Which Swiss Gnomes Attract Money? Efficiency and Reputation as Performance Drivers of Wealth Management Banks

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Abstract

Wealth management constitutes an important aspect of today's banking world, but very little is known about what explains the differences among banks in their ability to attract new assets under management. Using a unique panel database of Swiss private banks, we test the hypothesis that the performance of a bank in attracting new money depends on two input factors: skill and reputation. Relatively skilled banks – that is, banks that are more cost-efficient than predicted by their input factors – also perform better in attracting net new money. We also find that negative media coverage (such as in the context of fraudulent business practices related to tax evasion) strongly diminishes the future ability to attract assets under management, especially at small banks. The present value of lost profits is 3.35 (0.73) times the median annual net profit of a small (large) bank. Thus, adding to the explicit fines that many Swiss banks had to pay in the course of the U.S. Department of Justice's investigations, there are substantial implicit and reputational costs to banks of having negative media coverage. Investment performance for clients seems not to explain future net new money growth. In sum, these results underscore the importance of trust in money management.

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Of store of metals, which we pile,
And merrily greet: "Good cheer!" the while.
Well-meant the words, believe us, then!
We are the friends of all good men.

The Gnomes
Johann Wolfgang von Goethe

1 Introduction

Swiss Banks have often been compared to Gnomes, ammassing and hoarding underground fortunes.[1]. In this paper we build on Goethe's description of the Gnomes as "always industrious everywhere", analyzing the link between Swiss wealth managers' industriousness and their performance. While Swiss wealth managers do work in relative secrecy like the Gnomes, they are required to disclose their "mining" performance, i.e., the yearly amount of net new money attracted from their customers. This makes Swiss private banking an ideal object of study.[2]

Private banks generate revenue by managing assets for wealthy private individuals. Two of the most important key figures in private banking are *assets under management* (AuM) and *net new money* (NNM). The more assets a private bank manages the larger is the basis on which the bank may generate fee and commission income. Assets under management may grow through two channels, either through capital gains or through acquisition of new funds, i.e., by attracting new customers or by extending the 'share of wallet' of existing clients. Understanding the determinants of net new money thus is key to growth and performance in wealth management. The financial sector as a whole is an important contributor to GDP in many countries (SIF, 2014), with percentage contributions to GDP ranging from 3.6% (Germany), 6.6% (US), 8.6% (UK), 10.5% (Switzerland) to 11,2% (Singapore). While much research has been devoted to commercial and investment banking, the world of private banks and wealth management remains somewhat neglected and thus provides opportunities for research.

In this paper we analyze the determinants of the creation of net new money for Swiss private banks. The Swiss private banking market provides an ideal setting for a study of this topic,

[1] In the 1960s the "Gnomes of Zurich" were suspected of speculating against the British Pound. In popular belief Gnomes are Goblin-like creatures mining and hoarding treasures under ground, symbolizing the unbounded greed of wealth. They were first mentioned by Paracelsus and immortalized by Goethe in the famous scene on paper money in *Faust*. The full quotation may be found in the Appendix.

[2] The term "private banking" is often used as synonymous to wealth management, since originally, most Swiss wealth managers were in the form of so-called (fully liable) private banks (not denoting the opposite of public banks).

even though (or precisely because) this market has been eyed critically for a long time. First, in international comparison Switzerland has a high density of private banks and is a large market for cross-border wealth management. As of the end of 2014 Swiss banks managed approximately CHF 6.7 trillion assets whereof 51.1 percent are assets from international customers (SBA, 2015). Swiss private banks have an approximate market share of 25.0 percent in worldwide offshore wealth management. Section 2 presents a brief history of Swiss banking. Second, while one of the reasons for the lack of evidence on private banks is the secretive nature of these banks and the lack of data, Swiss regulation requires its banks[3] to report AuM, the composition of AuM as well as NNM in a standardized form under some conditions. Third, Swiss banks experienced a prolonged period of international political pressure as well as extensive cross-sectional variation related to fraudulent business practices and tax evasion. By exploiting variation in negative media coverage, this affords an opportunity to investigate the role of reputational risks in wealth management.

For our empirical analysis we use a unique hand-collected data set of accounting reports for 87 private banks in Switzerland for the time period of 2002 to 2014. Furthermore, we enlarge our data set with the accounts of 11 banks in the Principality of Liechtenstein. Private banking in Liechtenstein is very comparable to Switzerland due to its geographical proximity, identical currency, and similar regulation and reporting standards. In total we study 98 private banks.

We begin by identifying banks that are comparatively more efficient in producing output, i.e. generation of income, given a vector of cost factors like wage costs, administrative costs, and depreciation while controlling for size. We measure *efficiency* through the standard figure cost-income ratio (CIR). Banks that achieve a lower (higher) CIR than implied by their input factors are more (less) skilled compared to other banks having similar input factors. We define the fixed effect component of abnormal CIR as *skill* of a bank. The time-varying component of abnormal CIR captures unusual costs occurring in a year, for example, due to unusual depreciations (that occur when a bank loses goodwill of customers).

In a second step, we then study the determinants of future net new money generation. We

[3]The Swiss Federal Banking Commission (SFBC) sets up the reporting standards for Swiss banks. Since the end of 2002 all banks in Switzerland that generate more than one third of their revenues through commission and fee income over a moving average of three years have to give a structured report of assets under management and publish their net money flows. In what follows we define banks that fulfill the SFBC AuM reporting criteria as *private banks*, thus denoting them with the common term for banks that generate a larger portion of their income by wealth management services such as financial investment advisory or managing assets of wealthy customers.

find that our *skill* factor has strong predictive power for future NNM attraction. Banks that have abnormally low CIR given their input factors are more successful in generating net money flows in the future. We furthermore find that banks with negative media coverage experience large money outflows in the subsequent year. It is in particular relatively small banks that suffer most from negative media coverage. In our main specification, a bank below median size in terms of asset under management that experiences negative media coverage in one year has a 9.5 percentage point lower net new money growth (and, thus, often experiences net outflows) in the following year. Using estimates for the profits that banks make on assets under management, we calculate that this is roughly equivalent to a present value loss of 3.35 times the median annual net profit of a small bank. For a large bank, the present value of the damage of negative media coverage is 0.73 times the median annual net profit. Thus, reputational costs can be substantial.

We identify several other determinants of net new money growth. More employees (adjusted for the size of AuM) are associated with higher NNM growth, as are higher wages and bonuses for bank employees. Strikingly, returns on investment on funds managed for clients does not explain the variation in net new money growth of Swiss private banks.

Our paper is related to (1) the literature on reputational risk and trust in financial markets, (2) the literature on the role of relationships in banking, (3) the literature on private banking specifically, and (4) the literature on fund flows in the mutual funds industry.

First, the basis of wealth management is the clients trust in the bank or, from the bank's perspective, reputation. Gennaioli et al. (2015) compare investors seeking professional investment advice to individuals seeing a doctor to get medical advice; investors may be anxious about investing because they have little knowledge of financial markets similar to a patient who does not know how to be cured. Investors in their model do not choose a portfolio manager because of past performance but rather because of trust and confidence. Our paper allows an empirical investigation of both aspects: the ability of a bank to attract new funds and customers as a function of trust and past investment performance.

The importance of generalized trust for stock market participation has been demonstrated by Guiso et al. (2008), and Giannetti and Wang (2016) document how household stock market participation decreases after the revelation of corporate fraud. There is a more limited empirical literature related to reputational risks in the financial industry. Most studies focus on stock

market reactions of commercial banks after operational losses using event studies. Gillet et al. (2010) conduct an event study and compare stock price losses with the announcement of an operational loss. They find that operational losses resulting from internal fraud result in a greater loss of the stock price. They interpret the difference between the operational loss and the stock price loss as reputational damage. Fiordelisi et al. (2013) try to elaborate on the determinants of reputational damage after operational losses in a similar setting. They find that the probability of a reputational damage is increasing in firm size and profits and reduced by higher level of capital and intangible assets. Sturm (2013) also investigates operational losses and their impact on reputational damage. He finds that stock prices react negatively both to press as well as settlement announcements of operational losses. Armour et al. (2016) document that a firm's "naming" as a wrongdoer by a UK regulator leads to negative stock price reactions that are substantially larger than the direct penalties imposed.

These studies consider study the reactions of stock prices of publicly listed companies, and many focus on the announcement of an operational damage. We focus on private banks that almost without exception are not listed on a stock exchange, and our interest lies in reputational damage occurring neither not operational losses, but through fraudulent practices associated with tax evasion.

Second, the term relationship banking often refers to a bank's ability to obtain lender-specific information over multiple interactions. A rich literature investigates the characteristics of the lender-borrower relationship. For extensive surveys, see Degryse et al. (2009) and Kysucky and Norden (2016). But very little is known about the relationship of wealthy bank clients to their (private) banks. Our paper thus extends the existing literature by providing evidence on the relative importance of factors such as reputation and performance of banks.

Third, there is only very limited empirical research on private banking.[4] Delaloye et al. (2012) conduct an event study to investigate the importance of banking secrecy for Swiss private banks. Other streams of literature focus on specific wealth management and banking topics. Foehn (2004) conducts a case study to determine the client value of private banking clients in Switzerland. Burgstaller and Cocca (2011) study the efficiency of private banking institutions in Switzerland and Liechtenstein. Cocca (2008) considers size effects and integrated business models in private banking in Switzerland and Liechtenstein. Horn and Rudolf (2012) investigate

[4]Hens and Bachmann (2008) as well as Maude (2006) provide overviews of private banking in general.

the determinants of service quality and its effects in private banks. Horn and Rudolf (2011) document that financial security affects customer loyalty more than service quality and they provide a first indication that banks outside Germany benefit more from their reputation for security.

