable *managed account* as control. Control variables are not reported for space reasons. The t-values (in parentheses) are based on the cluster-robust variant of the Huber-White (Huber, 1967; White, 1982) sandwich estimator which accounts for the dependence of observations within clusters (different quarterly observations for one client). ***, **, * denote statistical significance at the 1%, 5%, 10% level.

	Profit (CHF)	Deposit fee (CHF)	Mgmt. fee (CHF)	Other fee/com. income (CHF)	Expenses (CHF)
	(1)	(2)	(3)	(4)	(5)
Swiss bonds	-0.261**	0.139***	0.009	0.110	0.316***
	(-2.13)	(11.44)	(1.47)	(1.58)	(12.16)
Foreign bonds	0.334***	0.271***	-0.024	-0.070*	0.098*
	(2.66)	(4.96)	(-1.14)	(-1.78)	(1.87)
Swiss stocks	0.303*	0.032*	-0.001	0.024***	0.074***
	(1.65)	(1.86)	(-1.24)	(5.36)	(3.43)
Foreign stocks	0.066	0.029	0.001	0.027	0.025***
	(0.73)	(0.98)	(0.92)	(0.64)	(2.82)
Bank-own mutual funds	8.141***	-0.713	6.588***	2.527***	-0.165
	(5.66)	(-1.62)	(3.22)	(8.39)	(-0.48)
Partner mutual funds	1.474***	0.190***	-0.010	1.383***	0.245***
	(10.88)	(12.55)	(-0.35)	(14.52)	(13.22)
Other mutual funds	0.571	0.060	0.165*	0.424***	0.184***
	(1.47)	(0.68)	(1.74)	(2.80)	(3.39)
Derivatives	0.419	0.264***	0.147**	0.193	0.501***
	(1.02)	(3.97)	(2.28)	(0.72)	(5.05)
Structured products	0.320	0.451***	0.197	-0.402**	0.144
	(0.51)	(8.24)	(1.49)	(-2.50)	(1.64)
Constant	17.346	19.504***	-1.966	-30.486***	58.997***
	(0.98)	(11.90)	(-1.56)	(-5.91)	(16.92)
Controls	Yes	Yes	Yes	Yes	Yes
Client fixed effects	Yes	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.119	0.189	0.234	0.084	0.040
N	470,966	470,966	470,966	470,966	470,966

Table 6: Univariate comparisons of advised and independent trades

This table presents mean values of trade characteristics and security characteristics for subsamples of advised trades and independent trades. Results for buys (Panel A) and sells (Panel B) are reported separately. Appendix A provides detailed descriptions of all variables used throughout the study. Means of the subgroups are tested for equality using a standard t-test (*t-value*). ***, **, * denote statistical significance at the 1%, 5%, 10% level.

	Mean	Advised trades	Independent trades	Difference	t-value	N
Panel A: Buys						
Trade value (,000; CHF)	31.634	45.249	30.652	14.597	16.956***	82,767
Trade value (%)	9.642	9.893	9.624	0.269	1.317	82,320
Swiss bond (d)	0.016	0.016	0.016	0.000	0.124	82,767
Foreign bond (d)	0.168	0.248	0.162	0.087	16.753***	82,767
Swiss stock (d)	0.243	0.147	0.250	-0.103	-17.319***	82,767
Foreign stock (d)	0.148	0.158	0.148	0.011	2.139**	82,767
Bank-own mutual fund (d)	0.009	0.025	0.008	0.017	12.743***	82,767
Partner mutual fund (d)	0.147	0.141	0.147	-0.006	-1.318	82,767
Other mutual fund (d)	0.040	0.026	0.041	-0.015	-5.376***	82,767
Derivative (d)	0.067	0.015	0.071	-0.056	-16.243***	82,767
Structured product (d)	0.085	0.185	0.078	0.107	27.702***	82,767
Panel B: Sells						
Trade value (,000; CHF)	28.106	39.696	27.310	12.386	10.741***	68,736
Trade value (%)	9.161	8.341	9.218	-0.877	-4.060***	68,712
Swiss bond (d)	0.022	0.034	0.021	0.013	5.476***	68,736
Foreign bond (d)	0.059	0.091	0.056	0.035	9.451***	68,736
Swiss stock (d)	0.309	0.304	0.309	-0.005	-0.705	68,736
Foreign stock (d)	0.177	0.212	0.175	0.037	6.304***	68,736
Bank-own mutual fund (d)	0.001	0.002	0.001	0.002	3.571***	68,736
Partner mutual fund (d)	0.177	0.189	0.176	0.013	2.198**	68,736
Other mutual fund (d)	0.042	0.065	0.041	0.025	7.827***	68,736
Derivative (d)	0.128	0.020	0.136	-0.116	-22.326***	68,736
Structured product (d)	0.032	0.057	0.030	0.027	9.976***	68,736

