Beyond Performance: Mutual Funds, Non-Alpha Services, and the Value of Financial Advisors*

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Abstract

We extend the Berk and Green (2004) model to allow clients to derive utility from both performance-related (alpha) services and non-alpha services, such as financial planning. Clients gradually learn about the value of these non-alpha services through their interactions with financial advisors. We test our model predictions using a dataset that covers 3,000 financial advisors and their 500,000 clients' portfolios over 13 years. Consistent with our model, the total number of client investment accounts, our empirical proxy for non-alpha services, is the primary driver of the revenues of broker-sold funds and advisors. Advisor investment skills and clients' performance do not significantly affect revenues. In line with clients gradually learning the value of non-alpha services, successful advisors derive most of their revenue from long-term clients who steadily increase their investments and the number of accounts. Our findings help rationalize the prevalence of financial advisors with costly investment recommendations and the survival in equilibrium of underperforming broker-sold mutual funds.

Keywords: mutual funds, financial advisors, alpha services, non-alpha services, financial planning

JEL Classifications: D14, G11, G20

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1 Introduction

Households rely heavily on financial advisors. In the U.S., advisors intermediate over 50% of mutual fund transactions, and 56% of households report using financial advisors.[1] Despite advisors' guidance, clients' portfolios lag passive benchmarks and deliver lower Sharpe ratios (Foerster, Linnainmaa, Melzer, and Previtero (2017), Chalmers and Reuter (2020)). Similar evidence emerges from studies of mutual funds. Broker-sold funds represent over 50% of retail-oriented funds (Del Guercio and Reuter (2014)). Despite their prevalence, broker-sold funds underperform directly-sold funds. Given that broker-sold funds bundle portfolio management and financial advice, these pieces of evidence posit a similar puzzle. How can we reconcile the underperformance of client portfolios and broker-sold funds with their prevalence among households?

One interpretation of this evidence is that households lack the financial knowledge to assess fund managers' and advisors' skills. Consistent with this interpretation, Gruber (1996) suggests that the presence of "disadvantaged," unsophisticated investors may explain the prevalence and survival of high-fee underperforming mutual funds in equilibrium.[2] Similarly, financial advice is often modeled as a "credence good" because clients cannot verify that the provider (fund manager/advisor) delivers the service they are paying for.[3]

We introduce a complementary explanation. In addition to suggesting specific investments, advisors can provide services in the form of financial planning, broadly defined. For example, advisors can help clients budget expenses, plan retirement and education-related savings, customize their portfolios, optimize taxes, select insurance, and plan an estate. In this paper, we develop a model and provide empirical evidence consistent with clients who

[1]See evidence in Egan, Matvos, and Seru (2015) We provide empirical evidence from Canada, where financial advisors intermediate roughly 80% of retail financial assets (Foerster, Linnainmaa, Melzer, and Previtero (2017).

[2]Among the others, Carhart (1997) and Gil-Bazo and Ruiz-Verdú (2009) document the underperformance of high-fee funds. Sheng, Simutin, and Zhang (2023) find that preference for stocks with low operating profitability and high investment rates drives the underperformance of high-fee funds.

[3]For example, Berk and Van Binsbergen (2022) introduce a model of credence good markets where charlatans—subjects that promise goods or services without providing them—are hard to screen out of the market without harming consumers.

value and are willing to pay for these *non-alpha services*.[4]

We develop a model of broker-sold mutual funds, extending Berk and Green (2004) with two novel elements: non-alpha services and a fixed cost per client to offer them. We model an investor's payoff as dependent on alpha and non-alpha services.[5] Under this assumption, it is straightforward to show that funds with negative net-of-fees alphas could survive in equilibrium if the advisors offer valuable (to their clients) non-alpha services. Furthermore, we assume that advisors incur a fixed, non-negligible cost per client to provide non-alpha services, such as the time spent in client meetings.[6] Under this fixed cost assumption, our model predicts that if non-alpha services matter, overall client fees in dollars should increase with the volume of the non-alpha services offered (i.e., the number of clients). Similarly, the overall percentage fees should decrease in the average investment amount per client. If clients invest more money, the fund can charge a lower percentage fee and still recover the fixed cost for providing non-alpha services via advisors.

To investigate whether clients value advisors' services, we extend our model to allow clients to learn about the quality of non-alpha services over time. We define skilled advisors as those advisors who provide valuable non-alpha services in the long term. Conversely, charlatans are advisors who pretend to offer valuable services but lack the skills to deliver them. Our dynamic model provides testable and differential predictions, which allow us to assess the prevalence of skilled advisors vs. charlatans in broker-sold mutual funds. In particular, our model predicts that skilled advisors experience lower client exit rates (or, equivalently, longer client relationships), investment amounts and usage of non-alpha services increasing with client tenure, and a larger fraction of their total assets under management

[4]Our explanation is in the spirit of Gennaioli, Shleifer, and Vishny (2015) who model managers/advisors to reduce clients' anxiety about investing in risky assets (hand holding). Our paper focuses on financial advisors who provide a broader set of services than simply addressing clients' concerns about market volatility.

[5]Mutual funds can offer alpha services directly. Non-alpha services are provided exclusively through advisors who maintain direct contact with investors. These services are bundled, and clients pay overall fees for the entire package.

[6]While the marginal cost of a fund delivering homogeneous alpha services such as indexing investments could be negligible, advisors offer client-specific non-alpha services which are more challenging to scale, such as one-on-one client meetings.

(AUM) from longer-tenure clients. Our model makes opposite predictions for charlatans.

We test these predictions with over 3,000 Canadian advisors from two mutual dealer companies. These advisors sell mutual funds to retail investors without formal affiliation with any particular mutual fund family. We can observe all the transactions and fees for their more than 500,000 clients between 1999 and 2012.

This data is valuable in several ways. First, we can aggregate our micro-level data at the fund level and investigate the determinants of overall fund fees, both in percentage and dollar terms. The granularity of our data allows us to study how fund assets under management and fees vary with the provision of non-alpha services. In practice, we can use advisor and client-level variables to proxy for the volume of non-alpha services, such as the number of fund advisors, the number of fund clients, and their investment amounts. Second, we can aggregate our data at the advisor level to analyze the determinants of the total annual fees the clients pay to each of these 3,000 advisors. In other words, we can shed light on the types of services associated with the highest propensity to pay for clients and, hence, total revenues for both advisors and mutual funds. Third, we can aggregate data at the advisor-client level to examine clients' learning dynamics as their tenure with advisors evolves. By studying client exit rates, investment amounts, and the use of non-alpha services, we can evaluate whether clients consider these services valuable and if their demand increases over time.

We present three sets of empirical results consistent with the predictions of our model. Since the mutual funds in our sample primarily deliver customized services through financial advisors, we first use the total number of financial advisors paid by a fund to service clients as a proxy for the total volume of non-alpha services. To validate this result, we also use the number of clients as an alternative, directly related to our model proxy for the volume of non-alpha services. Sorting broker-sold funds by fund size (measured by AUM) reveals that larger funds pay significantly more to financial advisors and serve a larger number of smaller clients (i.e., clients with smaller investment amounts).[7] Conversely, the value-added, a measure of alpha services, is lower for larger funds.

Regression analyses of dollar-denominated fees on the number of financial advisors and clients confirm this relationship. The negative correlation between the percentage fees of the funds and the average amount of investment per client further highlights the importance of non-alpha services and the fixed cost of delivering them. This negative correlation is robust across various fund sizes and categories, including money market, fixed-income, balanced, equity, and alternative funds. Our estimates indicate that the fixed cost of serving one additional client in this industry is higher for larger broker-sold funds than for smaller ones. This evidence is consistent with larger funds providing more non-alpha services to each client.

Second, to better characterize non-alpha services, we investigate the drivers of financial advisors' revenues. We analyze detailed records of fees paid to advisors by roughly 500,000 Canadian clients. We regress client fees aggregated at the advisor level on client demographic information (such as financial knowledge, investment horizon, risk aversion, and age), client portfolio characteristics (such as their alphas or riskiness), a proxy for the breadth of services provided by the advisors, for example, the number of different types of investment accounts (such as brokerage, retirement, and college savings accounts) per client and the number of clients, and advisor characteristics (such as age, gender, and skill). Our outcome variables are annual client fees for each advisor, computed in dollar amounts.

We find that clients' demographic information, such as financial knowledge, risk aversion, investment horizon, and age—arguably related to their demands of non-alpha services—are essential determinants of advisor revenues. In contrast, measures of alpha services, such as investment performance, are not. Proxied by the average number of accounts per client and the number of clients, we confirm that the total demand and usage of non-alpha services, such as financial planning, are the major drivers of advisor revenues.

Our evidence at the fund and advisor levels suggests that non-alpha services are a major

[7] Sorting by dollar fee revenues yields similar results, as percentage fee dispersion across funds is much smaller than AUM dispersion. Fund AUM is used to align with standard practices in the literature.

driver of revenues for broker-sold funds and advisors. Nonetheless, this evidence also raises the question of whether non-alpha services are valuable for clients. As discussed in Reuter and Schoar (2024), measuring the value of advisory services requires considering clients' counterfactual behavior absent an advisor. Given the heterogeneity in clients' financial literacy, preferences, and beliefs, this benchmark is difficult to observe and proxy for. This paper evaluates non-alpha services from the client's perspective, using their decisions to enter or exit an advisor's service and adjust investments and service usage as insights into their assessments of the value of these services.

Therefore, we investigate how client behavior evolves with tenure with the advisor. First, the average client exit rate is 8.8% per year, which indicates that an average client will stay with the advisor for 11.4 years if the advisor does not quit. This long relationship between the client and advisor is more consistent with the scenario of a skilled financial advisor than a charlatan.

We sort financial advisors into quintiles based on their total AUM yearly to compare the business model of the most successful financial advisors with those of the least successful ones. We also divide advisors into three groups by their exiting year—in 2-4 years, 5-10 years, and more than 10 years. Data shows that the largest advisors (in the fifth AUM quintile) and advisors running their businesses for more than 10 years have the features of a skilled advisor. These advisors face lower client exit rates, investment amounts and number of plans increasing with client tenure, and a larger fraction of total AUM from clients with longer relationships. In contrast, small advisors (in the bottom AUM quintile) and advisors running their businesses for less than 10 years have the features of a charlatan. In total, over 70% of the industry's total AUM is managed by the largest advisors in the fifth AUM quintile, mainly due to their ability to retain clients and attract more investments from them.[8] These findings suggest that clients' gradual learning of the value of non-alpha services keeps advisors perceived as skilled in the business, rewarding them with more capital. Advisors

[8]We document that client inflows, more so than investment returns, drive the growth in AUM with client tenure.

perceived as charlatans are, instead, driven out of business.