Fourth, broadly speaking, our paper is also related to the mutual funds literature, which has investigated determinants of fund flows (e.g., Agarwal et al. (2009)). Kostovetsky (2016) demonstrates that following management-company ownership changes, a substantial decline of flows occurs. While there are some similarities, there are many differences between the mutual funds to private banks sectors, and a transfer of results obtained from one to the other is impossible.

The remainder of this paper is organized as follows. Section 2 presents some historical background of Swiss private banking. Section 3 provides theoretical background of private banking for which section 4 presents the hypotheses, and the empirical strategy. Section 5 describes the data. Section 6 presents the results while section 7 concludes.

2 Swiss private banking in the historical perspective

Switzerland was an early-bird in the Industrial Revolution,[5] but a laggard in banking. While local savings banks developed steadily from about 1830, the first decades of industrialization, until the 1860s, could mainly be financed from private savings. Yet, Swiss financial advisors had already offered their services internationally more than a century before the country even saw its first banks.

After revocation of the Edict of Nantes in 1685,[6] numerous Huguenots found refuge in Switzerland, particularly in Geneva. In an attempt to rescue some of their funds left in France they acquired financial practice and founded financial institutions. Most French banks therefore were of Swiss origin, among them the Banque de France (Luthy, 1963). Jean-Frédéric Perregaux, from Neuchâtel, financed the Napolen Bonaparte's coup d'état of 1799; in exchange he got the permission to create the Banque de France of which he became the first "regent" (Szramkiewicz, 1974).[7] Around the same time, two sons of Geneva – Jacques Necker (in 1777) and Albert Gallatin (in 1801) – became the equivalent of finance ministers in France and in the US, respectively.

[5] Thanks, among else, to the ubiquity of water power.
[6] The revocation of the Edict ended religious tolerance and led to the emigration of many (protestant) Huguenots.
[7] The title Governor was only introduced a few years later.

After the Versailles treaty neutral Switzerland acquired the reputation of a financially safe haven. By the early twentieth century, both, the big banks and a number of mainly smaller full liability banks offered specialized service in wealth management. By that time, in several European countries, most notably France, increased taxation had replaced religious prosecution as a motive to move funds into Switzerland. Swiss banks were known for a strong secrecy culture (still based on civil law) and they openly advertised their assistance in tax protection abroad (Guex, 2000). During the First World War, foreign funds poured into Switzerland thanks to political neutrality, the stable currency, free movement of capital, mild taxation and, last but not least, bank secrecy (see Guex, 2000). The strong position of Switzerland as a financial center was symbolized in the choice of Basel as the domicile of the Bank for International Settlements established in 1930.

In 1934, reacting to foreign pressure against its save haven policy, Switzerland made violations of bank secrecy a violation of the penal code in Article 47 of the Banking Act. A further feature of Swiss bank secrecy attractive for tax-shy international clients was the distinction between tax avoidance and tax fraud. Since only the latter is prosecuted under the penal code (avoidance only being punished by administrative fines), Swiss authorities cannot provide international legal assistance in tax avoidance cases.

Given this favorable framework Swiss banks became leading wealth managers after the Second World War.[8] Swiss banking secrecy became a legend entering many books and movies. An initiative launched by the Social Democrats, calling, among else,[9] for the demise of bank secrecy, was rejected by a wide margin in 1984. In the late 1990s Switzerland came under international pressure from groups representing, mainly Jewish, victims of the Holocaust (and their heirs), whose funds had become dormant in Swiss banks. In the following years the issue was settled in several agreements; yet, Swiss banking secrecy has been somewhat tarnished since. About simultaneously to the 2007-2008 international Financial Crisis, Swiss banking took another hit: Pressure from several important countries led Switzerland to accept so-called automatic exchange of information as an international standard, thereby putting an end to bank secrecy in matters of taxes for non-residents. As a consequence of the financial crisis and the shift of focus to tax compliant customers, assets under management stagnated from 2008-2013. They have started to

[8] Disclosure of funds under management and net new money only became mandatory as of 2003-2004, though.
[9] Another item was the introduction of government deposit insurance

grow again, and Swiss banks still are the leading wealth managers worldwide managing foreign funds of, roughly, USD 2.5 trillion.

3 Theoretical background

To fix ideas and as a basis for our empirical hypotheses we provide a simple formalization of a private bank's choice problem. A competitive bank offers advisory services on its assets under management. For each period t the bank maximizes profit

$$P = A \cdot m - C, \tag{1}$$

where A denotes assets under management (AuM), m the gross profit margin, and C cost. The bank is a price taker in the AuM market, i.e., m is given exogenously. At the beginning of period $t+1$, the bank has a stock of assets under management, A_t. The bank can influence AuM growth and cost, however, via decision variables like number of employees, wage per employee and others. Decision variables have a lagged influence on AuM and cost. For example, a decision to increase staff only becomes effective in the following period. The maximization problem, based on Equation (1), therefore reads:

$$\max_{\mathbf{X}_t} P_{t+1} = \left(A_t + \Delta A_{t+1}\left(\mathbf{X}_t\right)\right) m_{t+1} - C_{t+1}\left(\mathbf{X}_t\right) \tag{2}$$

where $\mathbf{X}$ represents a vectors of decision variables affecting AuM and cost.

One difficulty of studying private banks' behavior in the data is that the overall variable of interest, P, is not observable: Some Swiss private banks do not disclose profit figures, while others publish profit figures post window-dressing. Assets under management (AuM) are, however, published and are comparable across banks, thus providing the basis for a performance measure. A complication arises here, too, in that an increase in AuM may either indicate true inflows of assets to be managed by the bank or just a higher value of assets already managed by the bank. In particular, swings in asset values may be due to the stock market, to changes in the interest rate and to changes in exchange rates, a factor that is quite important in a small country with its own currency.

We are interested in what banks can do to influence the actual in- and outflows. Thus, to exclude effects due to changes in valuation, we will use figures net of valuation effects, namely,

Net new money (NNM). In our empirical analysis, we normalize NNM by the stock of assets under management.

Thus, the bank's maximization problem becomes:

$$\max_{\mathbf{X}_t} NNM_{t+1}\left(\mathbf{X}_t\right) m_{t+1} - C_{t+1}\left(\mathbf{X}_t\right) \tag{3}$$

In an *individual* bank's profit maximum, it equalizes the marginal benefit and marginal costs of the elements of $\mathbf{X}$. When regressing P (or NNM) on $\mathbf{X}$ for an individual bank, a non-zero coefficient on an element of $\mathbf{X}$ would suggest that the bank does not use the optimal amount of the respective input. In an empirical estimation of P (or NNM) *across* heterogeneous banks, though, one would not expect the coefficients of the elements of $\mathbf{X}$ to be zero. Banks using more of one particular input may be more profitable than those using less, even though individually they all operate at their optimum. Non-zero coefficients in our estimation may, therefore, reflect two different things: (i) a non-optimal factor mix at individual banks and/or (ii) profit-relevant heterogeneity of factor combinations across banks.

A bank's non-optimal factor mix in the sense of (i) may be due to the use of factors coming in discrete or even exogenous quantities. We will consider two such factors. The first is a variable we call "skill", a bank-specific parameter of cost efficiency, comparable to total factor productivity in a Cobb-Douglas production function. It reflects a bank's ability to optimally combine the input factors. A second profit-relevant variable is the reputation of a bank. The next section details our hypotheses regarding these factors and discusses their measurement.

4 Hypotheses and empirical strategy

We test two primary hypotheses as well as a number of secondary conjectures.

4.1 Efficiency and skill

The first main hypothesis is that the performance of a bank in attracting new money depends positively on the bank management's "skill." Skill itself is unobservable. However, we can estimate, from the data, how efficiently a bank has been operating, relative to its peers, and this efficiency provides a measure of skill. Specifically, we expect that banks that are relatively more efficient than predicted by our model also perform better in attracting net new money. We use

the *cost-income ratio*, the total operating expenses and depreciation per unit of net operating profit, as an indication of a bank's efficiency. (This measure is also widely considered in practice.)

Concretely, as a first step we estimate a regression model of the cost-income ratio using a set of input factors that describe the cost structure and the income structure of the bank. This allows us to identify both a bank-specific *abnormal efficiency* and a bank-year-specific *yearly abnormal efficiency* by predicting the idiosyncratic (time-varying) residuals.

Let $c(\mathbf{X}) = C/(A * m)$ denote the cost-income ratio (CIR). Splitting the cost-income ratio $c_{it}(\mathbf{X})$ of bank i in year t into a constant bank specific component, $\bar{c}_i$, and the bank's yearly component e_{it} yields:

$$c_{it}(\mathbf{X}) = c(\mathbf{X}) + \bar{c}_i + e_{it}. \tag{4}$$

Our econometric methodology to measure $\bar{c}_i$, the bank-specific *abnormal efficiency* and the bank-year-specific *abnormal yearly efficiency*, e_{it}, as indicated in Equation (4) is to estimate a variance-components model of the cost-income ratio (CIR) over banks and time.

We thus estimate the following CIR_{it} model as an explicit version of Equation (4):

$$CIR_{it} = \alpha_0 + \alpha_1 x_{1it} + \cdots + \alpha_p x_{pit} + (\zeta_i + \epsilon_{it}) \tag{5}$$

where $\mathbf{X}_i$ contains capturing the (1) cost structure (e.g., the fraction of personnel expenses over total costs) and (2) income structure (e.g., the fraction of fee & commission income over total income), as well as size of the bank. Denote the bank fixed effects by $\hat{\zeta}_i$ and the time-varying residuals by $\hat{\epsilon}_{it}$. Positive $\hat{\zeta}_i$ means that the bank has, on average, a higher CIR than predicted by our model. Banks with a positive (negative) $\hat{\zeta}_i$ are relatively less (more) skilled.