Table 7: Determinants of advised and independent trades

The table reports the results from logit regressions with and without client and time fixed effects. Only purchases are considered. The dependent variable is either a dummy variable which equals one for advised trades (Columns 1 and 3) or a dummy variable which equals one for trades that follow an advisor-initiated contact (Columns 2 and 4). Appendix A provides detailed descriptions of all variables used throughout the study. In Columns 1 and 2, marginal effects are reported. All regressions include the full set of portfolio characteristics as summarized in Appendix A as controls except for the variables *bank wealth*, *# trades*, and *trading volume*. The specifications in Columns 1 and 2 additionally contain all client and advisor characteristics as shown in Appendix A except for *education* and *employment*. In Columns 3 and 4, client characteristics are captured by client fixed effects. Control variables are not reported for space reasons. ***, **, * denote statistical significance at the 1%, 5%, 10% level.

	Buys					
	Advised trade (d)	Advisor-initiated (d)	Advised trade (d)	Advisor-initiated (d)	Advised trade (d)	Advisor-initiated (d)
	(1)	(2)	(3)	(4)	(5)	(6)
Log(trade value)	0.009***	0.002***	0.237***	0.189***	0.235***	0.187***
	(15.90)	(8.26)	(9.23)	(4.86)	(9.16)	(4.78)
Foreign bond (d)	0.008**	0.003	-0.014	0.102	-0.017	0.086
	(2.26)	(1.47)	(-0.11)	(0.56)	(-0.14)	(0.47)
Swiss stock (d)	-0.004	-0.002	0.200	-0.086	0.192	-0.126
	(-1.40)	(-1.45)	(1.57)	(-0.46)	(1.52)	(-0.68)
Foreign stock (d)	0.011***	0.006**	0.278**	0.229	0.265**	0.180
	(2.69)	(2.56)	(2.13)	(1.20)	(2.03)	(0.94)
Bank-own mutual fund (d)	0.045***	0.014***	0.624***	0.391	0.613***	0.348
	(4.67)	(2.79)	(3.24)	(1.46)	(3.19)	(1.30)
Partner mutual fund (d)	0.002	-0.000	-0.168	-0.016	-0.174	-0.042
	(0.68)	(-0.21)	(-1.25)	(-0.08)	(-1.29)	(-0.21)
Other mutual fund (d)	-0.008**	-0.002	-0.526***	-0.346	-0.536***	-0.387
	(-2.40)	(-1.25)	(-3.08)	(-1.29)	(-3.13)	(-1.45)
Derivative (d)	-0.019***	-0.005***	-0.785***	-0.810***	-0.791***	-0.838***
	(-6.46)	(-2.95)	(-3.94)	(-2.79)	(-3.97)	(-2.87)
Structured product (d)	0.031***	0.025***	0.463***	0.999***	0.392***	0.809***
	(5.86)	(5.48)	(3.55)	(5.40)	(2.95)	(4.30)
St. product, pre-listing (d)					0.479***	1.170***
					(3.08)	(6.11)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Client fixed effects	No	No	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo R^2	0.131	0.133	0.045	0.077	0.046	0.083
N	77,849	77,849	19,385	11,004	19,385	11,004

Figures

Figure 1: Number of advisory contacts

This figure shows the monthly number of contacts explicitly marked as advisory contacts between January 2002 and June 2005. There are 74,001 contacts in total, of which 11,673 are explicitly classified as advisory contacts.