Our evidence that clients increase their investment amounts *and* the number of different investment plans over time suggests that clients value non-alpha services. While a complete cost-benefit analysis is beyond the scope of this paper, it is worth emphasizing how many households could benefit from saving more for retirement and college expenses. Furthermore, offering different types of investment accounts to clients is costly for financial advisors who, for example, are required by the regulator to conduct annual client surveys for each account. Therefore, our findings suggest that advisors might provide valuable and costly-for-them services to clients over time.

One caveat of our analysis is that we do not address whether non-alpha services are fairly priced. Is it worth it for clients to pay a 1% higher annual fee for these services?[9] For a client with an investment amount of C$23,500, the median value in our sample, a 1%-increase in annual fee translates into a yearly cost of C$235 (i.e., C$23,500 $\times$ 1%) or the equivalent of 6.4 hours of work for the average Canadian employee.[10] Is this cost justified for receiving non-alpha services such as financial planning? While we leave the answer to this question to future research, this example highlights the importance of considering fees not just in percentages but also in dollars when assessing the value of broker-sold mutual funds and advisory services for households.

Our paper contributes to the literature on financial advisors by providing new insights into the performance of advised portfolios, the policy discussions on regulating advisors and their incentives, and, more generally, how to assess the value of financial advice.

Advised portfolios can lag the performance of passive benchmarks (Foerster, Linnainmaa, Melzer, and Previtero (2017)) and deliver lower Sharpe ratios (Chalmers and Reuter (2020)). Despite this poor net-of-fee performance, clients might still rely on financial advisors because they value non-investment-related services such as financial planning. Our work is in the

[9] A 1% higher annual fee is equivalent to a 1% more negative net-of-fees alpha. A net alpha of -1% largely aligns with the underperformance of actively managed or broker-sold mutual funds documented in the literature (e.g., Wermers (2000); Del Guercio and Reuter (2014)).

[10] According to Trading Economics, the average hourly wage for permanent employees in Canada is C$36.7. Therefore, C$235 equates to 6.4 hours of work (235/36.7) for the average Canadian employee.

same spirit as (Gennaioli, Shleifer, and Vishny 2015) that model brokers as providing anxiety reduction, and (Linnainmaa, Melzer, Previtero, and Foerster 2024) that document the effect of advisors in facilitating stock market participation. We emphasize a broader, more holistic view of financial advice, not limited to investing in the stock market or addressing clients' concerns about market volatility.

Not equating the quality of advice with net-of-fee investment performance has implications for policies regulating financial advisors. In 2013, the U.K. regulator banned fund commissions and kickbacks to financial advisors. Policymakers in the European Union, Canada, and Australia are discussing similar measures. Recent studies indicate that increasing oversight and imposing fiduciary duties on advisors can enhance the quality of their recommendations.[11] When assessing the effectiveness of these policies, academics and policymakers often assume that reducing commissions can mitigate conflicts of interest and benefit clients. However, if fees also compensate financial advisors for their time spent providing non-alpha services, minimizing fees can generate unintended consequences and reduce the provision of these services. Our findings nicely dovetail with evidence in Linnainmaa, Melzer, Previtero, and Foerster (2024) that an increase in oversight on Canadian mutual fund dealers—the financial institutions in our empirical analyses—reduces the probability of being advised and lowers stock market participation, particularly for investors with smaller accounts. When faced with higher regulatory costs, advisors may adjust their focus away from smaller accounts, leaving unserved those clients who might need advice the most.

Our paper sheds new light on assessing the value of financial advice. Evaluating financial advice can be challenging because it requires comparing clients' actions with what they would have done without the advisor. Researchers may struggle to construct this benchmark due to the heterogeneity in clients' financial literacy, beliefs, and preferences (Reuter and Schoar (2024)). We address this challenge by following a revealed-preference approach. By studying

[11] Charoenwong, Kwan, and Umar (2019) find that advisor oversight reduces misconduct and client complaints. Bhattacharya, Illanes, and Padi (2020) and Egan, Ge, and Tang (2020) document that imposing a fiduciary duty to financial advisors in the deferred annuity market increases risk-adjusted returns, reduces the sale of expensive products, and makes sales more sensitive to expenses.

clients' decisions to start or end a relationship with a financial advisor and any changes in their investment amounts and number of plans, we can better understand the value a financial advisor delivers to clients.

By emphasizing the possibility that broker-sold funds also provide non-alpha services, our paper contributes to the extensive literatures on mutual fund performance, fees, and product differentiation.

Researchers have long debated the performance of actively managed mutual funds, with evidence indicating either zero net alphas (Berk and van Binsbergen (2015)) or persistent underperformance (Gruber (1996), Carhart (1997), Wermers (2000), Fama and French (2010), and Cooper, Halling, and Yang (2021)). The choice of different benchmarks contributes to these mixed results. Our framework highlights the importance of accounting for the level of alpha and non-alpha services mutual funds provide when comparing their performances. This insight offers a novel explanation for two stylized facts in the mutual fund literature. Broker-sold funds yield lower after-fee returns compared to directly sold funds (Bergstresser, Chalmers, and Tufano (2009); Del Guercio and Reuter (2014)) because they provide additional non-alpha services. Funds with lower gross alphas have even lower net alphas (Gil-Bazo and Ruiz-Verdú (2009)) because funds can strategically choose and substitute between alpha and non-alpha services. Moreover, our findings challenge the view that asset managers and clients play a zero-sum game, as in Sharpe (1991). Under this view, gains to managers can come only at the expense of clients. By introducing non-alpha services, we enrich this narrative and allow clients to derive utility from their fees in the form of, for example, financial planning.

Our paper contributes to the literature on the determinants of mutual fund fees by investigating micro-level data on fund investors. Data on fund characteristics such as return, size, age, style, and turnover are widely available. Therefore, many studies focus on the supply-side determinants of fees.[12] Conversely, only a few studies focus on the relationships between investor demand and fund performance or fees. Among these studies, Luo (2002) and Christoffersen and Musto (2002) highlight how funds may strategically charge higher fees to investors with lower sensitivity to performance or fees. Our model with alpha and non-alpha services nicely complements these papers by providing a rationale for *why* some investors have different demand elasticities to performance or fees. Investors are not necessarily naïve and never learn about low investment performance and high fees. They can derive utility from the non-investment services that mutual funds offer through their financial advisors and, hence, have a higher willingness to pay for these funds or derive less utility from returns.

Accounting for investor heterogeneity in financial sophistication and the need for non-alpha services can help understand mutual funds' product differentiation and proliferation.[13] If funds offer different non-alpha services, investors might be willing to pay for them differently.

2 A Model of Broker-Sold Mutual Fund Investing

We introduce non-alpha services in the Berk and Green (2004)'s model to better reflect the breadth of services offered by broker-sold mutual funds. In the Berk and Green's model, fund investors are homogeneous and only derive utility from a fund's net alpha, α^n, (i.e., abnormal

[12] An extensive literature on decreasing returns to scale of mutual funds, including Berk and Green (2004), Zhu (2018), and Barras, Gagliardini, and Scaillet (2022), argues that the fee of a fund, which equals its gross alpha in equilibrium, decreases with an increase in fund size. Other research papers using fund-level characteristics to investigate their fees include, among others, Ferris and Chance (1987), Tufano and Sevick (1997), Latzko (1999), Malhotra and McLeod (1997), Deli (2002), and Cooper, Halling, and Yang (2021). Khorana, Servaes, and Tufano (2009) investigate the effects of country-level characteristics on fund fees. Golec (2003) study the impact of SEC regulation on fees.

[13] Our study closely relates to the literature on costly search and mutual fund marketing (e.g., Sirri and Tufano (1998), Hortaçsu and Syverson (2004), Huang, Wei, and Yan (2007), Gârleanu and Pedersen (2018), Kostovetsky and Manconi (2018), Roussanov, Ruan, and Wei (2021), and Chen, Jiang, and Xiaolan (2023)), and the literature on production differentiation and competition between funds (e.g., Massa (1998), Luo (2002), Wahal and Wang (2011), Khorana and Servaes (2012), Kostovetsky and Warner (2020), and Bonelli, Buyalskaya, and Yao (2021)). Our paper is closely related to Kostovetsky and Manconi (2018), who document that a larger number of advisors is associated with an increase in the fund AUM. We model and provide empirical evidence on non-alpha services as the source of this additional AUM.

returns relative to a passive benchmark net of fees). Our model relaxes this assumption and allows fund investors to have heterogeneous utilities from non-alpha services. Besides generating alpha, a broker-sold fund chooses the type of non-alpha service, s, offered and targets an average investor wealth level, w.

There are two types of fund investors. Given the non-alpha service s and the average wealth level w of the potential fund investors, the first type of investors is a continuum of N risk-neutral fund investors, $i \in [0, N]$, each with a positive utility from this service and w wealth, considering investing in this broker-sold fund. We assume that each investor is granular and $w \ll q$, where q is the total amount of capital invested in this fund. We allow investors' service utilities from investing *each dollar* $s(i)$ to differ across investors. An investor's total amount of utility from investing all her wealth w for this non-alpha service is denoted by $S(i) = ws(i)$, which is the investor i's willingness to pay for this service in dollars. We assume that $s(i)$ is uniformly distributed on an interval from $\bar{s} - k$ to $\bar{s}$. Parameter $\bar{s}$ is the highest utility an investor can get from this service, and parameter k is the dispersion of investors' utility. We assume that fund investors derive positive utilities from this service (that is, $\bar{s} > k > 0$). In particular, we define the function $s(i)$ as below

$$s(i) = \bar{s} - k(1 - i/N), \tag{1}$$

where $s'(i) = k > 0$. Fund investors are ordered from the lowest utility $\bar{s} - k$ to the highest utility $\bar{s}$. In this case, the cumulative distribution function (CDF) of investors' utilities is $F(s(i)) = i$, and the associated density function $f(s(i)) = 1/k$ for all investors $i \in [0, 1]$. Similar to the Berk and Green's model, the second type of investor provides an infinite amount of capital to funds with positive net alphas but has zero utility from the non-alpha services.