In a second step we estimate net new money as:

$$NNM_{it} = \beta_0 + \beta_1 \hat{\zeta}_i + \beta_2 \hat{\epsilon}_{i,t-1} + \beta_3 z_{1i,t-1} + \cdots + \beta_q z_{qi,t-1} + \nu_{it} \tag{6}$$

where $\mathbf{Z}_i$ contains other variables that potentially explain the NNM_{it}. We expect β_1, the coefficient on the bank fixed effect, which indicates an abnormally inefficient bank, to be smaller than zero. In addition, we on purpose include the lagged year-specific residual. For β_2 we do not have a clear expectation. A positive value in a given year t may be the result of extraordinary investment in marketing (also after bad media coverage) and most likely produce higher money inflows in the coming year, while a positive value may also be the result of high costs due to

depreciation of intangible assets such as value adjustments on client relationships and result in lower money inflows in the year after.

4.2 Reputation and trust

The second main hypothesis is motivated by the idea, so far evidenced mostly anecdotally, that private banking is a relationship-driven business that is based on the central pillars confidentiality, security, trust, and the perceived level of client advisory service. The idea that client trust is a key source of revenues for "money doctors" is analyzed theoretically in Gennaioli et al. (2015). In recent years all these pillars have been seriously influenced by a series of negative outcomes; be it theft of bank clients' data, tax evasion scandals, or the abolishment of the banking secrecy. We hypothesize that banks incurring negative press coverage related to fraudulent business practices related to tax evasion find it harder to attract new money and may even experience money outflows. Even though, in the longer run, such reports may be endogenous to the bank's past decisions, the occurrence and timing of media reports is quite exogenous in the short run. We expect that the effect of negative media coverage is especially strong for smaller banks that are less diversified, and do not have access to other markets or other products to cover potential reputation damages.

4.3 Additional conjectures

Third, we will consider a number of additional conjectures. Related to the creation of strong relationships with clients, we hypothesize that banks focussing on service characteristics such as large number of bank employees per million in AuM, high incentives for employees as measured by wage costs per employee, and growth in the number of employees are positive performance drivers.

We also note that the goal of wealthy banking clients is to grow or at least maintain their wealth. This is why we expect that banks providing a high return on invested funds perform better in attracting new funds. We are especially interested in whether investment performance or reputation is more important for attracting new funds.

Moreover, we expect that banks offering asset management services and creating own funds profit from spill-over effects compared to banks focusing on relatively insensitive clients in management mandates. Finally, we expect that larger banks that potentially have access to various

markets and other business segments attract more new funds.

5 Data

5.1 Sample

The empirical analysis relies on a unique hand-collected panel data set of private banks domiciled in Switzerland or in the Principality of Liechtenstein (abbreviated as FL), drawing on data described in Birchler et al. (2015).

We combine Swiss with Liechtenstein banks since the two countries are very comparable in market structure due to geographical proximity, identical currency, and very similar regulation and reporting standards.

We start with all banks in Switzerland and Liechtenstein that use Swiss GAAP FER or the comparable Liechtenstein reporting standard. Then, we exclude banks that do not fulfill two additional criteria: (1) availability of audited data at least once in the sample period 2002-2014, and (2) reporting fee and commission income always above one third of total revenues in a moving average of three years.[10] Criterion (1) leads to missing observations mostly in the early years of the sample period. As for criterion (2) some banks do not fulfill the one third rule only temporarily (because of strong performance in other bank-related areas). We only include banks focussing on financial and investment advisory services for wealthy clients. This leaves us with a sample of 98 banks (87 banks in Switzerland and 11 banks headquartered in FL). A sample attrition overview may be found in Table 1.

Insert Table 1 around here.

Insert Figure 1 around here.

For Switzerland our sample of private banks corresponds to roughly one third of all regulated banks and roughly one fifth of all assets under management in Switzerland. We illustrate the composition of the sample in Figure 1. We have data of Swiss banks covering roughly CHF 4.7 trillion in assets under management. Out of this, our study does not include the very largest

[10] Per the rules of the Swiss Banking Authority, banks in Switzerland fulfilling this criterion have to hand in 'Table Q' to the supervisor (SFBC-Circ. 08/2, Rz 198a/b). Table Q lists six items: (i) assets in collective investment schemes managed by the bank, (ii) assets under discretionary asset management agreements, (iii) other managed assets, (iv) total managed assets (including double-counting), (v) double-counted items, and (vi) net new money inflow/outflow (including double counting)

wealth managers, UBS and Credit Suisse, which together alone make up for about half of the overall assets. Like, for example, Julius Baer, they report under IFRS/US GAAP (instead of under the Swiss standard). Next, some banks cannot be included because they are true private banks that do not publish reports. A prime example of this category is Pictet (who published a report for the first time in 2015). (The 2012 assets under management here are estimated by Birchler et al. (2015).) The sample covered roughly accounts for CHF 1 trillion in assets. Figure 1 also illustrates the distribution of size in the sample of 2012. Two banks have around CHF 100 billion in assets under management, and the remainder are smaller, with the smallest banks somewhat below CHF 1 billion in assets under management. For Liechtenstein almost two thirds of all banks are in the sample.[11] Banks in Switzerland and Liechtenstein are required to publicly disclose their annual reports. (A challenge does arise, however, in that public disclosure does not necessarily mean that the reports are made available, for example, on a website. In some cases, as the data were built up over the years, the authors had to contact banks directly to obtain the reports.) Only 2 of the 98 banks in our sample are listed at a stock exchange.

Our sample period ranges from 2002 to 2014. We start in 2002 since this is when the Swiss Banking Authority implemented the new disclosure rules regarding assets under management and net new money. The panel is unbalanced due to changes in availability of annual reports, due to mergers and acquisitions, or other status changes. During the sample period 16 banks were dissolved, liquidated, or acquired by a competitor while 6 banks were newly founded or (re)started to publish their reports and were thus included newly(again) in the sample.

5.2 Dependent variables

Our main variables of interest are the cost-income ratio (CIR) and net new money (NNM), which equals the net amount of assets under management (AuM) of new and existing clients less the amount of assets withdrawn.

The *cost-income ratio* is total operating expenses and depreciation per unit of net operating profit. We include depreciation in the calculation of the cost-income ratio to account for the fact that banks can either buy or lease tangible assets. Consequently, leasing expense are considered as operational costs and are incorporated in total administrative expenses. CIR is thus calculated

[11] For example, for the year 2014, there are 17 banks in Liechtenstein. 11 banks fulfill our sample selection criteria.

as the sum of personnel expenses, material costs, and depreciation divided by the sum of interest income, fee & commission income, trading income, and other income.

Turning to net new money, the Swiss Federal Banking Commission (SFBC)[12] defines AuM to encompass all assets in self-managed collective investment instruments, assets from investors and clients in a wealth management contract. Additionally, AuM include assets in self-managed funds and assets with an investment advisory and/or investment service mandate.[13] "Custody-Assets" - assets that are held exclusively for safekeeping, custody or transaction purposes - are not considered as AuM as the bank does not provide any consultancy service.[14] The disclosure rules do not require separating out inflows and outflows in the presentation of NNM figures.

Importantly, interest and dividend income as well as market and currency movements on clients' assets are excluded from this calculation. Thus, a positive NNM figure implies that the aggregated net asset inflow is higher than the aggregated amount that clients withdrew in the same period.

We standardize NNM figures by the average AuM holdings in the previous and current period to generate $NNM/AvAuM$, our main dependent variable.

5.3 Main explanatory variables

5.3.1 Cost-income ratio (CIR) regression model

For the CIR regression model we use variables that describe the business model and structural set-up of a bank in order to have a high explanatory power for predicting the cost-income ratio for a bank for any given input factors. We use explanatory variables of three sources to describe the business model: (1) cost structure, (2) income structure, and (3) size.

We describe the cost structure by two different variables: (i) *personnel costs* and (ii) *depreciation costs* as a fraction of overall costs. Personnel costs are the sum of salaries, social security contributions, pension contributions and other personnel related expenses. Depreciation costs include depreciation of fixed assets and more importantly intangible assets but exclude extraordinary value adjustments. We model the cost structure by dividing personnel costs and depreciation

[12] See SFBC Circular 24 (2002), Circular 38 (2006) and Circular 2 (2008).

[13] In particular, AuM include liabilities towards customers such as savings and deposits, time deposits, fiduciary deposits and all portfolio assets. However the statement is a non-exhaustive list and further details of inclusion have to be derived from the investment purpose.

[14] As reporting institutions are required to disclose the detailed criteria concerning the classification on custody assets, there could arise potential data limitations.

costs by overall costs which sum up personnel, material and depreciation costs.

Private banking costs are mainly driven by personnel costs which make up approximately 60% of all costs. The more a bank is focused on tailor-made wealth management (as e.g. compared to interest-bearing activities or custodian business) the larger is the fraction personnel costs in total costs, the larger are margins, and the lower is the cost to income ratio. A bank with high depreciation costs either has a high stock of tangible assets or extraordinarily writes off intangible assets due to bad circumstances. Balancing the two cost factors we expect that high personnel costs (and vice-versa low material and depreciation costs) reflect a lower cost-income ratio while high depreciation costs contrariwise reflect a higher cost-income ratio.