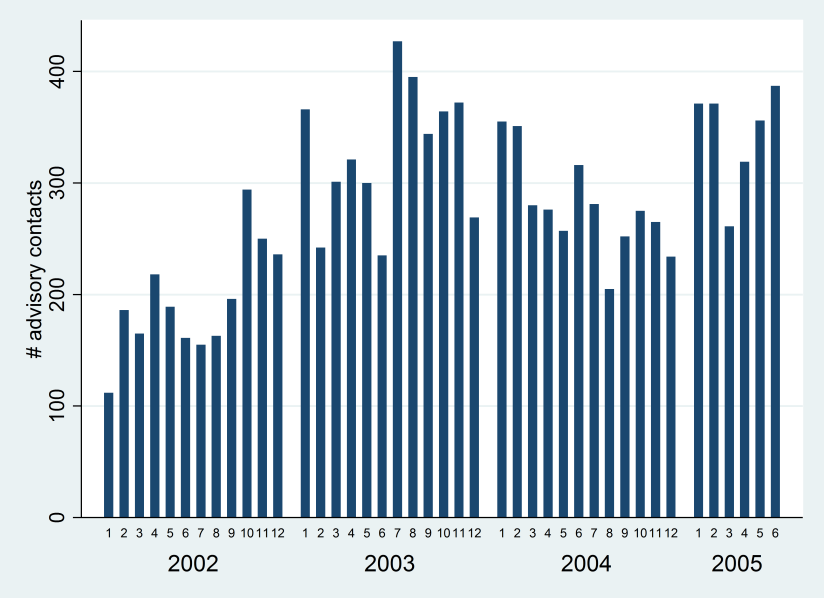


Figure 2: Number of trades around advisory contacts

This figure shows the number of trades around advisory contacts. There are 151,503 trades in non-managed accounts in total between January 2002 and June 2005, of which 9,988 transactions take place within the time period from t = 0 to t = 4 after an advisory contact.

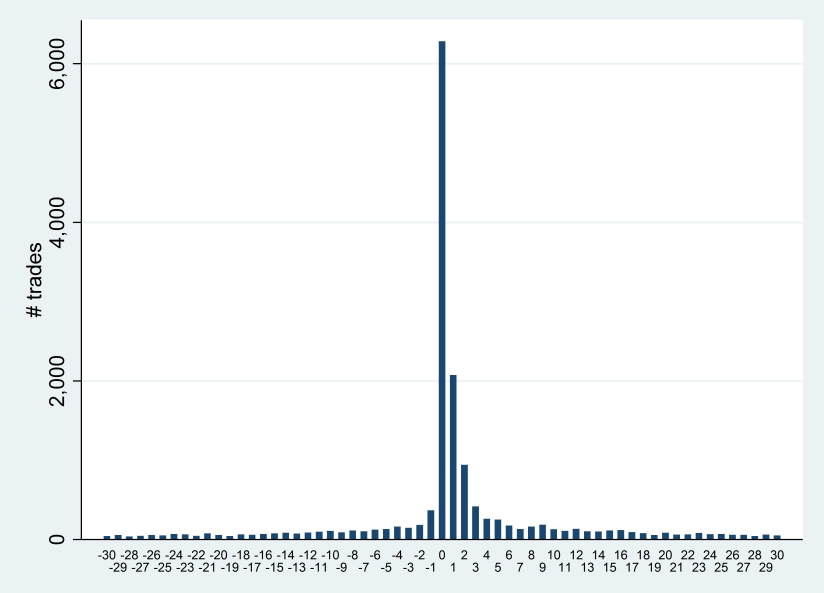
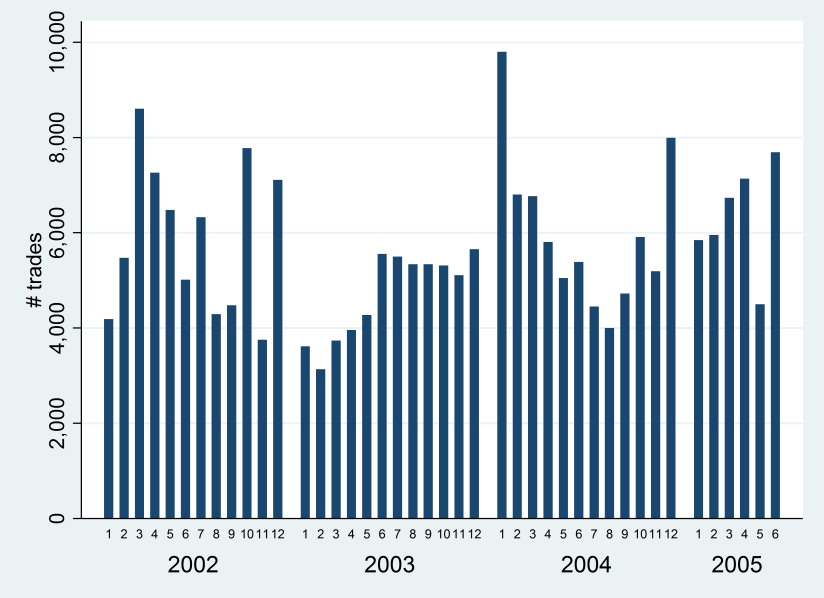


Figure 3: Number of trades

This figure show the monthly number of trades (Panel A) and the monthly number of advised trades (Panel B) between January 2002 and June 2005. There are 237,051 trades in total (in managed and non-managed accounts), of which 9,988 take place within the time period from t = 0 to t = 4 after an advisory contact.