Each fund investor i has a total payoff defined as

$$TP(i) = (\alpha^g(q) + s(i) - f)\, w, \tag{2}$$

where f is the percentage fee charged by the fund, and $\alpha^g(q)$, which depends on the fund size q, is the fund gross alpha from its active investment skill. In the Berk and Green model, investors continue to invest in the fund when the marginal payoff is positive (i.e., $\alpha^g(q) - f = \alpha^n > 0$). Similarly, the marginal investor in our model will choose to invest in the fund if her marginal payoff is positive (i.e., $MP(i) = \alpha^g(q) - f + s(i) = \alpha^n + s(i) > 0$). Therefore, all investors with $s(i) > -\alpha^n$ would invest. We assume that $\bar{s} > -\alpha^n > \bar{s} - k$, so there is a fraction of investors investing in the fund.

We assume that the fixed costs of providing alpha services to each investor are relatively small and scalable (e.g., offering indexing services). In contrast, providing heterogeneous/client-specific non-alpha services requires a higher fixed cost per client (e.g., annual in-person client meetings to review portfolios). Therefore, we assume the fund pays a fixed cost of c to provide customized non-alpha services to each investor.

2.1 The Setting with Perfect Competition in Providing Non-Alpha Services

To focus on the non-alpha services, $s(i)$, we first study the case of an index fund, which has no active investment skill (i.e., $\alpha^g(q) = 0$). In this case, Eq.(2) becomes

$$TP(i) = (s(i) - f^s)w, \tag{3}$$

where f^s is the fee for non-alpha services, and we have $\alpha^n = -f^s$ for an index fund. The marginal investor will choose to invest in this fund if $MP(i) = s(i) - f^s > 0$. Therefore, all investors with $s(i) > f^s$ would invest.

If there is *perfect competition* in providing non-alpha services to investors at each level of investment amount w, the equilibrium service fee f^{s*} should be just enough to cover the fixed cost c from serving each fund investor as follows:

$$f^{s*} = \frac{c}{w}. \tag{4}$$

As Eq. (4) shows, the percentage fee should decrease with an increase in the average investment amount per fund investor w. For a fund with n investors investing each the amount w, we can rewrite the percentage fee as below:

$$f^{s*} = \frac{cn}{q}, \tag{5}$$

where q is the fund total assets under management (AUM). As shown in Eq. (5), the percentage fee should increase with the number of fund investors n and decrease with the fund size q to cover, in equilibrium, the fixed cost for serving each fund investor.

Now, we generalize our setting to the case where a fund provides both alpha services and non-alpha services as in Eq. (2) (i.e., $\alpha^g(q) \geqslant 0$). As in Berk and Green (2004), we assume that the provision of alpha services is scarce and that a fund can charge a fee to extract all the rents of its alpha services from investors.[14] Therefore, in equilibrium, the fee charged for the alpha services f^α equals the gross alpha that a fund can generate:

$$f^{\alpha *} = \alpha^g(q). \tag{6}$$

In this general case, the total fee in equilibrium from providing both alpha and non-alpha services becomes:

$$f^* = f^{\alpha *} + f^{s*} = \alpha^g(q) + c\frac{1}{w}. \tag{7}$$

Eq. (7) motivates our first regression analysis. *We can test the importance of a fixed cost per investor of providing non-alpha services by regressing the fund percentage fee, f^*, on the reciprocal of the average investment amount per client and the gross alpha.* If a fund provides non-alpha services at a fixed cost per client, our estimated $\hat{c}$ should be statistically significant and positive in the percentage fee regression.

[14] When there is perfect competition in providing non-alpha services, the fund earns no profits for providing non-alpha services. If the total amount of capital q raised from providing non-alpha services is insufficient for the fund to reach the largest value-added possible from active investing, the fund is also better off providing alpha services to investors chasing only alpha.

Under the *null hypothesis* that the fund fee revenues are entirely from alpha services, the coefficients of the average investment amount per fund investor $1/w$ should be zero. The fixed cost per investor from non-alpha services should not affect a fund's fee revenues.

As in Berk and van Binsbergen (2015), we define the value added of a fund as

$$V = \alpha^g(q) * q. \tag{8}$$

The product of the percentage fee in Eq. (7) and the assets under management of that fund q gives the total fee revenue in dollars of the fund as:

$$F = f^*q = nf^*w = V + cn, \tag{9}$$

where n is the total number of fund investors. Eq. (9) motivates our second regression analysis. *The importance of a fixed cost per investor for non-alpha services can be tested by regressing the total fund fee revenues, f^*q, on the total number of investors, n, and the value added of the fund.* As in the previous case for the percentage fee, if a fund faces a fixed cost per investor in providing non-alpha services, the estimated cost, $\hat{c}$, should be significant and positive in the regression of the total fund fees in dollars.

2.2 The Setting with Imperfect Competition in Providing Non-Alpha Service

In this section, we relax the assumption of perfect competition in providing non-alpha services, allowing the fund to extract larger revenues for better non-alpha services. We start with the case of a fund with a monopoly in providing non-alpha services. As introduced in Eq. (1) and (2), the utility of the service $s(i)$ is uniformly distributed on the interval $[\bar{s} - k, \bar{s}]$ for the investors who value non-alpha services, and a fund investor with $TP(i) = (\alpha^g - f + s(i))w = (\alpha^n + s(i))w > 0$ chooses to invest in the fund. Therefore, all investors with $s(i) > -\alpha^n$ would invest. We can write the total amount of capital invested in this fund as follows:

$$q = (1 - F(-\alpha^n))Nw = \frac{(\bar{s} + \alpha^n)}{k} Nw = \frac{(\bar{s} + \alpha^n)}{\kappa}, \tag{10}$$

where we define $\kappa \equiv \frac{k}{Nw}$. Its reciprocal $\frac{1}{\kappa} = \frac{Nw}{k}$ captures the price-demand elasticity of this service.

To understand this price-demand elasticity and its implications, we first study the case of a fund without active investment skill (i.e., $\alpha^g = 0$). In this case, the fee for service equals $f^s = -\alpha^n$ and Eq. (10) becomes:

$$q = \frac{(\bar{s} - f^s)}{\kappa}. \tag{11}$$

Eq. (11) shows that a one-unit increase in service fee f^s leads to a decrease in the total amount of capital invested q by $\frac{1}{\kappa}$. The price-demand relationship in Eq. (11) is similar to the price-demand relationship of a good in neoclassical economics. This price-demand elasticity $\frac{1}{\kappa} = \frac{Nw}{k}$ increases with the total amount of capital in the market, Nw. That is, the higher the number of clients that value non-alpha services and their wealth, the larger the demand reaction to a change in price (fees). Similarly, the price-demand elasticity decreases with an increase in the dispersion of investors' utility, k. If all investors have similar utility over non-alpha services, then a small change in fees (increase) might significantly change (reduce) the demand.

Moreover, this price-demand elasticity $\frac{1}{\kappa}$ potentially captures the competitiveness of providing the service. If two funds offer perfect substitutes for non-alpha services at the same prices, a small increase in one fund's fee would make all investors switch to the other fund. That is, the price-demand elasticity $\frac{1}{\kappa}$ goes to infinity, or, equivalently, the dispersion of investors' utility relative to the other fund, captured by k, becomes infinitely small. If the service provided by the other fund is an imperfect substitute for the underlying service (i.e., with imperfect competition between these two funds), the price-demand elasticity $\frac{1}{\kappa}$ increases with the substitutability of these two services.[15]

Rearranging Eq.(10) gives the equilibrium net alpha of the fund as

$$\alpha^n = -\bar{s} + \kappa q. \tag{12}$$

This result relaxes the assumption in the Berk and Green model that the expected value of net alpha equals zero by introducing a utility from the non-alpha service. The corresponding fee f^s for the non-alpha service charged by the fund is

$$f^s = -\alpha^n = \bar{s} - \kappa q, \tag{13}$$

where index funds with the same fee f^s have different fund size q potentially because their services have heterogeneous utilities $\bar{s}$ or price-demand elasticities κ to their investors.

We can write the total fund revenues after the fixed cost per investor as:

$$\Pi^s = f^s q - cn = \bar{s}q - \kappa q^2 - cn = \bar{s}q - \kappa q^2 - \frac{c}{w}q. \tag{14}$$

A fund chooses the optimal fund size q^* (or correspondingly the optimal fee for non-alpha services f^{s*}) to maximize Π^s. Taking the F.O.C. of Eq. (14) with respect to the fund size q gives:

$$q^* = \frac{\bar{s} - c/w}{2\kappa}. \tag{15}$$

Substituting the q^* in Eq. (15) into Eq. (14) gives the maximum revenues from non-alpha services after costs as:

$$\Pi^{s*} = \frac{(\bar{s} - c/w)^2}{4\kappa}, \tag{16}$$

and the dollar fee revenues before the fixed cost per fund investor as:

$$F^{s*} = \frac{\bar{s}^2 - (c/w)^2}{4\kappa}, \tag{17}$$

[15]Refer to Dixit and Stiglitz (1977) for more details about the relation between the substitutability of two products and their price-demand elasticities.

which is larger than the revenue from non-alpha services after costs Π^{s*} in Eq. (16). Substituting q^* into Eq. (12) gives the equilibrium net alpha and percentage fee as:

$$\alpha^{n*} = -f^{s*} = -\frac{\bar{s} + c/w}{2}. \tag{18}$$

This equation shows that a fund that provides a better service (with higher $\bar{s}$) has a lower equilibrium net alpha α^{n*} and a higher percentage fee. Moreover, a fund serving wealthier fund investors (with a higher w) has a higher net alpha and charges a lower percentage fee.