For the income structure we distinguish two different income sources: (i) *fees and commissions* and (ii) *trading income*. Fees and commissions income is the net result from financial advisory and other services provided to clients. It captures the degree of specialization and is considered to proxy private banking knowledge. A focus on wealth management services leads to a higher fraction of income coming from fee and commissions. Trading income captures the net result from trading operations on foreign exchange and other securities trading. Operating revenue sums up fee & commission, interest, trading, and other income. We describe the income structure by dividing its components by operating revenue.

The last variable we use in the cost-income ratio regression is size. We expect that there are economies of scale in cost efficiency and hypothesize a smaller cost-income ratio for larger banks.

5.3.2 Net new money regression model

For the NNM regression model we use the predicted level-1 and level-2 regression residuals $\hat{\zeta}_i$ and $\hat{\epsilon}_{i,t-1}$, that is, the bank-specific abnormal cost-income ratio and the abnormal bank-year-specific cost-income ratio, as shown in equation 5. An abnormally high value of $\hat{\zeta}_i$ indicates a bank with a constantly higher CIR than estimated by the model. An abnormally high value of $\hat{\epsilon}_{i,t-1}$ indicates a bank with a higher CIR than estimated by the model for the bank i in year $t-1$.

Furthermore, we introduce the *negative media* dummy, our second main variable of interest. Negative media is a binary indicator variable that equals one if a private bank received a negative media mention in a given year. In order to evaluate media coverage we conduct a content analysis of the most influential and popular opinion-forming general and business newspapers in Switzerland.

For the media analysis we assume that relevant news and bulletins affecting the Swiss financial center and the individual private bank are published and reported in the Swiss home media first and are afterwards translated to international media agencies and broadcasted by international newswires. We conduct a content analysis using LexisNexis Academic International News and Wire database. For each year and institution we search for articles that cover the bank in combination with reportings about tax scandals, banking secrecy, data theft or double taxation agreements. In a second step we classify each article manually to have either positive or negative content. Further details concerning the use of specific search terms and the inspected newspapers and additional information of the media coverage in Switzerland and Germany can be found in the Appendix in Table A-1.

If financial security is a signal of stability demanded by affluent clients we expect that banks with a higher *equity ratio* attract larger money inflows than banks with a high level of leverage. Equity ratioh is the unweighted proportion of shareholders equity to total assets and is a measure of the bank's capital strength. In recent years, high leverage has been tantamount to an increased aggressiveness of the business model and managerial attitudes. Thus, a higher equity ratio may also predict smaller net new money flows.

Since private banking is a pure service industry (Chase, 1981) predominantly determined by characteristics such as interaction quality (competence, investment proposal), service product quality (performance, product, and service range) and service environment quality (financial security and corporate identity).[15] Service quality per se is not directly measurable. We thus capture *service quality* indirectly through the total number of employees standardized by average AuM. We expect that the more employees a bank allocates to AuM the better becomes the service quality. Two other ways to increase the service quality is to either increase the number of employees or to provide employees stronger incentives to attract new funds. We thus use the *Growth of Number of Employees* and the *Wage Costs per Employee* as further explanatory variables for service quality. Wage costs per employee is clearly a highly noisy measure of incentives. It is motivated by (a) the fact that the companies we study are in the same industry and should thus be competitive to each other with respect to pay practices and (b) the notion of basic economic theory that risk-averse agents receiving higher-powered incentives receive higher pay.

[15]For example, Horn and Rudolf (2011) found that an improvement of service quality leads to a higher growth of assets under management.

Finally, we assume that the goal of private banking clients is to grow or at least maintain their wealth. Clients are aware of a private bank's past performance to assess credibility and competence, similar to what clients of investment banks may do (Chemmanur and Fulghieri, 1994). Therefore, we posit that better past performance in the sense of greater client value created is positively associated with NNM growth.[16] We approximate *Client Value* by measuring the growth of AuM over a one-year period, subtracting out the growth of the asset base through net clients' fund flows in the same period.

5.3.3 Descriptive Statistics

Because little is known so far about wealth management banks, we begin by offering some detail on the descriptive statistics of key variables of interest; see Tables 2 and 3.[17] Figure 2 shows the development over time of the two major dependent variables, the cost-income ratio (CIR) and net new money (NNM).

Insert Tables 2 and 3 around here.

Insert Figure 2 around here.

The banks in our sample exhibit an average CIR of 77.9% with a standard deviation of 22.0%. As seen in Figure 2, the average CIR has increased substantially over the years, with a structural break in 2008 (which makes it important to include year fixed effects in the analysis). This reflects challenges Swiss banks have experienced in the wake of increasing regulation and increasing international competition (and, thus, declining revenues) as Swiss banking secrecy has come under attack.

In the cost structure, we observe that as expected the largest cost position belongs to personnel expenses with 60.1%, material costs equal approximately one third of the costs while depreciation plays a minor role (on average 6.8%) but fluctuates relatively strongly (standard deviation for depreciation cost is 6.9% while the much larger position of personnel expenses exhibits an only slightly larger standard deviation of 8.4%).

[16] Note that a full test of this hypothesis should also consider the risks with which a given performance was achieved. However, this information is not available to us, clearly presenting a limitation of our analysis.

[17] We provide correlation matrices for all variables that are used in the regressions in the Appendix in Tables A-2 and A-3.

Also as expected the largest income source is from fee & commissions with almost two thirds of operating revenues. Trading income represents 11.5% of operating revenues and thus plays a marginal role. Most private banks also offer lombard loans and thus generate some interest income. Compared to credit institutions the fraction (20.8%) remains relatively low. Other income plays a minor role for most private banks.

Describing the bank business model, we observe that 23.3% of the banks in our sample provide corporate finance or tax advisory services, 44.0% provide custodian and/or trading services to third-party independent asset managers, 37.4% provide financial and advisory services to institutional clients such as asset funds or pension funds, and 15.9% have specialized teams focussing on services specifically for single wealthy families. 14.2% of the banks have representative offices or branches in other countries within Europe (excluding Switzerland and Liechtenstein) and 25.1% in other countries outside Europe. Roughly one seventh of all observations are from banks that are domiciled in Liechtenstein.

Turning to Table 3, we observe a large heterogeneity for net new money as well as assets under management. On average banks in our sample generated NNM of CHF 364.7 million (approximately USD 366.8 million at end-of-2014 exchange rate) with a large range from a minimum of CHF -2,197.0 million to a maximum of CHF +6,485.7 million. Figures of assets under management are strongly positively skewed with a median of CHF 4,071.2 million and an average of CHF 13,674.4 million. The smallest bank-year observation in the sample displays CHF 339.2 million while the largest exhibits CHF 92,714.7 million. Our main variable of interest NNM/AvAuM is 2.7% on average with a considerably large standard deviation of 11.1%. The largest observed net outflow is -22.4% while the highest net inflow equals +33.9%. As can be seen in Figure 2, average NNM/AvAuM was around 5% in the early sample years, came down to around 0% in 2009 to 2013 and has recently increased again.

For roughly 28.9% of all bank-year observations we identified press articles that match our search terms (we have a total of 4,380 articles for the 98 banks). 9.7% of all bank-year combinations exhibit negative media coverage.

Our control variables show that on average our banks exhibit an unweighted equity ratio of 16.6%, dedicate 0.024 bank employees per million in assets under management (i.e. on average a bank employee manages CHF 41.6 million AuM), pay an average salary of CHF 177,000 p.a.,

and have an average employee growth rate of 2.7%. The performance on funds invested equals +0.6% p.a. with a large standard deviation of 13.4%. On average 5.8% of AuM are invested in funds created by the banks' own funds management division and 23.7% are assigned to dedicated management mandates.

6 Results

Table 4 provides the results from the cost-income ratio (CIR) estimation. We estimate five different fixed effects model specifications. The dependent variable is the cost-income ratio including depreciation costs. In the first four models we estimate CIR using different combinations of cost and income structures. Since both the fractions of personnel costs and depreciation costs as well as the fractions of fee and commissions income and trading income are by definition collinear respectively, we prefer one of the first four models (1-4) to avoid biased estimators. We employ Model (5) in a check to see whether results remain robust when combining all covariates. We employ year fixed effects and cluster standard errors on the bank level.

We find that banks with relatively high personnel costs as a fraction of total costs and low depreciation costs have a lower CIR. This makes sense as banks with a high fraction of their costs coming from personal costs tend to be banks strongly involved in private banking, and this is where margins are higher (and, therefore, the cost-income ratio is lower). Furthermore, banks that are specialized in wealth management and thus generate a larger fraction of income through fees and commissions income relative to trading income have a larger CIR. This is plausible, too, as the fees and commissions business is relatively cost-intensive.

Our models explain between 13 and 18 percent of inherent variability. The unexplained variability is separated into the two estimated level-1 and level-2 residuals, the fixed effect $\hat{\zeta}_i$ and the year-specific residual $\hat{\epsilon}_{i,t-1}$, for each cluster i. For model (1) we get a *between-cluster* standard deviations of $\hat{\theta} = 0.332$ for $\hat{\zeta}_i$ and a *within-cluster* standard deviation of $\hat{\psi} = 0.107$ for $\hat{\epsilon}_{i,t}$ (both mean values are 0 since $\mathbb{E}(\epsilon_{it}|\zeta_i) = 0$ and $\mathbb{E}(\zeta_i) = 0$ by definition). This shows that variation in the unexplained part of the cost-income ratio remains sizeable and that a considerable part can be explained in the variation across banks.

Insert Table 4 around here.