Panel A: Number of trades



Panel B: Number of advised trades

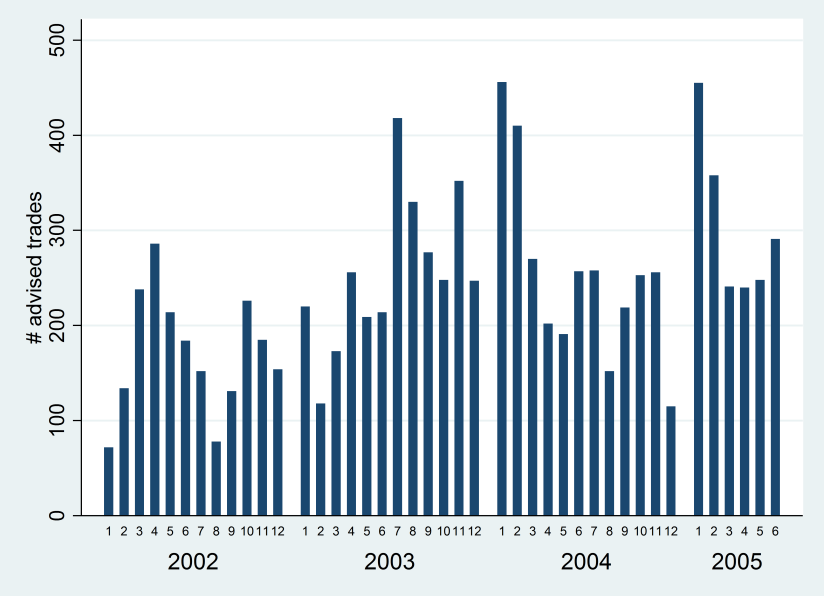
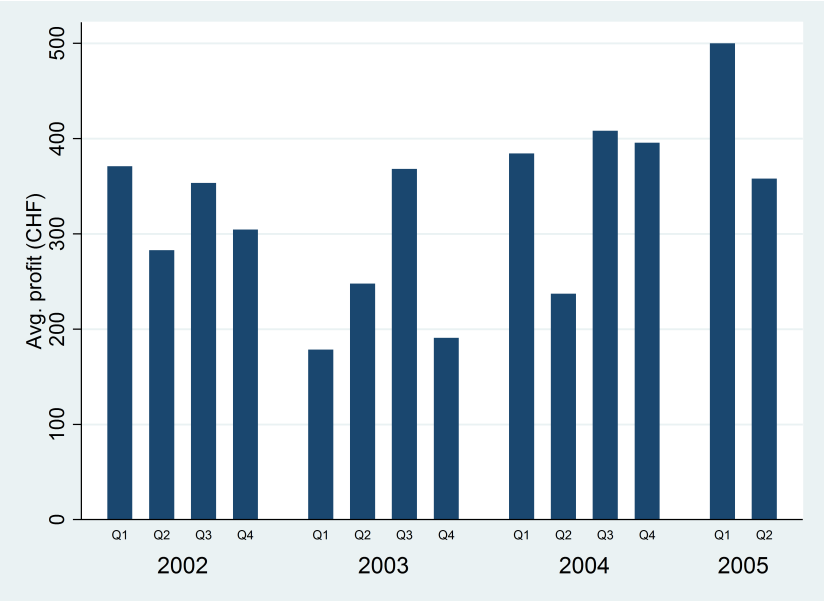


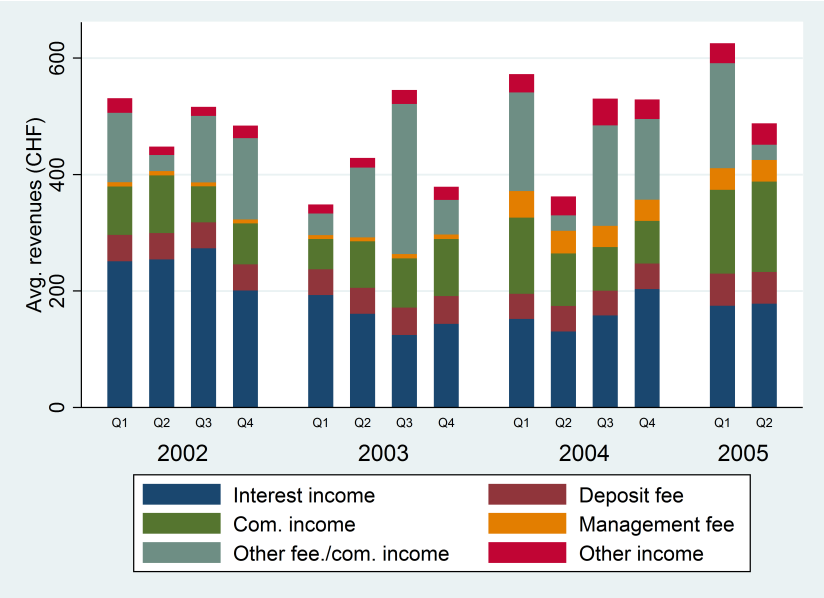
Figure 4: Average profit and revenues per client over time

This figure shows the average quarterly profit per client (Panel A) and the average quarterly revenues by profit center and client (Panel B) between January 2002 and June 2005.