Again, we generalize our setting to the case where a fund provides both alpha services (i.e., $\alpha^g(q) > 0$ as in Berk and Green (2004)) and non-alpha services as in Eq. (2). When the total amount of capital q raised by the non-alpha service is sufficient for the active investment, the choice of $q^{\alpha*}$, which is the optimal amount of capital invested actively for generating alpha, is independent of the choice of q^*, as shown in Section A.1.[16] We assume that the provision of alpha service is scarce as in Berk and Green (2004). Under this assumption, the equilibrium fee for alpha services $f^{\alpha*}$ equals the fund gross alpha as in Eq. (7). The optimal fee for the non-alpha services, f^{s*}, is given in Eq.(18), which has a one-to-one mapping with the optimal amount of capital raised for the non-alpha services, q^*. Therefore, the total fee from providing both alpha and non-alpha services, in equilibrium, becomes:

$$f^* = f^{\alpha*} + f^{s*} = \alpha^g(q) + \frac{\bar{s}}{2} + \frac{c}{2}\frac{1}{w}. \tag{19}$$

Eq. (19) enriches Eq. (7) with a new term $\frac{\bar{s}}{2}$, which captures the additional fee extracted by the fund for providing non-alpha services when there is imperfect competition. We can gauge the importance of non-alpha services by regressing the percentage f^* of each fund on its gross alpha and the reciprocal of the average investment amount per fund investor $1/w$. The constant term in this estimation would capture the effect of non-alpha services $\bar{s}$ on the

[16] Alternatively, if a fund is allowed to have two share classes (one for the investors who value the non-alpha services and another for the investors who value only alpha services), the choice of $q^{\alpha*}$ is also independent of the choice of q^{s*}, which is the optimal amount of capital raised by the share class offering the non-alpha services, as shown in Section A.2.

fund percentage fee. Moreover, the coefficient of $1/w$ in Eq. (19) becomes $c/2$, suggesting that our estimate of $\hat{c}$ in Eq. (7) is a lower bound for the fixed cost per client, which depends on the competitiveness of providing non-alpha services.

The product of the percentage fee in Eq. (19) and the fund assets under management, q, gives the fund total fees in dollars as:

$$F = f^* q = n f^* w = V + \frac{\bar{S} + c}{2} n, \tag{20}$$

which gives our first empirical prediction as follows:

Empirical prediction 1: If non-alpha services are important for clients, the revenues from them (i.e., $\frac{\bar{S}+c}{2} n$) should be positive and increasing in the number of clients n.

Rewriting Eq. (20) gives

$$F = V + \frac{\bar{s}}{2} q + \frac{c}{2} n, \tag{21}$$

where n is the total number of fund investors, and V is the fund value added as defined in Eq. (8). Eq. (21) add to Eq. (9) a new term $\frac{\bar{s}}{2} q$, which captures the additional fee revenue in dollars extracted by the fund from investors' utility of non-alpha services. As in the previous case, we can estimate the importance of non-alpha services by regressing the total fund fee revenues, $f^* q$, on the fund value added, V, the total fund assets under management, q, and the total number of investors, n. The coefficient of q would capture the effect of the non-alpha services $\bar{s}$ on the fund fee revenues in dollars. Similarly, the coefficient of n in Eq. (21) becomes $c/2$, suggesting that our estimate of $\hat{c}$ in Eq. (9) is a lower bound of the fixed cost per client, which depends on the competitiveness of providing non-alpha services. Therefore, Eqs. (19) and (21) together give our second prediction as below:

Empirical prediction 2: If non-alpha services are important, the estimated fixed cost per client $\hat{c}$ should be statistically significant and positive in the regressions of fund fees in dollars and percentage terms.

2.3 A Model with Charlatans and Investor Learning

In our static model, we assume that fund investors are willing to pay a fee for non-alpha services if they believe these services have positive utility. However, our model does not distinguish whether clients perceive advisors' services as valuable only before experiencing them or continue to value them positively over the long term. This distinction is essential because clients might need time to evaluate the utility they derive from non-alpha services. For example, a client can start working with a financial advisor to receive assistance with financial planning. Over time, the client can determine if the advisor delivers on this need and if the service received is valuable.

In this section, we extend our model to investigate the dynamics of the client-advisor relationship and to allow clients to gradually learn about the quality of a financial advisor's service over time. This extension provides testable predictions separately for skilled financial advisors, who provide valuable services to their clients, and charlatans, who fail to deliver valuable services because of their lack of skill.

A financial advisor provides investors i a service with an expected payoff of μ_j in each period t. The payoff depends on the advisor's type $j \in \{s, c\}$ (s for a skilled financial advisor and c for a charlatan). In this subsection, we focus on a setting with one representative investor, and omit the subscript i for brevity. The expected payoff equals $\mu_s > 0$ if the financial advisor is skilled, and $\mu_c = 0$ if she is a charlatan. The fraction of skilled financial advisors in the economy is λ. At the beginning of each period $t \in \{0, 1, 2, 3...\}$, the investor chooses whether to continue using the advisor's service. If he continues to use the service, he chooses the investment amount w_t and observes a signal η_t at the end of period t about the quality of the service as

$$\eta_t \equiv \mu_j + \epsilon_t, \tag{22}$$

where the noise of this signal ϵ_t is normally distributed with a mean of zero and volatility of δ_ϵ^2, and is independent over time.

At the beginning of each period t, the investor observes all the signals in the past t

periods $\{\eta_0, ..., \eta_{t-1}\}$ with an average value of

$$\bar{\eta_t} \equiv \mu_j + \frac{\sum_{s=0}^{t-1} \epsilon_s}{t} \sim N(\mu_j, \frac{\delta_\epsilon^2}{t}), \tag{23}$$

which follows a normal distribution with a mean of μ_j and a standard deviation of $\frac{\delta_\epsilon^2}{t}$. We denote the density function of observing an average signal of $\bar{\eta_t}$ given the financial advisor's type j as $\phi_j(\bar{\eta_t})$. The type of the financial advisor will be gradually revealed by $\bar{\eta_t}$ as t increases since its variance $\frac{\delta_\epsilon^2}{t}$ decreases with an increase in t. That is, $\bar{\eta_t}$ becomes a more precise signal of the advisor's skill μ_j over time.

Using the density functions of observing an average signal of $\bar{\eta_t}$ for both a skilled advisor and a charlatan (i.e., $\phi_s(\bar{\eta_t})$ and $\phi_c(\bar{\eta_t})$) together with the unconditional fraction of skilled advisors λ, the probability that a financial advisor with an average signal $\bar{\eta_t}$ in the past t periods is skilled can be calculated as

$$\pi_s(\bar{\eta_t}) \equiv \frac{\lambda \phi_s(\bar{\eta_t})}{\lambda \phi_s(\bar{\eta_t}) + (1-\lambda)\phi_c(\bar{\eta_t})}, \tag{24}$$

which has a value of λ at time $t = 0$. Note that $\pi_s(\bar{\eta_t})$ is a monotonically increasing function of $\bar{\eta_t}$ because $\phi_s(\bar{\eta_t})/\phi_c(\bar{\eta_t})$ is strictly increasing in $\bar{\eta_t}$ for each t as proven in Berk and Van Binsbergen (2022).

We assume that the investor has a quadratic utility over the expected payoff from the service after a positive fee $f < \mu_s \lambda$:[17]

$$S_t = U((\mu_s I_s - f)w_t) = (\mu_s \pi_s(\bar{\eta_t}) - f)w_t - \frac{1}{2}(Var(\mu_s I_s) + \gamma)w_t^2, \tag{25}$$

where I_s is a dummy variable which equals one if the advisor is skilled, with probability $\pi_s(\bar{\eta_t})$, and zero otherwise. We use the variance of the product $Var(\mu_s I_s)$ for the penalty of the uncertainty in the advisor's type instead of $Var(I_s)$ because it matters more if the difference in the payoffs of a skilled advisor and a charlatan μ_s is larger. The parameter $\gamma > 0$

[17] Since an equilibrium fee depends on the competitiveness of providing a specific service, which varies across different services, we assume an exogenous fee f here to keep our model general.

can be interpreted as a basic level of uncertainty between an investor and a financial advisor that no amount of data can resolve. This parameter ensures that the optimal investment amount w_t^* is finite even as t goes to infinity.

Taking the first order derivative of Eq. (25) with respect to w_t gives the optimal investment amount as

$$w^*(\bar{\eta}_t) = \frac{\mu_s \pi_s(\bar{\eta}_t) - f}{Var(\mu_s I_s) + \gamma} = \frac{\mu_s \pi_s(\bar{\eta}_t) - f}{\mu_s^2 \pi_s(\bar{\eta}_t)(1 - \pi_s(\bar{\eta}_t)) + \gamma}, \tag{26}$$

which starts with an initial investment amount $w_0 = \frac{\mu_s \lambda - f}{\mu_s^2 \lambda(1-\lambda) + \gamma}$ for the first period $t = 0$. We assume that the investor chooses to exit (i.e., invests an amount $w(\bar{\eta}_t) = 0$ in period t) if this optimal investment amount $w^*(\bar{\eta}_t)$ is smaller than an exiting threshold $\underline{w} \in (0, w_0)$.[18] Since $w^*(\bar{\eta}_t)$ is a monotonically increasing function of $\pi_s(\bar{\eta}_t)$,[19] this exiting condition is equivalent to the fraction of skilled advisors $\pi_s(\bar{\eta}_t)$ being smaller than an exiting threshold $\underline{\pi} \in (0, \lambda)$.

Furthermore, since the fraction of skilled advisors $\pi_s(\bar{\eta}_t)$ is also a monotonically increasing function of $\bar{\eta}_t$ for each t as proven in Eq. (24), this exiting condition is further equivalent to $\bar{\eta}_t$ being smaller than a corresponding exiting threshold $\bar{\eta}_t^{exit} \in (0, \frac{\mu_s}{2})$ for each t. We denote the exit dummy as $D(\bar{\eta}_t)^{exit}$, which equals one if $\bar{\eta}_t < \bar{\eta}_t^{exit}$ and zero otherwise. Since a charlatan is more likely to have a lower signal $\bar{\eta}_t$ as shown in Eq. (23), we have

$$E_s(D(\bar{\eta}_t)^{exit}) < E_c(D(\bar{\eta}_t)^{exit}), \tag{27}$$

which gives our third prediction below:

Empirical prediction 3: Client exit rate is lower for a skilled advisor than for a charlatan.

[18] For simplicity, we start with the assumption that the exiting decision is independent across periods. Later in this section, we will provide a version of the model where the decision to exit in the current period depends on the decisions to exit in previous periods. This version of the model can only be solved numerically.

[19] It holds under the reasonable assumption that the fee charged is smaller than the expected payoff from a skilled advisor ($f < \mu_s$), which can be proved by analyzing the first-order condition of Eq. (26) with respect to $\pi_s(\bar{\eta}_t)$.