For the estimation of NNM we use the estimated fixed effects and residuals of the CIR esti-

mation. From Table 4 we use the first model specification. In what follows, the bank fixed effect from that regression is denoted abnormal CIR. The year-specific residual from that regression is denoted abnormal CIR year.[18]

In Table 5 we present the results of the random effects estimation.[19] We also employ year fixed effects and cluster standard errors on banks.

Insert Table 5 around here.

We find strong support for both our primary hypotheses. First, banks that are relatively more efficient (displaying negative abnormal CIR) are also more efficient in attracting new money. The coefficient for abnormal CIR is, as hypothesized, negative and significant. In sum, we find strong evidence for the role of skill of a bank as a determinant of NNM growth.

We also find that the coefficient for the bank-year-specific efficiency is negative and in most specifications highly significant. Thus, extraordinary costs such as value adjustments on client relationships in one year also predict bad things for the future.

Our second main variable of interest, negative media coverage, shows a strong negative and highly significant impact on NNM. In model (1) we find that negative media leads to a change of -9.5 percentage points in NNM growth. This negative impact diminishes by $+5.9$ percentage points to -3.6 percentage points if the bank is large, i.e., with AuM above the median. These results for negative media coverage are in line with our hypotheses regarding the impact of reputational damage.

Negative media coverage has a significant economic effect on long-term profits. In Table 6 we derive the perpetuity loss a bank incurs with negative media coverage. Since large banks are able to cushion shocks more easily due to diversification the effect is more pronounced for small banks. In expectation, a small banks loses CHF 7.1mn which equals 3.35 times net profit. Large banks, with AuM above the median, lose CHF 16.6m, the equivalent of 0.73 times net profit.

Next, we estimate several further models to expand our analysis to additional variables of interest. In model (2) we add the equity ratio as regressor and find a slightly significant negative impact.[20]

[18] In variations, we estimated NNM also with the other four CIR models. We find similar results. Table A-4 shows the estimation results for the richest CIR model specification. Most coefficients remain almost identical to Table 5.

[19] Table A-5 shows the results for a fixed effects estimation dropping all cluster-level covariates.

[20] Anecdotally, many bank representatives claim that a high equity ratio signals of financial stability and thereby

In models (3) and (4) we test our hypotheses regarding the service characteristics of a bank. We find that private banks employing more relationship managers per million in AuM generate significantly more net new money. Similarly, banks expending more per employee (e.g., through incentives) achieve somewhat higher net new money, though the effect is not statistically significant. Pure growth of the number of employees is even less significantly positive.

Strikingly, we find that banks displaying higher returns on investment of funds managed for clients do not explain future net new money growth. The corresponding coefficient 'client value' in model (5) is insignificant. Overall, these results provide support for the theory, put forward in Gennaioli et al. (2015), that "money doctors" primarily benefit from the trust that clients put into them, but not from the actual performance they deliver.

In the last model (6) we combine all covariates and find that the coefficients remain robust and significant. Additionally, we add control variables testing whether a focus on the asset management and funds business, family offices as well as regional differences also explain future money flows. We find that banks that have a higher fraction of their funds in own created funds attract more funds in the future. Furthermore, we observe that banks domiciled in Liechtenstein attract 7.1 percentage points more net new money per year than banks in Switzerland.

7 Conclusion

Private banking and wealth management have so far received scant attention in the literature, partially because of the difficulty of obtaining data. Attempting to fill this gap, this paper explores a unique panel dataset of the perhaps most developed wealth management industry worldwide, the Swiss and Liechtenstein private banking industry. Our panel allows us to provide a range of novel descriptive results regarding the cross-sectional and time-series variation of assets under management of Swiss and Liechtenstein private banks and their cost structure.

We obtain two key results. First, skill matters: those banks that operate more efficiently than expected from the inputs which they use also tend to be the ones who attract the most net new money. Second, reputation matters: banks appearing in negative media coverage (in particular

attracts new clients. We find that a high equity ratio is not a positive driver for NNM. One interpretation is that a high equity ratio is a sign that a bank is pursuing a fairly conservative business model in general; thus, a high equity ratio may indicate a somewhat muted degree of aggressiveness in pursuing opportunities to attract NNM. On the other hand a high equity ratio may be the result from high regulatory requirements to hold capital as cushion for an already risky balance sheet structure.

in the context of tax evasion) experience sharply declining assets under management. The latter result in particular holds for small banks. Strikingly, flattering clients (measured by personnel expenditures) and upholding high reputation seem to be still more important than performance in wealth management.

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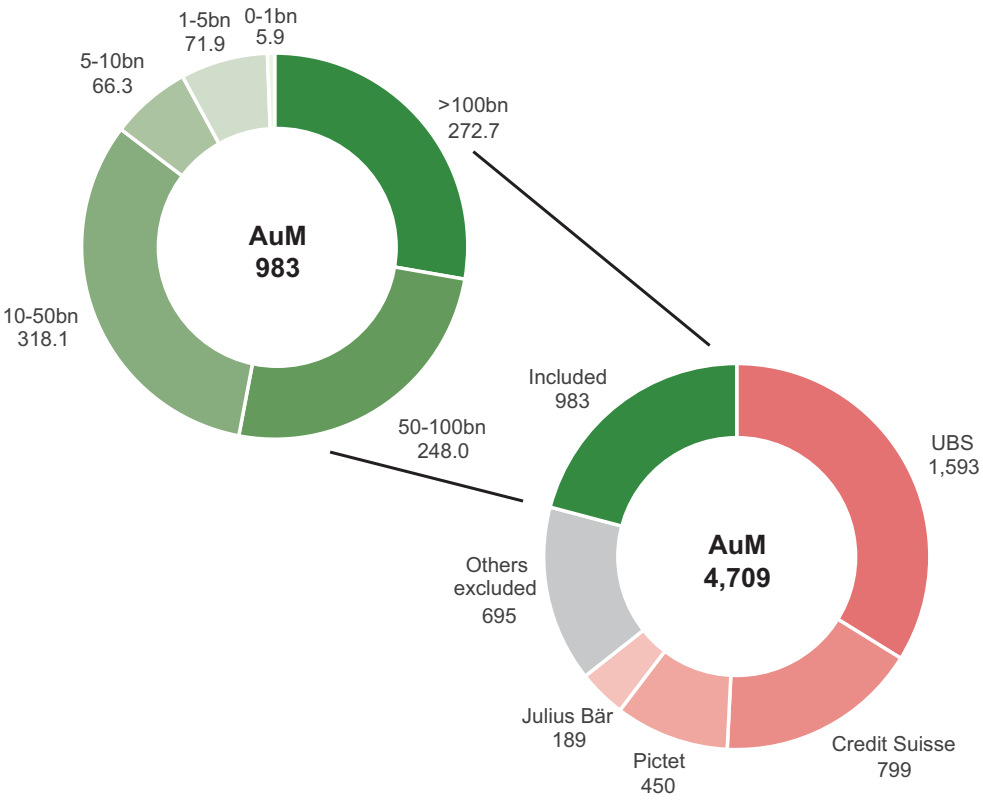

Figure 1

This figure illustrates the composition and coverage of our main sample of Swiss banks for one of the sample years, 2012. In that year, we have data of Swiss banks covering roughly CHF 4.7 trillion in assets under management. UBS, Credit Suisse, and Julius Baer report under IFRS/US GAAP instead of under the Swiss standard and are, therefore, not part of the sample. Some banks, such as Pictet, are not included because they do not publish reports. (Their 2012 assets under management reported here are estimated by Bircher et al. (2015).) After excluding these and related cases, the sample covered by this study roughly accounts for CHF 1 trillion in assets under management of Swiss banks in 2012.