Panel A: Average profit per client over time



Panel B: Average revenues by profit center and client over time



Appendix

Appendix A: Variable descriptions

This table defines the variables used throughout the study. The source of the data and whether the variable had to be computed from the original data is reported. Moreover, the frequency of occurrence of the variable is provided (in parentheses). Client and advisor characteristics are time-invariant as they are collected by the bank on the date of the account opening and overwritten in case of new information provided by clients and advisors.

Variable	Description	Source (frequency)
Profit characteristics		
Profit (CHF)	Profit the bank generates with each individual client, defined as revenues minus expenses (in Swiss Francs)	Bank (quarterly)
Revenues (CHF)	Contains all revenues that can be assigned to a client. This includes the deposit fee, the securities transaction income, the management fee, other fee and commission income, interest income, and other income (in Swiss Francs)	Bank (quarterly)
Expenses (CHF)	Contains all costs that can be assigned to a client. This includes among other things labor costs of financial advisors as well as third-party charges (in Swiss Francs)	Bank (quarterly)
Deposit fee (CHF)	Contains the fees the client pays for the securities account. The client either pays a minimum fee or a percentage of the securities portfolio. The deposit fee is paid semi-annually. In order to smooth its distribution, we spread it evenly over the quarter preceding the payment and the quarter of the actual payment (in Swiss Francs)	Bank (quarterly)
Securities transaction income (CHF)	Contains all fees and commissions from securities transactions. This includes among other things the fees and commissions directly charged by the bank, initial kickbacks the bank receives from mutual fund providers and structured product issuers, etc. (in Swiss Francs)	Bank (quarterly)
Management fee (CHF)	Contains the fees the client pays for portfolio management. The management fee is paid semi-annually. In order to smooth its distribution, we spread it evenly over the quarter preceding the payment and the quarter of the actual payment (in Swiss Francs)	Bank (quarterly)
Other fee and commission income (CHF)	Contains all fees and commissions other than the deposit fee, the securities transaction income, and the management fee. This includes among other things regular kickbacks from mutual fund providers, fees for account keeping, fees for payment transactions, fees for credit cards, etc. (in Swiss Francs)	Bank (quarterly)
Interest income (CHF)	Contains the net interest income from savings, mortgages, and loans calculated according to the market interest rate method. The market interest rate method assumes that assets and liabilities are refinanced at current market conditions (in Swiss Francs)	Bank (quarterly)

Advice characteristics		
Managed account	Dummy variable that equals one for clients that delegate account management to the bank at least once during our investigation period, and zero otherwise (Tables 1 and 2, Column 1 in Table 3) or dummy variable that equals one for clients that pay the management fee semi-annually, and zero otherwise (all other tables)	Bank, computed (time-invariant/ quarterly)
Advised	Dummy variable that equals one for trades executed within five days of an advisory contact, that is, between t = 0 and t = 4, and zero otherwise	Bank, computed (daily)
Advisor-initiated	Dummy variable that equals one for advised trades that follow a contact that was initiated by the advisor, and zero otherwise	Bank, computed (daily)
Trades on advice	Dummy variable that equals one for clients that trade on advice at least once during our investigation period, and zero otherwise	Bank, computed (time-invariant)
% advised trades	Number of advised trades over the entire investigation period / Total number of trades over the entire investigation period (Column 1 in Table 3) or Number of advised trades per quarter / Total number of trades per quarter (all other tables)	Bank, computed (time-invariant/ quarterly)
% advisor-initiated	Number of trades that follow advisor-initiated contacts per quarter / Total number of trades per quarter	Bank, computed (quarterly)
Portfolio characteristics		
Bank wealth (,000; CHF)	Total wealth a client holds at our bank. This position is not netted against mortgages and loans (in thousands of Swiss Francs)	Bank (quarterly)
Securities account (,000; CHF)	Value of securities portfolio of a client (in thousands of Swiss Francs)	Bank (quarterly)
Savings account (,000; CHF)	Amount of money a client holds on the savings account. This does not include retirement savings (in thousands of Swiss Francs)	Bank (quarterly)
Retirement savings (,000; CHF)	Amount of money a client holds on the retirement savings account (in thousands of Swiss Francs)	Bank (quarterly)
Checking account (,000; CHF)	Amount of money a client holds on the checking account (in thousands of Swiss Francs)	Bank (quarterly)
Mortgage (,000; CHF)	Value of a client's mortgage (in thousands of Swiss Francs)	Bank (quarterly)
Loan (,000; CHF)	Value of a client's loan (in thousands of Swiss Francs)	Bank (quarterly)
# trades	Number of trades by a client per quarter	Bank (quarterly)
Trading volume (,000; CHF)	Value of all transactions executed by a client per quarter (in thousands of Swiss Francs)	Bank (quarterly)
Client characteristics		
Client male	Dummy variable that equals one for male clients and zero for female clients	Bank (time-invariant)
Client age	Client's age (in years)	Bank (yearly)