With the choice to exit, the expected investment amount conditional on the advisor's investment type j equals

$$E_j(w(\bar{\eta_t})) = E_j((1 - D(\bar{\eta_t})^{exit})w^*(\bar{\eta_t})) = \int_{\bar{\eta_t}^{exit}}^{\infty} \frac{\mu_s \pi_s(\bar{\eta_t}) - f}{\mu_s^2 \pi_s(\bar{\eta_t})(1 - \pi_s(\bar{\eta_t})) + \gamma} \phi_j(\bar{\eta_t}) d\bar{\eta_t}. \quad (28)$$

As t goes to infinity, the average signal $\bar{\eta_t}$ converges to μ_s for a skilled advisor (i.e., the probability $\phi_s(\mu_s)d\bar{\eta_t}$ converges to 100%), whereas the average signal $\bar{\eta_t}$ converges to $\mu_c = 0$ for a charlatan (i.e., the probability $\phi_c(0)d\bar{\eta_t}$ converges to 100%). From an investor's perspective, the probability of getting a skilled advisor $\pi_s(\mu_s)$ after observing a signal $\bar{\eta_t} = \mu_s$ converges to one as t goes to infinity, and the probability of getting a skilled advisor $\pi_s(0)$ after observing a signal $\bar{\eta_t} = 0$ converges to zero. Therefore, under the condition that $0 < \bar{\eta_t}^{exit} < \frac{\mu_s}{2}$, the expected investment amount from the client of a skilled advisor $E_s(w(\bar{\eta_t}))$ converges to $\frac{\mu_s - f}{\gamma}$. In contrast, the expected optimal investment amount for the client of a charlatan $E_s(w^*(\bar{\eta_t}))$ converges to zero because the probability of getting an average signal $\bar{\eta_t} > \bar{\eta_t}^{exit}$ converges to zero. Since the initial investment amount $w_0 = \frac{\mu_s \lambda - f}{\mu_s^2 \lambda(1-\lambda) + \gamma}$ is larger than zero and smaller than $\frac{\mu_s - f}{\gamma}$, our fourth prediction follows

Empirical prediction 4: The client average investment amount increases with the length of the advisor-client relationship for a skilled advisor, whereas it decreases for a charlatan.

Since a financial advisor cares about the expected total revenues from investors joining in different periods, we further investigate the expected total assets under management and revenues with overlapping generations of investors. For each period τ, we assume that there are T generations of investors entering before τ, and there is a continuum of $n_{\tau-t}$ investors entering at the beginning of each generation $\tau - t$. The expected total assets under management q_τ of a financial advisor with type j in period τ can be calculated as the total investment amount of all non-exiting investors from the past T generations as below

$$E_j(q_\tau) = E_j \sum_{t=0}^{T} n_{\tau-t} w^*(\bar{\eta}_t)(1 - D(\bar{\eta}_t)^{exit}) = E_j \sum_{t=0}^{T} q_{\tau,t}, \tag{29}$$

where we further define the total assets under management from generation t as $q_{\tau,t} = n_{\tau-t} w^*(\bar{\eta}_t)(1 - D(\bar{\eta}_t)^{exit})$. If the number of investors entering in each generation is the same across generations (i.e., $n_{\tau-t} = n$ for all t), the expected total assets under management from generation t, conditional on the advisor's investment type j, is

$$E_j(q_{\tau,t}) = nE_j((1 - D(\bar{\eta}_t)^{exit})w^*(\bar{\eta}_t)) = n \int_{\bar{\eta}_t{}^{exit}}^{\infty} \frac{\mu_s \pi_s(\bar{\eta}_t) - f}{\mu_s^2 \pi_s(\bar{\eta}_t)(1 - \pi_s(\bar{\eta}_t)) + \gamma} \phi_j(\bar{\eta}_t) d\bar{\eta}_t, \tag{30}$$

which is n times the expected investment amount of each investor $E_j(w(\bar{\eta}_t))$ in Eq. (28). Therefore, our fifth prediction is:

Empirical prediction 5: The total assets under management from each cohort of clients increase with the length of the advisor-client relationship for a skilled advisor, whereas it decreases for a charlatan.

The data shows that once an investor chooses to exit in period t, he stops investing with this advisor in all the following periods. In the rest of this section, we present the results for the extended model, in which an investor's exiting/survival in each period depends on their exiting choices in previous periods. We then compare these model predictions to the data.

We denote the surviving status of the investor until period t by dummy $I_t^{survive}$, which equals one if the investor has not chosen to exit until period t, and it equals zero otherwise. We let $I_t^{survive}$ depend on the entire history of an investor's signal η_u for all $u \leqslant t$. If we define $D(\bar{\eta}_t)^{survive} \equiv 1 - D(\bar{\eta}_t)^{exit}$, given the advisor's type j, the probability that the survival dummy $I_t^{survive} = 1$ equals the product of the probabilities that $D(\bar{\eta}_u)^{survive} = 1$ for all $u \leqslant t$:

$$E_j(I_t^{survive}) = \prod_{u=1}^{t} E_j \left(D(\bar{\eta}_u)^{survive} \middle| \prod_{v=0}^{u-1} D(\bar{\eta}_v)^{survive} = 1 \right). \tag{31}$$

Since the average signal $\bar{\eta}_u = \frac{\bar{\eta}_{u-1}(u-1)+\eta_{u-1}}{u}$ depends on the average signals $\bar{\eta}_v$ with $v \leqslant u$ in the previous periods, the probability of surviving in period u conditional on surviving during all previous periods $v \leqslant u$ equals $E_j\left(D(\bar{\eta}_u)^{survive}\middle| \prod_{v=0}^{u-1} D(\bar{\eta}_v)^{survive} = 1\right)$.

The expected investment amount, conditional on the investor not having chosen to exit, is

$$E_j(w^*(\bar{\eta}_t)I_t^{survive}|I_t^{survive} = 1) = E_j\left(\frac{\mu_s\pi_s(\bar{\eta}_t) - f}{\mu_s^2\pi_s(\bar{\eta}_t)(1-\pi_s(\bar{\eta}_t)) + \gamma} I_t^{survive} \middle| I_t^{survive} = 1\right), \quad (32)$$

and the financial advisor's expected revenue from this investor in period t is

$$E_j(\Pi_t) = E_j(w^*(\bar{\eta}_t)fI_t^{survive}) = E_j\left(\frac{(\mu_s\pi_s(\bar{\eta}_t) - f)f}{\mu_s^2\pi_s(\bar{\eta}_t)(1-\pi_s(\bar{\eta}_t)) + \gamma} I_t^{survive}\right). \quad (33)$$

In our numerical analysis, we choose the expected payoff of a skilled advisor as five percent per year (i.e., $\mu_s = 0.05$), the fraction of skilled advisors as $\lambda = 0.4$, the fee as $f = \frac{\mu_s\lambda}{2}$, and a basic level of uncertainty $\gamma = \frac{\mu_s}{2}$. Therefore, we have an initial investment amount $w_0 = \frac{\mu_s\lambda - f}{\mu_s^2\lambda(1-\lambda)+\gamma} = 0.39$. Considering the average initial investment in the data is C\$ 43,857, we define the unit of wealth w as C\$ 100,000 per unit. We further choose an exiting threshold $\underline{w} = 0.1$, the standard deviation of the noise in the signal as $\delta_\epsilon = 0.1$, and the total number of generations of investors as $T = 15$ since we have 15 years of data in total. As in the data, we set the average number of new investors per year as $n = 10$.

We plot the average survival rates in Eq. (31), the average investment amount of surviving clients in Eq. (32), and the financial advisor's expected revenues in Eq. (33) across advisor-client relationship tenure t, separately for a skilled advisor and a charlatan.

With overlapping generations of investors as in Eq.(29), the expected total assets under management q_τ of a financial advisor with type j in period τ is calculated as the total investment amount of all the surviving investors in the past T generations as below

$$E_j(q_\tau) = E_j \sum_{t=0}^{T} n_{\tau-t} w^*(\bar{\eta}_t) I_t^{survive}. \quad (34)$$

As our model predicts in Figure 4, the total AUM from each client generation increases with the client-advisor tenure t for a skilled advisor and decreases for a charlatan. Using the Canadian advisor-client data, we will investigate this relationship for all the advisors in our sample and, specifically, for financial advisors with large and small amounts of assets under management.

The expected fee revenue is the product of q_τ and f as

$$E_j(q_\tau f) = E_j \sum_{t=0}^{T} n_{\tau-t}\Pi_t = E_j \sum_{t=0}^{T} n_{\tau-t} w^*(\bar{\eta}_t) I_t^{survive} f. \tag{35}$$

As shown in Eq. (34) and (35), the assets under management and profitability of a financial advisor depends on the total number of new clients entering each period ($n_{\tau-t}$), the average investment amount of each client ($w^*(\bar{\eta}_t)$), and the probability of surviving ($I_t^{survive}$). To investigate whether, in the data, the largest (most profitable) financial advisors are skilled or charlatans, we decompose a financial advisor's total assets under management q_τ into these three components according to Eq. (34) and investigate their dynamics across the client-advisor relationship tenure.

It is worth noting that the total number of clients using the financial advisor's service in each period τ depends on both the number of clients entering in each generation $n_{\tau-t}$ and the survival rate $I_t^{survive}$ as

$$E_j(N_\tau) = E_j \sum_{t=0}^{T} n_{\tau-t} I_t^{survive}. \tag{36}$$

3 Data And Descriptive Statistics

To test the predictions of our model, we use administrative records provided by two (independent) Canadian Mutual Fund Dealers. These firms advise just under C$ 20 billion of assets, or roughly 5% of assets under management by MFDA-registered advisors. Financial institutions in the Mutual Fund Dealer Association (MFDA) represent a primary component of retail investment in Canada. Their advisors are licensed to distribute only mutual funds.[20] The dataset contains transactions and demographic information for clients and advisors from 1999 to 2012.[21] We can access the last available "Know Your Client" form. This form collects information on the client's risk tolerance, investment horizon, financial knowledge, wealth, income, and occupation.

For the 488,263 clients in our sample, the average age is 49.2 years. Roughly 50% of clients are women and have an average tenure with their advisors of 4.6 years. This average tenure should be smaller than the actual average tenure of clients because of the data cut of our sample. The average account has a value of C$ 55,3000 invested in 4.7 different mutual funds with a share of risky assets equal to 73.3%. Over 80% of clients have a net worth above C$ 100,000, and roughly 70% have a salary below C$ 70,000. Among these investors, the most common risk-tolerance and financial knowledge categories are "moderate." Roughly 90% of the accounts have an investment horizon of six or more years. Over one-quarter of investors own a brokerage account ("General" or "Open"), while 85% own retirement-related accounts (either "RRSP" or "RRIF"). Fewer investors own college saving accounts or "RESP" (9%) and tax-free accounts (4%).