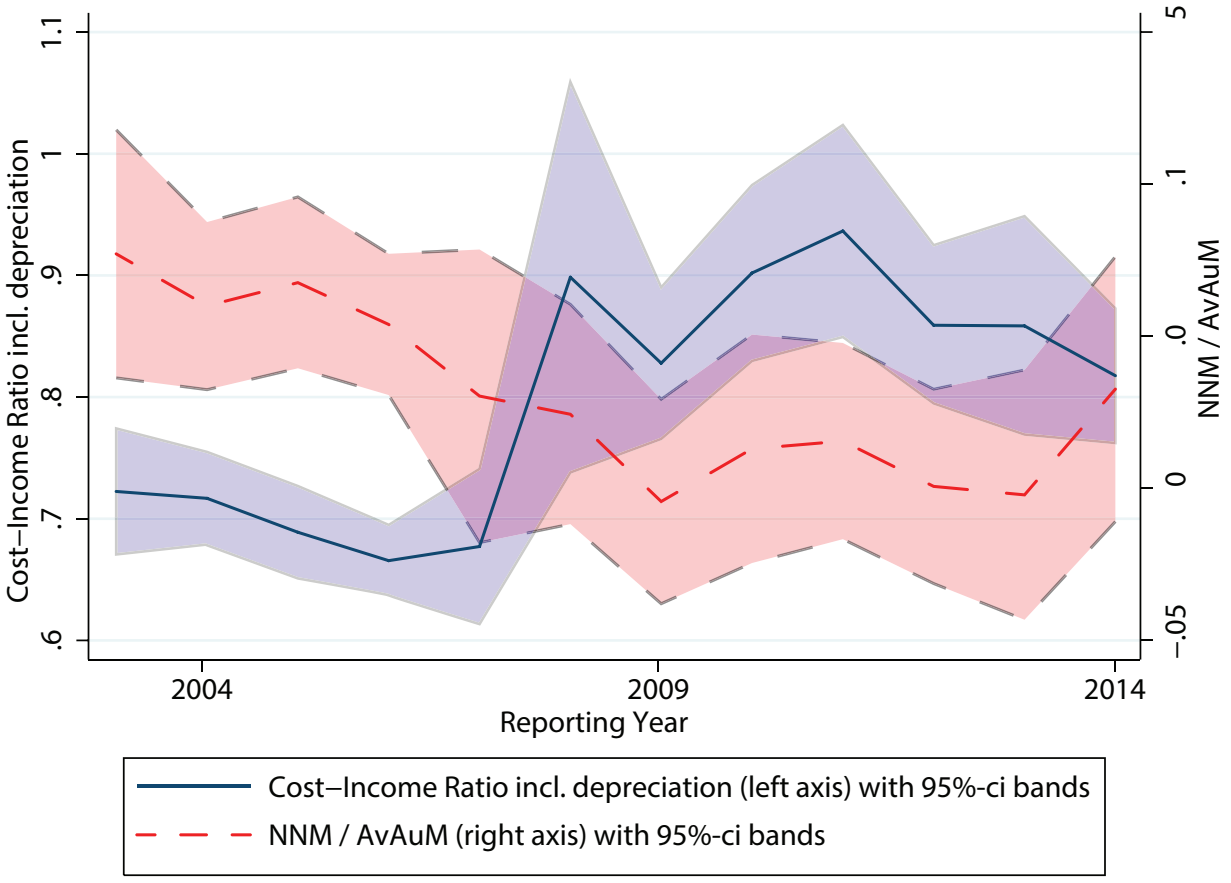

Figure 2

This figure shows the time series of the mean (and surrounding 95% interval) of the cost-income-ratio (left y-axis) and net new money scaled by average assets under management (right y-axis).

Table 1

Sample Attrition Table | This table shows a derivation of the sample used in this paper. We start with all banks in Switzerland and Liechtenstein that use Swiss GAAP FER or the comparable Liechtenstein reporting standard. Then, we exclude banks that do not fulfill two additional criteria: (1) availability of audited data at least once in the sample period 2002-2014, and (2) reporting at least one third of revenues from fee & commissions (f&c) income. Criterion (1) leads to missing observations mostly in the early years of the sample period. As for criterion (2) some banks do not fulfill the one third rule only temporarily (because of strong performance in other bank-related areas). Next, observations are dropped because of missing figures for our main variables AuM or NNM (this is especially true for banks in Liechtenstein where the publication of NNM is not mandatory). Depending on the regression model we use lagged or averaged variables. This may decrease the number of observations used in the regression models displayed in the estimation result tables.

	2002 – 2014	
	N	%
Total bank-year combinations	1,274	100%
excluded due to missing audited data (criterion 1)	436	34.2%
excluded due to temporary f&c income $< 1/3$ (criterion 2)	29	2.3%
Banks fulfilling criteria (1) & (2)	809	100.0%
missing Assets under Management (AuM) figures	*31*	*3.8%*
missing Net New Money (NNM) figures	*99*	*12.2%*
excluded due to missing any of AuM and/or NNM	100	12.4%
Bank-year observations	709	

Table 2

Descriptive Statistics I | This table presents descriptive statics for the dependent and independent variables of the CIR regressions. Observations are for 98 banks, sample period is 2002-2014. The *Cost-income ratio* is our main efficiency measure and is derived as *(Operational Costs + Depreciation) / Operational Revenue*. *Personnel Costs* are the sum of salaries, social security contributions, pension contributions and other personnel related expenses. *Material Costs* covers all operative costs that are not personnel related like occupancy expenses, IT costs, communication and marketing expenses, etc. *Depreciation Costs* include depreciation of fixed assets as well as intangible assets but exclude extraordinary value adjustments. *Total Costs* sum up personnel, material and depreciation costs. *Fee & Commissions Income* is the net result from commissions and fee income from financial advisory and other services provided to clients. *Interest Income* is the net result from interest activities. *Trading Income* is the net result from trading operations on foreign exchange and other securities trading. *Other Income* is the net result of any remaining income like results from the sale of financial investment, income from participations, or other ordinary income. *Operating Revenue* sums up fee & commission, interest, trading, and other income. *Bank domiciled in FL* is a dummy variable equal to 1 if the bank is headquartered in the Principality of Liechtenstein. *Services Corporate Clients* is a dummy variable equal to 1 if the bank provides services for corporate clients like corporate finance advisory, merger and acquisitions advisory, tax advisory. *Services Independent Asset Managers* is a dummy variable equal to 1 if the bank provides custodian and / or trading services for third-party independent asset managers. *Services Institutional Clients* is a dummy variable equal to 1 if the bank provides advisory, trading, financial products services to institutional clients like asset funds or pension funds. *Services Family Offices* is a dummy variable equal to 1 if the bank has a specialized team that provides financial and advisory services specifically to single wealthy families. *Offices / Locations in Europe (excluding Switzerland)* is a dummy variable equal to 1 if the bank has representative offices or branches in Europe excluding Switzerland and Liechtenstein. *Offices / Locations Worldwide (excluding Europe)* is a dummy variable equal to 1 if the bank has representative offices or branches in other countries excluding Europe. The data are winsorized at the 2.5th and 97.5th percentiles.

	Mean	Std. Dev	25th Percentile	Median	75th Percentile	Min	Max	Obs
Efficiency Measure								
Cost-income ratio (incl. dep.)	0.779	0.220	0.624	0.742	0.880	0.443	1.526	709
Cost Structure								
Personnel Costs / Tot. Costs	0.601	0.084	0.546	0.612	0.663	0.398	0.756	709
Depreciation / Tot. Costs	0.068	0.069	0.029	0.053	0.086	0.000	0.555	709
Material Costs / Tot. Costs	0.330	0.082	0.270	0.320	0.382	0.190	0.520	709
Income Structure								
Fee&Com. Income / Op. Rev.	0.634	0.135	0.529	0.647	0.744	0.312	0.874	709
Trading Income / Op. Rev.	0.115	0.060	0.080	0.108	0.141	-0.004	0.319	709
Interest Income / Op. Rev.	0.208	0.125	0.113	0.176	0.282	0.036	0.577	709
Other Income / Op. Rev.	0.044	0.073	0.002	0.015	0.052	-0.034	0.304	709
Bank Business Model								
Services Corporate Clients	0.233	0.423	0	0	0	0	1	709
Services Indep. Asset Managers	0.440	0.497	0	0	1	0	1	709
Services Institutional Clients	0.374	0.484	0	0	1	0	1	709
Services Family Offices	0.159	0.366	0	0	0	0	1	709
Offices/Loc. in Europe	0.142	0.350	0	0	0	0	1	709
Offices/Loc. Worldwide	0.251	0.434	0	0	1	0	1	709
Bank domiciled in FL	0.093	0.291	0	0	0	0	1	709

Table 3

Descriptive Statistics II | This table presents descriptive statics for the dependent and independent variables of the both, the CIR and the NNM regressions. Observations are for 98 banks, sample period is 2002-2014. *Net New Money* is the net Swiss franc amount of assets under management of new and existing clients less the amount of assets withdrawn. *Assets under Management* is the Swiss franc amount of assets under management in millions. *Net New Money / Average AuM* captures the aggregated net amount of assets under management acquired from new and existing clients standardized by the level of previous years AuM, NNM_t divided by the average of AuM_t and AuM_{t-1}. *Overall Media Coverage* is a dummy variable that equals to 1 if the bank was covered in the media in the corresponding year. *Negative Media Coverage* is a dummy variable equal to 1 if the bank exhibits negative media coverage in the corresponding year. The *Equity Ratio* is the ratio of shareholders' equity to unweighted total assets. *Service* captures the proportion of the number of total employees to total AuM expressed million Swiss francs. $Wage\ Costs\ per\ Employee$ divides the sum of salaries and bonuses over average number of employees during the corresponding year. $Growth\ of\ Number\ of\ Employees$ measures the net change in number of employees during a reporting year. $Client\ Value$ captures the growth of Assets under Management over one year's period less the growth of the asset base through net clients funds in the same period. $Own\ Funds/AvAuM$ captures the ratio of AuM allocated in own funds while $Mgmt\ Mandates/AvAuM$ measures the ratio of AuM in separated management mandates. The data are winsorized at the 2.5th and 97.5th percentiles.

	Mean	Std. Dev	25th Percentile	Median	75th Percentile	Min	Max	Obs
Performance Measures								
Net New Money	364.7	1450.6	-119.8	51.0	392.2	-2197.0	6485.7	709
Assets under Management	13,674.4	22,488.4	1,546.9	4,071.2	11,993.0	339.2	92,714.7	709
Log(Assets under Management)	8.457	1.474	7.345	8.312	3.392	5.830	11.437	709
Net New Money / AvAuM	0.027	0.111	-0.032	0.021	0.076	-0.224	0.339	709
Media Coverage								
Overall Media Coverage	0.289	0.454	0	0	1	0	1	709
Negative Media Coverage	0.097	0.297	0	0	0	0	1	709
Other Vars								
Equity Ratio	0.166	0.101	0.093	0.136	0.214	0.048	0.488	709
Service	0.024	0.011	0.017	0.023	0.030	0.001	0.093	709
Wage Costs per Employee	0.177	0.047	0.146	0.170	0.199	0.079	0.428	709
Growth of No of Employees	0.027	0.129	-0.034	0.013	0.077	-0.262	0.434	652
Client Value	0.006	0.134	-0.063	0.022	0.076	-0.297	0.386	637
Own Funds / AvAuM	0.058	0.084	0	0.012	0.090	0	0.308	709
Mgmt Mandates / AvAuM	0.237	0.166	0.118	0.198	0.328	0.006	0.684	709

Table 4

Estimation of Cost-Income-Ratio | This table presents panel regression results for five different fixed effects models to estimate the cost-income ratio (CIR). The dependent variable is the cost-income ratio including depreciation costs. All regressors definitions are identical to the descriptive statistics Tables 2 and 3. Z-statistics based on robust standard errors clustered on banks are reported in parentheses. *** indicate statistical significance at $p < 0.01$, ** at $p < 0.05$, and * at $p < 0.1$.