Education	Client's education (1: unskilled; 2: semiskilled; 3: apprenticeship/ vocational education; 4: high school; 5: high vocational education; 6: technical college; 7: university)	Bank (time-invariant)
Employment, employed	Dummy variable that equals one for employed clients, and zero otherwise	Bank (time-invariant)
Employment, retired	Dummy variable that equals one for retired clients, and zero otherwise	Bank (time-invariant)
Swiss	Dummy variable that equals one for clients living in Switzerland and zero for foreign clients	Bank (time-invariant)
Product information	Dummy variable that equals one for clients receiving product information, and zero otherwise. Product information is distributed via mass mailings. It provides information about new and existing bank products and is only partially personalized to clients' characteristics	Bank (time-invariant)
E-banking account	Dummy variable that equals one for clients with e-banking access, and zero otherwise	Bank (time-invariant)
Length of relationship	Number of years since account was opened (in years). This variable is missing for the 81.1% of clients in our sample that opened their account before December 1995. We assume that all these customers created their account in December 1995	Bank (yearly)
Advisor characteristics		
Advisor male	Dummy variable that equals one for male advisors and zero for female advisors	Bank (time-invariant)
Advisor age	Advisor's age (in years)	Bank (time-invariant)
# children	Number of children of an advisor	Bank (time-invariant)
Part of bank's management	Dummy variable that equals one for advisor that are part of the bank's management, and zero otherwise	Bank (time-invariant)
# clients	Number of clients managed by an advisor	Bank (time-invariant)
Trade and security characteristics		
Trade value (,000; CHF)	Trade value (in thousands of Swiss Francs)	Bank (daily)
Trade value (%)	Trade value / Bank wealth	Bank, computed (daily)
Log(trade value)	Natural logarithm of the trade value	Bank, computed (monthly)
Swiss bond	Dummy variable that equals one for transactions in Swiss bonds, and zero otherwise (Columns 1 to 3 in Table 4, and Tables 6 and 7), trade value in Swiss bonds (in thousands of Swiss Francs; Columns 4 to 6 in Table 4), or portfolio holdings in Swiss bonds (in thousands of Swiss Francs; Table 5)	Bank, computed (daily)
Foreign bond	Dummy variable that equals one for transactions in foreign bonds, and zero otherwise (Columns 1 to 3 in Table 4, and Tables 6 and 7), trade value in foreign bonds (in thousands of Swiss Francs; Columns 4 to 6 in Table 4), or portfolio holdings in foreign bonds (in thousands of Swiss Francs; Table 5)	Bank, computed (daily)