Three thousand two hundred seventy-six advisors follow these clients. Their average age is 48, and 27% of them are women. Advisors have personal portfolios that are, on average, larger (C$ 112,100), invested in more funds (8.7), and riskier (80.7% risky share). The average advisor serves 110 clients with assets under management of C$ 6.2 Million.

The administrative data allows us to precisely reconstruct all the fees that clients pay from the management expense ratio to the deferred sale charge (for back-end load funds), from the front-end load to the administrative fees.[22] Nonetheless, we do not observe the commissions (kickbacks) the advisors receive from the mutual fund firm. Therefore, we use the total fee revenues clients pay to funds and advisors for our analyses at both the fund

[20] As of December 2022, 85 MFDA members employed roughly 78,000 advisors and managed accounts worth C$635B, or nearly 50% of Canadian retail investment assets.

[21] These two firms are the same as those examined in Linnainmaa, Melzer, and Previtero (2021).

[22] We also include the fee for the f-class funds and subtract all the rebates that a client receives.

level and advisor level.

4 Fund-level Analyses

In this section, we investigate the importance of non-alpha services to broker-sold mutual funds' revenues using portfolio sorting and regression analyses. In particular, we test *Empirical predictions 1 and 2* and estimate the fixed cost per client using the regression analyses suggested by our model.

4.1 The Relationship between Dollar Fees and Non-alpha Services

We use two empirical proxies for the level of non-alpha services to study their importance for broker-sold mutual funds' revenues, as outlined in *Empirical prediction 1.* Since mutual funds in our sample primarily provide customized services through financial advisors, we use the total number of financial advisors selling each fund as our first proxy. Following the prediction in Eq. (20), we use the number of clients investing in each fund as our second proxy for the total volume of non-alpha services provided.

We sort funds into size quintiles by their asset under management (AUM) and report the results in Table 2. While percentage fees are similar across fund size quintiles, the dispersion in AUM is the main driver of variation in fee revenues in dollars. For instance, larger funds in quintile five employ an average of 166 financial advisors, significantly more than smaller funds in lower quintiles. In contrast, measures of value added based on CAPM and three-factor models (FF3) are lowest for the largest funds, indicating that non-alpha services, rather than alpha services, are the key driver of broker-sold funds' fee revenues.

We also observe that the number of clients increases with fund size, consistent with *Empirical Prediction 1*, while the average investment per client decreases. Thus, larger funds employ significantly more financial advisors to serve more clients with smaller investments.

Regression results in Table 3 provide further evidence on the importance of non-alpha services. Having one additional advisor selling the fund increases dollar fees by C$1,371, while acquiring one additional client raises revenues by C$201. Following the prediction in Eq. (21), we include fund size as an additional explanatory variable. According to our model, the coefficient for the number of clients is positive and statistically significant, highlighting the importance of the fixed cost of providing non-alpha services to each client, even after accounting for the total assets the fund manages.

4.2 The Relationship between Percentage Fees and Average Investment Amount per Client

Next, we test the relationship between funds' total percentage fees and average investment amounts per client (AUM/client) as predicted in Eq. (4), (7), and (21). If the fixed cost c from serving each client is positive, we expect a fund's total percentage fee to decrease with an increase in the AUM/client of that fund. In particular, we sort all fund share classes in our sample into quintiles based on their average investment amounts per client every month, where quintile 1 is for small clients and quintile 5 is for large clients.

As reported in Panel A of Table 4, the percentage fee decreases monotonically with an increase in AUM/client from quintile one to five. The fee difference between quintiles one and five is 0.35% per year. To further show that this fee difference is not caused by the fee difference between small and large funds, we do a double sorting analysis first by fund size and then by AUM/client and report the results in Panel B of Table 4. In particular, we first sort fund share classes into quintiles by fund size, measured by the total investment amount of all the clients in our sample into that fund share class. Quintile one is for small funds, and quintile five is for large funds. For funds within each fund size quintile, we sort them into quintiles based on their average investment amounts per client. As reported in Panel B of Table 4, the fee differences are between 0.32% and 0.43% per year for all fund size quintiles, and they are all significant at the 1% significance level. Moreover, the average total investment amount (fund size) of funds serving small clients (in client's average investment amount quintile 1) is 1,301,984 dollars as reported in Panel A of Table 5, which is even larger than the 891,757 dollars for funds serving large clients (in client's average investment amount quintile 5), indicating that the lower fee of larger funds does not drive our finding.

We further investigate this fee difference by fund categories. Table 6 shows that our finding holds for all fund categories in our sample, including equity funds, bond funds, balanced funds, money-market funds, and alternative funds. The fee differences between quintiles 1 and 5 are as large as 0.45% for equity funds and 0.62% and 1.40% for money-market and alternative funds, respectively. This difference is smaller for bond and balanced funds because financial advisors are less likely to recommend them to clients.

According to Eq. (7), the fee difference is either from the gross alpha generated by the fund α^g or the cost of servicing each client c. To check whether the difference in gross alpha generates this fee difference, we calculate the average gross returns, CAPM alphas, and Fama-French three-factor alphas of equity funds by AUM/client quintiles. To adjust for the market exposure of funds investing globally, we also include the returns of the MSCI world index and the Canadian market factor, size factor, and value factor when calculating the CAPM alphas and Fama-French three-factor alphas. Table 7 shows that funds managing the money of small clients (quintile 1) underperform funds serving large clients (quintile 5) by 1.67% per year before fees according to CAPM alphas, which is statistically significant at 10% significance level. This number stays positive but becomes statistically insignificant for gross returns and Fama-French 3-factor alpha. This result indicates that higher abnormal returns do not justify the higher percentage fees charged by funds serving small clients. Moreover, Table 7 shows that net alphas are more negative for funds serving smaller clients. This evidence is consistent with our model prediction that funds providing more non-alpha services have more negative net alphas in equilibrium.

4.3 Estimation of Fixed Cost per Client and Fee Revenues from Non-Alpha Services versus Alpha Services

Next, we estimate the fixed cost per client c and fee revenues from value-added of non-alpha services versus alpha services using the regression analyses in Eq. (19) and (21) suggested in our model.

Table 8 reports the regression results of Eq. (21) in Panel A and Eq. (19) in Panel B. Our estimate of fixed cost of serving each client is 17.91 dollars using fee revenues in dollar as in Eq. (21) and 5.71 dollars using percentage fees as in Eq. (19). A small number of large funds mainly drives the former estimate using fee revenues in dollars, whereas the latter estimate using percentage fees is primarily driven by a large number of relatively small funds. Since the assets of the majority of investors are managed by a smaller number of large funds in the mutual fund industry, the former estimate of 17.91 dollars is a more appropriate estimate for the fixed cost of serving an average client in this industry. The latter estimate of 5.71 dollars is an estimate of the fixed cost of serving each client for an average fund in the industry. As discussed in Eq. (21) and (19), these two estimates are conservative since the provision of non-alpha services is not perfectly competitive.

To further investigate the variation of the fixed cost of serving each client across fund size, we sort funds into fund size quintiles based on the total investment amount of all the clients in our sample into that fund share class every month, and do the same regression analyses for each fund size quintile separately. As reported in settings (2) - (6) and (8) - (12), the estimate of the fixed cost of serving each client increases monotonically with the total investment amount, which is consistent with a greater volume of non-alpha services provided by large funds to each of their client.

Furthermore, the coefficients of VA CAPM and alpha CAPM are economically small, suggesting that the fund alphas have limited explanatory power to account for the variation of fees across funds. The coefficients of fund size in Panel A and the constant terms in Panel B suggest that the fee revenues from the value added of non-alpha services are about 2.33%

to 2.84% of fund TNAs according to our model.

5 Advisor-level Analyses

To better characterize non-alpha services, we investigate the determinants of total client fee revenues at the advisor level. We compute the dollar value of fees as the percentage fee times the dollar value of the asset under management. On average, an advisor can extract C$ 170,355 from all their clients per year.

Table 9 presents the results of regressing total fee revenues in dollars on various explanatory variables. We include in our regressions: i) alpha service-related variables, including the total value added of clients' risky assets based on the CAPM and advisor's investment skill measured by the deciles sorted by the average return of her own investments; ii) measures of the total provision of non-alpha service including the number of plans per client (*N of Plan/Client*) and the total number of clients; iii) advisor demographic information including gender and age; iv) client demographic information including the average level of client financial knowledge, self-claimed risk tolerance, investment horizon, age, salary, and net worth; and v) client portfolio characteristics including the average number of funds invested per client and a value-weighted fraction of risky assets in the portfolio. The number of plans per client (*N of Plan/Client*), the total number of clients, and the average number of funds invested per client are in units, and other variables are standardized to interpret the coefficients better.

We find that variables associated with alpha services either do not explain variation in dollar fee revenues across advisors or have the wrong sign. In contrast, client demographic variables added in column (2) have substantial explanatory power to the dollar fee revenues across advisors. On average, financial advisors serving clients with lower financial knowledge, lower risk tolerance, longer investment horizon, older age, and higher net worth earn more dollar fee revenues, arguably because these clients have a larger demand for financial advisory services. Consistent with higher fee payments for more advisory services, we find that advisors with clients investing in more funds and having a larger fraction of risky shares in their advisory portfolios earn higher dollar fee revenues. More interestingly, the coefficients of these client demographic variables become substantially smaller, mostly insignificant, after including our key measures of clients' demand for non-alpha services — number of plans per client and number of clients — into the regression as reported in column (4). This result suggests that these two measures of clients' demand for non-alpha services capture clients' heterogeneous demands of different types of non-alpha services well, and, as shown in columns (3) and (4), they explain a substantial fraction of the cross-sectional dispersion of financial advisors' fee revenues in dollars.

For comparison, we do a similar regression using fee revenues as a fraction of advisor AUM (in basis points) in Table 10. In this specification, the variables that proxy for non-alpha services and most client-level variables become economically small (around one basis point for a one-standard-deviation change) and statistically less significant, except for the fraction of risky shares in the portfolio. This result suggests that analyzing fees as a fraction of AUM neglects important client-level determinants of the total fee revenues in dollars.