		Models				
Cost-Income Ratio (incl. dep.)	Hyp	(1)	(2)	(3)	(4)	(5)
Personnel Costs / Total Costs	(–)	-1.475***	-1.461***			-1.102***
		(-7.30)	(-8.04)			(-6.16)
Depreciation Costs / Total Costs	(+)			1.701***	1.628***	0.774***
				(5.61)	(5.38)	(2.90)
Fee & Commissions Income / Op. Rev.	(?)	0.556***		0.623***		0.538***
		(4.35)		(5.02)		(3.70)
Trading Income / Op. Rev.	(?)		-0.470*		-0.541**	-0.194
			(-1.96)		(-2.17)	(-0.76)
Log(Assets under Management)	(–)	-0.205***	-0.191***	-0.231***	-0.216***	-0.212***
		(-4.87)	(-4.73)	(-5.46)	(-5.28)	(-5.21)
Constant		2.912***	3.216***	2.092***	2.451***	2.730***
		(8.11)	(9.22)	(6.08)	(7.18)	(7.60)
Year FE		Yes	Yes	Yes	Yes	Yes
Bank FE		Yes	Yes	Yes	Yes	Yes
Observations		709	709	709	709	709
Number of Banks		98	98	98	98	98
R^2_{within}		0.58	0.55	0.55	0.51	0.60
$R^2_{between}$		0.10	0.09	0.07	0.06	0.09
$R^2_{overall}$		0.17	0.17	0.14	0.13	0.18

Table 5

Estimation of Net New Money / AuM | This table presents random effects panel regression results for six different models to estimate the performance of a private bank as measured by net new money flows. The dependent variable is the Net New Money scaled by AvAuM. All explanatory variables are lagged by one year. The bank-specific abnormal cost-income ratio (ζ_i) as well as the bank-year-specific cost-income ratio (ϵ_{it}) are predicted from model (1) in Table 4. All other regressors definitions are identical to the descriptive statics Tables 2 and 3. Z-statistics based on robust standard errors clustered on banks are reported in parentheses. *** indicate statistical significance at $p < 0.01$, ** at $p < 0.05$, and * at $p < 0.1$.

		Models					
Net New Money / AvAuM	Hyp	(1)	(2)	(3)	(4)	(5)	(6)
Abnormal CIR (ζ_i)	(–)	-0.076***	-0.092***	-0.094***	-0.115***	-0.074***	-0.084**
		(-2.73)	(-2.99)	(-3.18)	(-3.52)	(-2.61)	(-2.44)
Abnormal CIR Year (ϵ_{it})	(?)	-0.114***	-0.112***	-0.135***	-0.120***	-0.099**	-0.113**
		(-2.70)	(-2.67)	(-3.21)	(-2.72)	(-2.07)	(-2.41)
Negative Media Coverage	(–)	-0.095***	-0.101***	-0.094***	-0.107***	-0.099***	-0.106***
		(-3.63)	(-3.69)	(-3.41)	(-3.47)	(-3.53)	(-3.68)
NegMedCov X [AuM > Med]	(+)	0.059**	0.067**	0.058**	0.074**	0.060**	0.075**
		(2.09)	(2.30)	(1.97)	(2.30)	(2.00)	(2.45)
AuM Above Median	(+)	0.036**	0.034*	0.053***	0.048***	0.041**	0.042**
		(2.13)	(1.96)	(3.15)	(2.87)	(2.42)	(2.52)
Equity Ratio	(?)		-0.123*		-0.207***		-0.213***
			(-1.79)		(-2.94)		(-3.04)
Service Quality	(+)			2.315***	1.818**		2.255***
				(2.72)	(2.20)		(2.71)
Wage Costs per Employee	(+)			0.201	0.210		0.285*
				(1.34)	(1.33)		(1.79)
Growth of Number of Emp.	(+)				0.041		0.025
					(1.18)		(0.73)
Client Value	(+)					0.028	0.013
						(0.64)	(0.30)
Own Funds / AvAuM	(+)						0.142**
							(2.13)
Mgmt Mandates / AvAuM	(–)						0.051
							(1.33)
Bank domiciled in FL	(?)						0.071***
							(3.16)
Constant		0.064***	0.091***	-0.037	-0.010	0.034***	-0.054
		(3.55)	(3.79)	(-0.80)	(-0.24)	(2.70)	(-1.18)
Year FE		Yes	Yes	Yes	Yes	Yes	Yes
Observations		607	607	607	551	536	536
Number of Banks		96	96	96	92	92	92
R^2_{within}		0.13	0.13	0.17	0.17	0.13	0.17
$R^2_{between}$		0.02	0.07	0.02	0.07	0.02	0.13
$R^2_{overall}$		0.09	0.10	0.10	0.14	0.10	0.17

Table 6

Loss Due Negative Media Coverage | This table shows an approximation of the loss incurred due to negative media coverage separated by size. We distinguish small banks (Assets under Management below the median) from large banks (above median). A shock through negative media coverage reduces the AuM growth rate by 9.50 percentage points for small banks, and 3.60 percentage points for large banks. We estimate fees & commissions income by multiplying the AuM post media dummy with the median adjusted gross margins. Using a relatively conservative perpetuity yield of 15% we are able to estimate the loss incurred due to negative media coverage. Small banks lose CHF 7.1mn what equals 3.35 times the median net profit while large banks loose CHF 16.6mn what equals 0.73 times the median net profit.

	Small banks		Large banks	
	w/o shock	with shock	w/o shock	with shock
AuM pre Media Dummy [in mio]	1,510	1,510	10,796	10,796
AuM Shock: change in AuM growth	0%	-9.50%	0%	-3.60%
AuM post Media Dummy [in mio]	1,510	1,367	10,796	10,407
Adjusted Gross Margin on AuM [%]	0.74%	0.74%	0.64%	0.64%
Fees & Commission Income [in mio]	11.2	10.2	69.0	66.5
Present Value of FCI [perpetuity yield 15%]	74.9	67.8	460.1	443.5
Loss due to Neg Media Dummy [in mio]		7.1		16.6
Median Net Profit [in mio]		2.1		22.7
# Net Profits Lost due to Neg Media Dummy		3.35		0.73

Johann Wolfgang von Goethe: Faust – a Tragedy.

Translated by Bayard Taylor; Ward, Lock and Co., London and N.Y., 1889; Ch. 11.

Gnomes.

The little crowd comes tripping there
They don't associate pair by pair.
In mossy garb, with lantern bright.
They move commingling, brisk and light,
Each working on his separate ground,
Like fire fly insects swarming round;
And press and gather here and there,
Always industrious everywhere.
With the "Good People" kin we own;
As surgeons of the rocks we're known.
Cupping the mountains, bleeding them
From fullest veins, depleting them
Of store of metals, which we pile,
And merrily greet: "Good cheer!" the while.
Well-meant the words, believe us, then!
We are the friends of all good men.
Yet we the stores of gold unseal
That men may pander, pimp, and steal ;
Nor iron shall fail his haughty hand
Who universal murder planned:
And who these three Commandments breaks
But little heed o' the others takes.
For that we're not responsible:
We're patient – be you, too, as well.

Gnomen.

Da trippelt ein die kleine Schar,
Sie hält nicht gern sich Paar und Paar;
Im moosigen Kleid mit Lämplein hell
Bewegt sich's durcheinander schnell,
Wo jedes für sich selber schafft,
Wie Leucht-Ameisen wimmelhaft;
Und wuselt emsig hin und her,
Beschäftigt in die Kreuz und Quer.
Den frommen Gütchen nah verwandt,
Als Felschirurgen wohlbekannt;
Die hohen Berge schröpfen wir,
Aus vollen Adern schöpfen wir;
Metalle stürzen wir zuhauf,
Mit Gruß getrost: Glück auf! Glück auf!
Das ist von Grund aus wohlgemeint:
Wir sind der guten Menschen Freund.
Doch bringen wir das Gold zu Tag,
Damit man stehlen und kuppeln mag,
Nicht Eisen fehle dem stolzen Mann,
Der allgemeinen Mord ersann.
Und wer die drei Gebot' veracht't,
Sich auch nichts aus den andern macht.
Das alles ist nicht unsre Schuld;
Drum habt so fort, wie wir, Geduld.

Supplementary Table A-1

Media Dummy Generation and Search Terms | For each institution in the database we conduct a media search in LexisNews Academic International News and Wire database. In a first step all articles are collected from two large national Swiss newspapers and the largest Swiss news agency that fulfill certain search criteria. In this step each institution's name is connected with the following search terms. In order to account for different spellings or plural/singular occurrences of distinct word, we use the following search operators. "!" picks up any number of letters after a root word; "∗" serves as a placeholder for one letter; "w/n" is a proximity connector which is used to establish a relationship between terms; the letter "n" can present an arbitrary number. This results in a list of 4,380 articles for 98 banks in the period 2002-2014. From this list we generate for every bank and every year a dummy variable whether the bank has been covered in the newspaper in relation with any of the search terms. The dummy variable *Overall Media Coverage* takes on a value of 1 if there has been at least one newspaper article about the institution in the given year. In a second step we analyze all these manually whether the media coverage has had a negative sentiment. To rule out personal biases we conduct this second step twice by two different individuals. The dummy variable *Negative Media Coverage* takes on a value of 1 if there has been at least one negative newspaper article about the institution in the given year.