Swiss stock	Dummy variable that equals one for transactions in Swiss stocks, and zero otherwise (Columns 1 to 3 in Table 4, and Tables 6 and 7), trade value in Swiss stocks (in thousands of Swiss Francs; Columns 4 to 6 in Table 4), or portfolio holdings in Swiss stocks (in thousands of Swiss Francs; Table 5)	Bank, computed (daily)
Foreign stock	Dummy variable that equals one for transactions in foreign stocks, and zero otherwise (Columns 1 to 3 in Table 4, and Tables 6 and 7), trade value in foreign stocks (in thousands of Swiss Francs; Columns 4 to 6 in Table 4), or portfolio holdings in foreign stocks (in thousands of Swiss Francs; Table 5)	Bank, computed (daily)
Bank-own mutual fund	Dummy variable that equals one for transactions in bank-own mutual funds, and zero otherwise (Columns 1 to 3 in Table 4, and Tables 6 and 7), trade value in bank-own mutual funds (in thousands of Swiss Francs; Columns 4 to 6 in Table 4), or portfolio holdings in bank-own mutual funds (in thousands of Swiss Francs; Table 5)	Bank, computed (daily)
Partner mutual fund	Dummy variable that equals one for transactions in mutual funds of partner firms, and zero otherwise (Columns 1 to 3 in Table 4, and Tables 6 and 7), trade value in mutual funds of partner firms (in thousands of Swiss Francs; Columns 4 to 6 in Table 4), or portfolio holdings in mutual funds of partner firms (in thousands of Swiss Francs; Table 5). If there is an explicit distribution partnership between our bank and the mutual fund provider, we classify funds of this firm as partner mutual funds	Bank, computed (daily)
Other mutual fund	Dummy variable that equals one for transactions in other mutual funds, and zero otherwise (Columns 1 to 3 in Table 4, and Tables 6 and 7), trade value in other mutual funds (in thousands of Swiss Francs; Columns 4 to 6 in Table 4), or portfolio holdings in other mutual funds (in thousands of Swiss Francs; Table 5). This includes all mutual funds that are neither bank-own funds nor funds of a partner firm	Bank, computed (daily)
Derivative	Dummy variable that equals one for transactions in derivatives, and zero otherwise (Columns 1 to 3 in Table 4, and Tables 6 and 7), trade value in derivatives (in thousands of Swiss Francs; Columns 4 to 6 in Table 4), or portfolio holdings in derivatives (in thousands of Swiss Francs; Table 5). The majority of derivatives are options and warrants	Bank, computed (daily)
Structured product	Dummy variable that equals one for transactions in structured products, and zero otherwise (Columns 1 to 3 in Table 4, and Tables 6 and 7), trade value in structured products (in thousands of Swiss Francs; Columns 4 to 6 in Table 4), or portfolio holdings in structured products (in thousands of Swiss Francs; Table 5)	Bank, computed (daily)

Appendix B: Results from robustness tests

Table A1: Determinants of profits - robustness tests

This table presents panel regressions with time and client fixed effects. The dependent variable is the quarterly profit per client. In Column 1, the quarterly profit and portfolio characteristics are winsorized at the 1% level and the 99% level except for *loan*. In Column 2, only those managed accounts of clients that delegate portfolio management to the bank are considered. In Column 3, only those managed accounts of clients that switch away from delegated portfolio management are considered. In Column 4, only Swiss clients are considered. In Column 5, only foreign clients are considered. Appendix A provides detailed descriptions of all variables used throughout the study. All portfolio characteristics are denoted in Swiss Francs and scaled by 1,000 except for *# trades*. The t-values (in parentheses) are based on the cluster-robust variant of the Huber–White (Huber, 1967; White, 1982) sandwich estimator which accounts for the dependence of observations within clusters (different quarterly observations for one client). ***, **, * denote statistical significance at the 1%, 5%, 10% level.

	Profit (CHF)				
	Winsorized	Switch to managed account	Switch to self-managed account	Only Swiss clients	Only foreign clients
	(1)	(2)	(3)	(4)	(5)
Advice characteristics					
Managed account (d)	367.316***	920.991***	-636.355***	1022.809***	509.830***
	(8.96)	(6.82)	(-2.96)	(4.36)	(4.28)
% advised trades	175.979***	324.849***	238.041***	384.315***	301.932***
	(14.34)	(11.44)	(7.06)	(11.35)	(7.79)
Portfolio characteristics					
Securities account	0.751***	0.809***	0.667***	0.977***	0.387
	(23.29)	(4.35)	(3.39)	(5.41)	(1.59)
Savings account	0.841***	0.868***	0.597***	0.996***	0.280
	(22.56)	(3.84)	(4.66)	(3.85)	(1.46)
Retirement savings	-1.561***	-1.649***	-1.745***	-1.812***	0.946
	(-11.40)	(-4.90)	(-5.23)	(-4.60)	(0.80)
Checking account	1.685***	-0.558	-0.555	-0.515	1.214***
	(28.35)	(-0.91)	(-0.82)	(-0.83)	(3.74)
Mortgage	2.478***	2.063***	2.071***	2.084***	3.133**
	(31.97)	(17.54)	(17.84)	(16.81)	(2.16)
Loan	0.938***	1.596**	1.510**	1.902**	4.228***
	(3.95)	(2.47)	(2.35)	(2.02)	(4.00)
# trades	-10.080***	43.024***	76.640***	33.421***	-0.783
	(-5.16)	(4.16)	(5.40)	(3.20)	(-0.07)
Trading volume	6.604***	3.440***	3.725***	3.008***	4.150***
	(79.10)	(10.06)	(8.84)	(9.74)	(9.73)
Constant	-12.844**	21.958	37.972	-3.643	267.076***
	(-2.16)	(0.83)	(1.47)	(-0.13)	(4.35)
Client fixed effects	Yes	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.317	0.305	0.349	0.287	0.312
N	541,451	528,350	525,877	443,550	97,901