Altogether, this evidence suggests that non-alpha services associated with financial planning are the major determinants of advisor revenues, whereas alpha services are not. These results are robust to various tests, such as controlling for advisor fixed effect (as reported in Appendix Table A1) and advisors' different licenses.

6 Advisor-client Dynamics

Having shown that financial advisors with more clients and a larger number of plans per client earn more revenue in the cross-section, an open question remains whether clients perceive advisors' services as valuable in the long term. To address this question, we compare the advisor-client dynamics in the data with the model predictions with charlatans and investors' learning over time as in Section 2.3.

In particular, the model predicts that a skilled financial advisor who provides a service perceived by investors as valuable in the long term features a low exit rate of their clients (or, equivalently, a long client duration), an investment amount increasing with client tenure, and a larger fraction of total assets under management (AUM) from older clients than new clients. In sharp contrast, a charlatan who provides a service identified gradually by investors as not valuable features a high exit rate of their clients (or, equivalently, a short client duration), an investment amount decreasing with client tenure, and a smaller fraction of total AUM from older clients than new clients.

6.1 Advisor-client Pair Data by Advisor Size and Exiting Year

We first summarize this advisor-client pair data by advisor size and exit year. Table 11 reports the average assets under management, the number of clients per financial advisor, and the client exit rates using data from 1999 to 2013. As reported in the first column of Panel C, the average exit rate of a client is 8.8% per year, which indicates that an average client will stay with the advisor for 11.4 years if the advisor does not quit. After including clients' exits because their advisors exit, the average exit rate of a client is 14.9% per year, indicating an average client-advisor relationship of 6.7 years. This long relationship between the client and advisor is more consistent with the scenario of a skilled financial advisor who provides a service perceived by her clients as valuable for more than ten years than a charlatan who constantly loses her existing clients and looks for new ones. The average exit rate of a financial advisor is 6.1% per year, suggesting that an average advisor runs her business for 16.3 years.

To compare the business models of the most profitable financial advisors with those of the least profitable ones, we sort financial advisors into AUM quintiles based on their total assets under management every year. As shown in the second row of Panel A, the total AUM managed by the largest 20% of financial advisors (i.e., advisors in quintile five) represents 70.7% of the total AUM of the entire industry. Their larger AUM is mostly due to the larger number of clients they serve (282.1 clients per advisor for quintile five) compared to other quintiles. This evidence is consistent with our previous finding that the dollar revenues of broker-sold mutual funds and financial advisors largely depend on the number of clients.

Although the average investment amount per client is higher for large advisors in quintile five (74.4 thousand) than for small advisors in quintile one (18.2 thousand), the dispersion of AUM between quintiles one and five primarily comes from the number of clients.

Note that the larger number of clients in quintile five comes from a larger number of new clients entering each year (26.5 per year) and a lower exit rate of existing clients (7.9% per year). Suppose clients gradually learn about the value of advisors' services over time, as in our model. In that case, the lower client exit rate for quintile five implies that large financial advisors have a larger fraction of skilled advisors than smaller advisors in the other four quintiles. This evidence suggests that clients' voluntary entering and exiting help distinguish skilled advisors from charlatans and channel most investors' money to skilled advisors.

We further look into the relationship between advisors' exiting decisions and the voluntary entering and exiting of clients by categorizing advisors exiting in 2-4, 5-10, and 10+ years separately. As reported in the last three columns of Table 11, we find that advisors who exit earlier have higher client exit rates and fewer new clients entering each year. Moreover, the AUM managed by advisors who stay longer than ten years represents 82.9% of the total AUM. Advisors who gather a large amount of money in a short period and quit within ten years do not manage the lion's share of assets in our sample.

6.2 Dynamic of Survival Rates across Client Tenure

We first calculate the average client survival rate ($I_t^{survive}$ in Eq. (31)) from the data and compare it with our model prediction in Figure 1.

We use the notations in Eq. (36) to illustrate our calculation. For each advisor in each year τ, we calculate the client survival rate $I_t^{survive}$ at each client tenure year t as the total number of clients survived until year τ (i.e., $n_{\tau-t}I_t^{survive}$) divided by the total number of clients entered in the same cohort $n_{\tau-t}$. Then, we calculate the average client survival rate $I_t^{survive}$ for each client tenure year t across all advisor-year observations. To focus on the data that we have information on advisors' entering year and their clients' entering year, we use the data of advisors entering since 2000 (i.e., skip the first year 1999) for this analysis.

We report the average client survival rate ($I_t^{survive}$) across client tenure year (t) in Table 12, for the full sample, by assets under management (AUM) quintiles, and for advisors exiting in 2-4, 5-10, and 10+ years separately. Figure 5 and A1 plot the dynamics of client survival rates by AUM quintiles and by advisors' exit year.

Figure 5 shows that the survival rate is a convex function of client tenure for all five quintiles, indicating larger exit rates for earlier periods. This convexity is consistent with investors' gradual learning of financial advisor types in our model, as shown in Figure 1, where updates of investor beliefs are larger in earlier periods than later periods.

More importantly, clients' survival rates are consistently higher for larger financial advisors at each client tenure. This finding suggests that large advisors are more likely to be skilled, as our model predicted in Figure 1.

Similarly, Figure A1 shows that clients' survival rates are consistently higher for advisors quitting later than those quitting earlier, suggesting that surviving advisors have a larger fraction of skilled advisors providing services perceived by clients as valuable over a relatively long period.

Overall, the empirical evidence on client survival rates suggests that clients' gradual learning over time, together with their voluntary exiting, helps distinguish skilled advisors from charlatans and channel the majority of investors' money to skilled advisors.

6.3 Dynamic Investment Amount and Number of Plans per Client across Client Tenure

Next, we calculate the average new investment flows for each client across client tenure from the data and compare it with our model prediction in Figure 2.

We calculate the new investment flow of each client i in year t as

$$Flow_{i,t} = MV_{i,t} - MV_{i,t-1} * (1 + R_{i,t}) \tag{37}$$

where $MV_{i,t}$ is the total market value of investor i's investments with the financial advisor at the end of year t, and $R_{i,t}$ is the annual return of his investments in year t. Note that if the investor invests in a mutual fund, the investor's return $R_{i,t}$ and market value $MV_{i,t}$ are both after deducting the fees charged by the mutual fund.

As reported in the first column of Table 13, the average investment flow of clients who have not quit is positive for ten years and is larger in earlier years than in later years. This result confirms our model prediction in Figure 2 and is consistent with investors gradually learning the service quality over time.

We further plot the cumulative flows by assets under management (AUM) quintiles in Figure 6, and for advisors exiting in 2-4, 5-10, and 10+ years separately in Figure A2. As shown in Figure 6, clients' investment flows increase more across client tenure for larger financial advisors. According to our model prediction in Figure 2, this result suggests that large advisors have a larger fraction of advisors who are gradually identified by their clients as skilled and providing valuable services.

Consistently, Figure A2 shows that clients' investment flows increase more across client tenure for advisors exiting later than those exiting earlier.

Moreover, we use the average number of plans per client as an alternative measure of clients' usage of non-alpha services. As reported in Figure 7 and Table 14, the results are consistent with our results based on fund flows.

6.4 Dynamics of Assets Under Management across Client Tenure

Lastly, we investigate whether the bulk of financial advisors' total assets under management comes from attracting new clients or keeping old clients. This analysis can reveal if advisor revenues are more consistent with the advisor being perceived by their clients as skilled or a charlatan (see our model's predicted patterns in Figure 4).

In particular, for each advisor-year, we aggregate the total AUM from clients of the same cohort (i.e., with the same tenure). Then, we regress this AUM from each client-cohort-year on the dummy variables of client tenure year between one and ten. The dummy variable of client tenure year X equals one when the client tenure year is X and equals zero otherwise. We use the total AUM from new clients entering each year (i.e., clients with a client tenure of zero) as the benchmark case. Hence, the coefficient of each of these ten dummy variables represents the additional AUM from clients with client tenure year X relative to the AUM of clients with a client tenure of zero. We also control for year-fixed effects to compare the AUM from clients entering different cohort years. Additionally, we control for advisor-fixed effects and advisor tenure-fixed effects to eliminate the common variation across advisors and their length of experience.

As reported in Table 15 and Figure 8, the AUM from different client cohorts is, on average, increasing with client tenure except for the smallest advisors in quintile one. This evidence suggests that financial advisors have more assets (and earn higher revenues) from older clients than newer ones. The business model of most financial advisors is more consistent with being skilled advisors than charlatans (see predictions in Figure 4). Only advisors exiting within 2-4 years or 5-10 years, as reported in the second-last and third-last columns of Table 15, have a decreasing relationship between AUM and client tenure within ten years. These results suggest that investors force out business those advisors perceived as charlatans in a relatively short period.

We further decompose the increase of assets under management (AUM) across client tenure into investment returns and client flows. In practice, we add *AUM from returns* and *AUM from flows* as two additional control variables in the regressions in Table 15. *AUM from returns* is the total increase/decrease in AUM of all clients in each cohort from their investment returns since the first year they enter. *AUM from flows* is the total increase/decrease in AUM of all clients in each cohort from their contributions or withdrawals of capital since the first year they enter, including the last withdrawals of the clients who exit. A complete decomposition into these two components requires each advisor to have a balanced panel data with client tenure ranging from one to 10 years. Therefore, in Table 16, we focus on the advisors with more than ten years of data.

To look into the successful business model in the financial advisory industry, we first investigate this decomposition result for the largest advisors in AUM quintile five, which manage more than 70% of the total AUM in the industry. As reported in Panel A of Figure 9 and columns (4) to (6) in Table 16, the increase in AUM largely remains, especially for earlier years, after adding *AUM from returns* as a control variable. After adding *AUM from flows* as an additional control variable into the regression, the increase in AUM disappears and becomes statistically insignificant from zero. This result suggests that the AUM increases with client tenure largely because clients continue to give the advisor more money over time, consistent with clients noticing the value of services provided by skilled advisors gradually.

Panel A of Figure 10 and columns (1) to (3) in Table 16 report a similar result of this decomposition for all financial advisors. As a robustness check, we also do this decomposition for all financial advisors, including those with less than ten years of data in our sample period. In particular, we add *AUM from returns* and *AUM from flows* as control variables to all regressions in Table 15 and report the results in the Appendix Tables A3 and A4. We also plot the results for AUM quintile five and the full sample in Panel B of Figures 9 and 10. All these robustness checks confirm that investors' flows explain the majority of the increase in AUM across client tenure. The unexplained part becomes slightly larger when we use the unbalanced panel data.