Search Terms	
Amnestie w/10 steuer	Kunden!
nicht w/2 deklariert*	Repatr!
Amtshilf!	Schwarzgeld
angeklag!	Scudo!
anklage	Steuerab!
Bankd!	Steuerbe!
Bankgeheim!	Steuerdaten
Doppelbest!	Steuerfl!
Finanza!	Steuerhinter!
Finanzp!	Steuersünd!
Geldw!	Steuerver!
Gesetz!	Strafsteuer
IRS!	unversteuert*
Kont**dat!	

Supplementary Table A-2

Correlation Matrix CIR-Estimation | This table shows a correlation matrix for the regressors used in the CIR estimation. For definitions of the variables see Table 2. * indicates statistical significance at $p < 0.1$.

	(1)	(2)	(3)	(4)	(5)
(1) Cost-Income Ratio (incl. dep.)	1				
(2) Personnel Costs / Tot. Costs	-0.30*	1			
(3) Depreciation Costs / Tot. Costs	0.11	-0.19	1		
(4) Fee & Com. Income / Op. Rev.	0.16	0.17	-0.28*	1	
(5) Trading Income / Op. Rev.	0.02	-0.19	-0.05	-0.34*	1
(6) Log(Assets under Management)	-0.23*	0.21*	0.14	-0.15	-0.19

Supplementary Table A-3

Correlation Matrix NNM-Estimation | This table shows a correlation matrix for the regressors used in the NNM estimation. For definitions of the variables see Table 3. * indicates statistical significance at $p < 0.1$.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1) Net New Money / AvAuM	1												
(2) Abnormal CIR (ζ_i)	-0.15	1											
(3) Abnormal CIR Year (ϵ_{it})	0.06	0.02	1										
(4) Negative Media Coverage	-0.09	0.34*	0.09	1									
(5) NegMedCov X AuM>Med	-0.09	0.44*	0.03	0.89*	1								
(6) AuM Above Median	-0.12	0.79*	0.06	0.33*	0.49*	1							
(7) Equity Ratio	-0.06	-0.55*	0.07	-0.33*	-0.32*	-0.52*	1						
(8) Service Quality	-0.08	-0.16	0.04	-0.03	-0.08	-0.35*	0.18	1					
(9) Wage Costs per Employee	0.09	0.36*	0.09	-0.13	-0.06	0.35*	-0.12	-0.53*	1				
(10) Growth of Number of Emp.	0.59*	0.04	0.18	-0.14	-0.03	0.07	-0.05	-0.16	0.35*	1			
(11) Client Value	-0.15	0.13	-0.19	-0.06	0.13	0.15	0.04	-0.23*	0.32*	0.31*	1		
(12) Own Funds / AvAuM	-0.02	0.05	0.15	0.06	0.08	0.00	0.18	0.02	-0.12	-0.15	0.11	1	
(13) Mgmt Mandates / AvAuM	-0.00	-0.30*	0.01	-0.17	-0.18	-0.14	0.47*	-0.09	-0.03	0.05	0.15	0.11	1
(14) Bank Domiciled in FL	0.24*	-0.35*	0.01	-0.12	-0.14	-0.27*	-0.14	-0.17	-0.17	0.11	-0.15	-0.17	-0.11

Supplementary Table A-4

Robustness Check – Rich CIR Model Residuals | This table presents random effects panel regression results for six different models to estimate the performance of a private bank as measured by net new money flows. The dependent variable is the Net New Money scaled by AvAuM. All explanatory variables are lagged by one year. The bank-specific abnormal cost-income ratio (ζ_i) as well as the bank-year-specific cost-income ratio (ϵ_{it}) are predicted from the richest model specification (6) in Table 4. All other regressors definitions are identical to the descriptive statics Tables 2 and 3. Z-statistics based on robust standard errors clustered on banks are reported in parentheses. *** indicate statistical significance at $p < 0.01$, ** at $p < 0.05$, and * at $p < 0.1$.

		Models					
Net New Money / AvAuM	Hyp	(1)	(2)	(3)	(4)	(5)	(6)
Abnormal CIR (ζ_i)	(–)	-0.075***	-0.091***	-0.093***	-0.114***	-0.073**	-0.084**
		(-2.70)	(-2.98)	(-3.13)	(-3.49)	(-2.57)	(-2.43)
Abnormal CIR Year (ϵ_{it})	(?)	-0.116***	-0.114***	-0.136***	-0.119***	-0.097**	-0.110**
		(-2.75)	(-2.72)	(-3.28)	(-2.72)	(-2.05)	(-2.37)
Negative Media Coverage	(–)	-0.095***	-0.101***	-0.094***	-0.108***	-0.099***	-0.106***
		(-3.63)	(-3.70)	(-3.42)	(-3.49)	(-3.54)	(-3.70)
NegMedCov X [AuM > Med]	(+)	0.059**	0.067**	0.059**	0.075**	0.061**	0.075**
		(2.10)	(2.31)	(1.98)	(2.33)	(2.01)	(2.48)
AuM Above Median	(+)	0.036**	0.033*	0.053***	0.048***	0.040**	0.042**
		(2.10)	(1.94)	(3.11)	(2.85)	(2.39)	(2.51)
Equity Ratio	(?)		-0.124*		-0.208***		-0.214***
			(-1.81)		(-2.95)		(-3.03)
Service Quality	(+)			2.324***	1.833**		2.268***
				(2.74)	(2.22)		(2.72)
Wage Costs per Employee	(+)			0.195	0.204		0.281*
				(1.31)	(1.30)		(1.78)
Growth of Number of Emp.	(+)				0.040		0.024
					(1.16)		(0.71)
Client Value	(+)					0.028	0.014
						(0.64)	(0.32)
Own Funds / AvAuM	(+)						0.142**
							(2.12)
Mgmt Mandates / AvAuM	(–)						0.051
							(1.31)
Bank domiciled in FL	(?)						0.071***
							(3.16)
Constant		0.064***	0.092***	-0.036	-0.010	0.033***	-0.054
		(3.56)	(3.80)	(-0.79)	(-0.22)	(2.66)	(-1.19)
Year FE		Yes	Yes	Yes	Yes	Yes	Yes
Observations		607	607	607	551	536	536
Number of Banks		96	96	96	92	92	92
R2_within		0.13	0.13	0.17	0.17	0.13	0.17
R2_between		0.02	0.06	0.02	0.07	0.02	0.13
R2_overall		0.09	0.10	0.10	0.14	0.10	0.16

Supplementary Table A-5

Robustness Check – NNM Fixed Effects Estimation | This table presents *fixed effects* panel regression results for six different models to estimate the performance of a private bank as measured by net new money flows. The dependent variable is the Net New Money scaled by AvAuM. All explanatory variables are lagged by one year. The bank-specific abnormal cost-income ratio (ζ_i) as well as the bank-year-specific cost-income ratio (ϵ_{it}) are predicted from the richest model specification (6) in Table 4. All other regressors definitions are identical to the descriptive statics Tables 2 and 3. Z-statistics based on robust standard errors clustered on banks are reported in parentheses. *** indicate statistical significance at $p < 0.01$, ** at $p < 0.05$, and * at $p < 0.1$.

		Models					
Net New Money / AvAuM	Hyp	(1)	(2)	(3)	(4)	(5)	(6)
Abnormal CIR Year (ϵ_{it})	(?)	-0.120***	-0.120***	-0.156***	-0.135***	-0.093*	-0.117**
		(-2.77)	(-2.78)	(-3.42)	(-2.79)	(-1.90)	(-2.33)
Negative Media Coverage	(–)	-0.082**	-0.083**	-0.083***	-0.091***	-0.082**	-0.089***
		(-2.52)	(-2.49)	(-2.71)	(-2.98)	(-2.61)	(-2.88)
NegMedCov X [AuM > Med]	(–)	0.050	0.051	0.047	0.057*	0.046	0.052
		(1.41)	(1.42)	(1.43)	(1.78)	(1.34)	(1.57)
AuM Above Median	(+)	0.068**	0.069**	0.079***	0.081***	0.065**	0.073***
		(2.54)	(2.53)	(3.26)	(3.16)	(2.27)	(2.86)
Equity Ratio	(?)		-0.037		-0.227**		-0.231**
			(-0.35)		(-2.12)		(-2.14)
Service Quality	(+)			4.411***	4.834***		5.340***
				(3.72)	(3.18)		(3.29)
Wage Costs per Employee	(+)			0.277	0.355		0.295
				(1.14)	(1.38)		(1.16)
Growth of Number of Emp.	(+)				-0.024		-0.059
					(-0.65)		(-1.58)
Client Value	(+)					0.034	0.062
						(0.77)	(1.29)
Own Funds / AvAuM	(+)						0.108
							(0.75)
Mgmt Mandates / AvAuM	(–)						0.132
							(1.46)
Constant		0.052***	0.060**	-0.112*	-0.116*	0.043**	-0.134**
		(2.98)	(2.14)	(-1.78)	(-1.74)	(2.30)	(-2.00)
Year FE		Yes	Yes	Yes	Yes	Yes	Yes
Observations		607	607	607	551	536	536
Number of Banks		96	96	96	92	92	92
R2_within		0.13	0.14	0.18	0.19	0.14	0.20
R2_between		0.02	0.02	0.01	0.00	0.00	0.00
R2_overall		0.03	0.03	0.04	0.04	0.04	0.05