Table A2: Determinants of transaction-related profits of structured products

This table presents panel regressions with client and time fixed effects. Only quarters with one trade are considered. The dependent variable is the quarterly profit per client. Appendix A provides detailed descriptions of all variables used throughout the study. In Columns 2 and 4, all trade characteristics are denoted in Swiss Francs and scaled by 1,000. In Columns 3 and 4, we exclude clients that delegate account management to the bank at least once during our investigation period. All regressions include the full set of portfolio characteristics as summarized in Appendix A as controls except for the variables *bank wealth* and *# trades*. In addition, we include the variables *managed account* and *% advised trades* as controls. Control variables are not reported for space reasons. The t-values (in parentheses) are based on the cluster-robust variant of the Huber–White (Huber, 1967; White, 1982) sandwich estimator which accounts for the dependence of observations within clusters (different quarterly observations for one client). ***, **, * denote statistical significance at the 1%, 5%, 10% level.

	Profit (CHF)			
			Without managed accounts	
	(1)	(2)	(3)	(4)
Tracker certificate (d)	332.522***		173.625***	
	(6.34)		(3.43)	
Other structured product (d)	146.280***		170.903***	
	(2.87)		(3.74)	
Tracker certificates		13.240***		9.866***
		(5.48)		(4.78)
Other structured products		5.186***		6.067***
		(3.03)		(2.79)
Constant	60.467	87.495	113.155	175.747*
	(0.67)	(0.88)	(1.14)	(1.73)
Controls	Yes	Yes	Yes	Yes
Client fixed effects	Yes	Yes	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes
Adj. R^2	0.075	0.079	0.158	0.161
N	34,399	34,399	32,449	32,449

Table A3: Determinants of advised and independent trades

The table reports the results from logit regressions with and without client and time fixed effects. Only purchases are considered. The dependent variable is either a dummy variable which equals one for *advised trades* (Columns 1 and 3) or a dummy variable which equals one for trades that follow an advisor-initiated contact (Columns 2 and 4). In Columns 1 and 2, marginal effects are reported. Appendix A provides detailed descriptions of all variables used throughout the study. All regressions include the full set of portfolio characteristics as summarized in Appendix A as controls except for the variables *bank wealth*, *# trades*, and *trading volume*. The specifications in Columns 1 and 2 additionally contain all client, account, and advisor characteristics as shown in Appendix A except for *marital status*, *education*, and *employment*. Control variables are not reported for space reasons. ***, **, * denote statistical significance at the 1%, 5%, 10% level.

	Buys			
	Advised trade (d)	Advisor-initiated (d)	Advised trade (d)	Advisor-initiated (d)
	(1)	(2)	(3)	(4)
Log(trade value)	0.009***	0.002***	0.236***	0.187***
	(15.80)	(8.14)	(9.20)	(4.79)
Foreign bond (d)	0.008**	0.003	-0.014	0.102
	(2.27)	(1.49)	(-0.11)	(0.56)
Swiss stock (d)	-0.004	-0.002	0.198	-0.093
	(-1.42)	(-1.48)	(1.56)	(-0.50)
Foreign stock (d)	0.010***	0.006**	0.276**	0.220
	(2.67)	(2.54)	(2.11)	(1.15)
Bank-own mutual fund (d)	0.045***	0.014***	0.622***	0.383
	(4.66)	(2.78)	(3.23)	(1.43)
Partner mutual fund (d)	0.002	-0.000	-0.169	-0.019
	(0.69)	(-0.21)	(-1.26)	(-0.09)
Other mutual fund (d)	-0.008**	-0.002	-0.528***	-0.350
	(-2.40)	(-1.25)	(-3.08)	(-1.31)
Derivative (d)	-0.019***	-0.005***	-0.787***	-0.820***
	(-6.51)	(-3.00)	(-3.95)	(-2.82)
Tracker certificate (d)	-0.006	0.005	0.115	0.259
	(-0.91)	(1.09)	(0.35)	(0.64)
Other structured product (d)	0.034***	0.027***	0.475***	1.029***
	(6.09)	(5.55)	(3.63)	(5.55)
Controls	Yes	Yes	Yes	Yes
Client fixed effects	No	No	Yes	Yes
Time fixed effects	Yes	Yes	Yes	Yes
Pseudo R^2	0.132	0.134	0.046	0.077
N	77,849	77,849	19,385	11,004