7 Conclusions

Studies of mutual funds traditionally stem from the asset pricing literature and build on the central assumption that investors value only the risk-return trade-off of their investments. Consequently, fund managers' skill and value-added are related to their ability to outperform the market and other passive benchmarks (e.g., Jensen (1968), Berk and Green (2004), Berk and van Binsbergen (2015)). For example, in Berk and Green (2004), the expected fund net alphas should be zero, in equilibrium, if the provision of capital is competitive. In their setting, only funds with positive gross alphas can attract capital and charge a fee to investors.

What happens if, instead, investors value other services and not just the risk-return payoff of their investments? What happens if investors value, for example, financial planning, tax optimization, portfolio customization, or the hand-holding that an advisor can provide? We investigate this possibility by developing and testing a model of non-alpha services. In our model, investors derive utility both from alpha and non-alpha services. In equilibrium, some funds may have negative net alphas and positive assets under management because of the utility their clients derive from non-alpha services.

To better characterize non-alpha services, we investigate the drivers of financial advisors' revenues for roughly 500,000 Canadian clients for 13 years. We find that variables associated with alpha services, such as client alphas and advisor investment skills, do not drive advisor revenues. Conversely, variables related to non-alpha services, such as the number of different investment accounts per client (e.g., retirement or college savings), are important determinants in explaining client fees. Non-alpha services could help shed light on the long-standing puzzle in the mutual fund literature of why negative-net alpha funds persist in the market.

A promising direction for future research is to study the bundling of the fees for alpha and non-alpha services. If clients only learn about the value of non-alpha services from their experience, they might underestimate their value before investing. Consequently, they might be reluctant to pay for these services directly. Evidence from the UK is consistent with this idea. In 2013, the UK banned commissions and kickbacks, forcing advisors to unbundle the fees for alpha and non-alpha services. As a result, many advisors could find enough clients to pay directly for non-alpha services and were forced out of the market.

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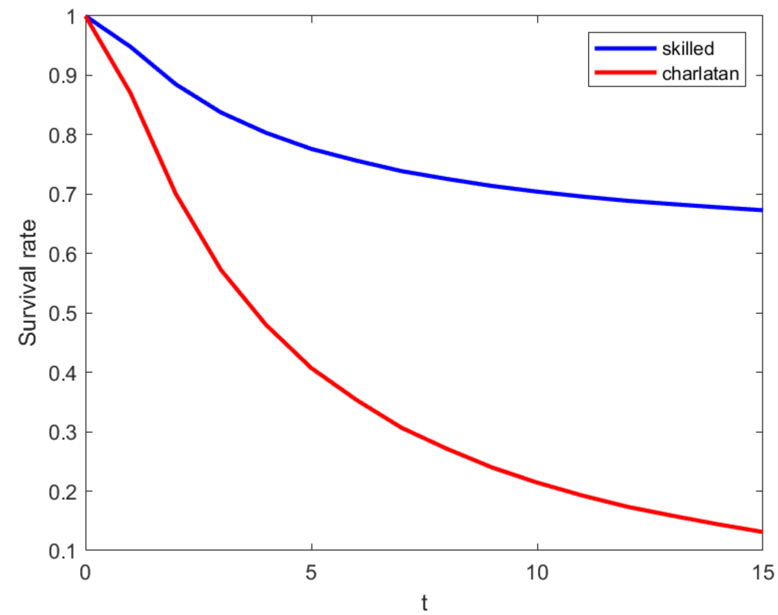

Figure 1: Survival Rate across Client Tenure

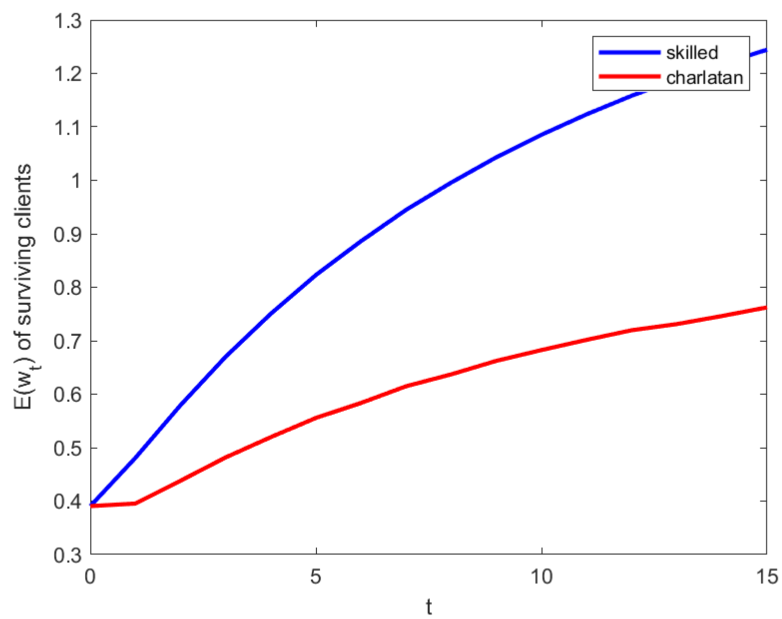

Figure 2: Average Investment Amount of Surviving Clients across Client Tenure

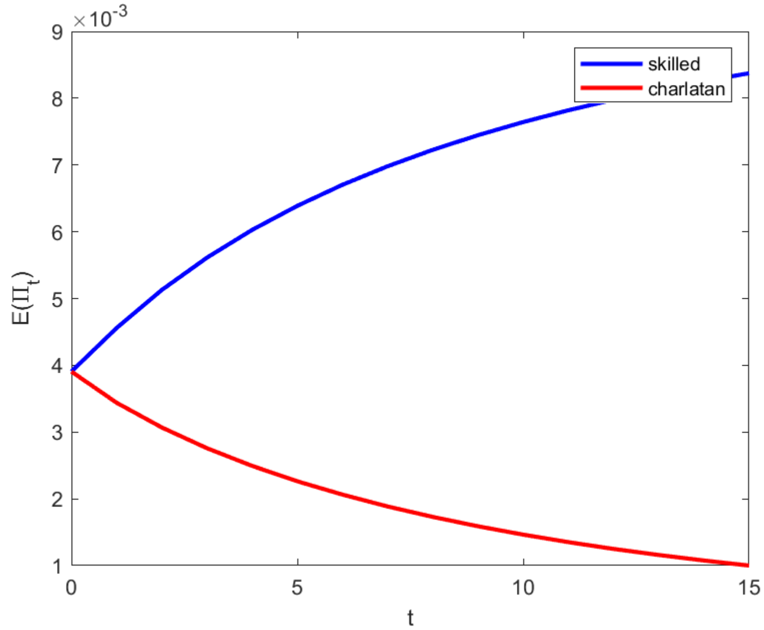

Figure 3: Expected Revenue across Client Tenure

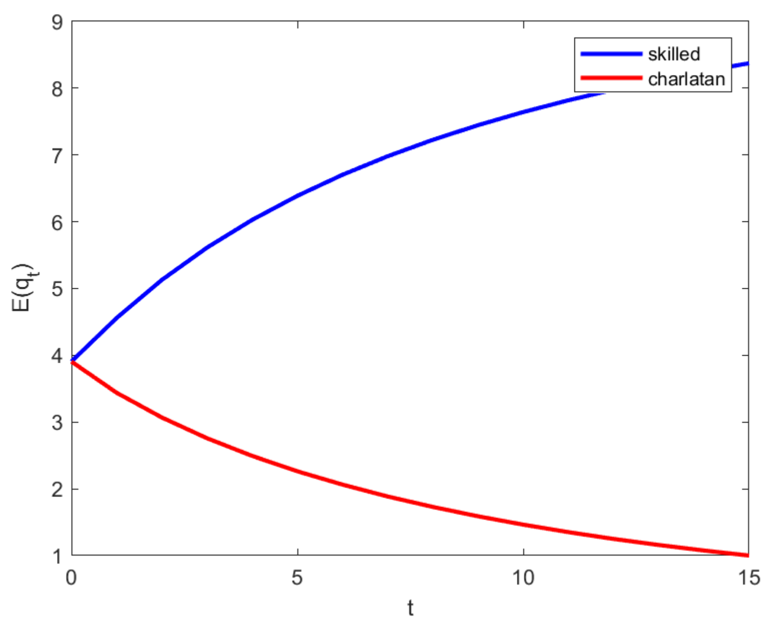

Figure 4: Expected AUM across Client Tenure

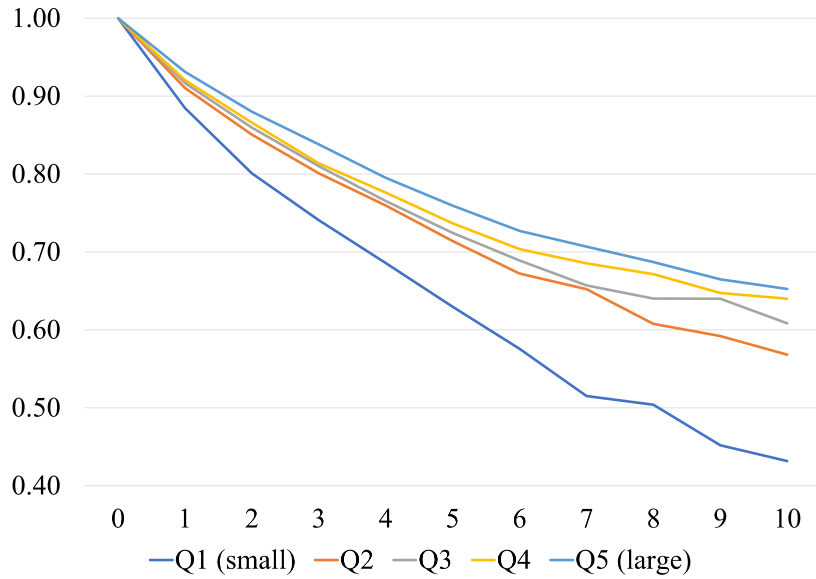

Figure 5: Cumulative Survival Rates across Client Tenure by Financial Advisor Size Quintiles

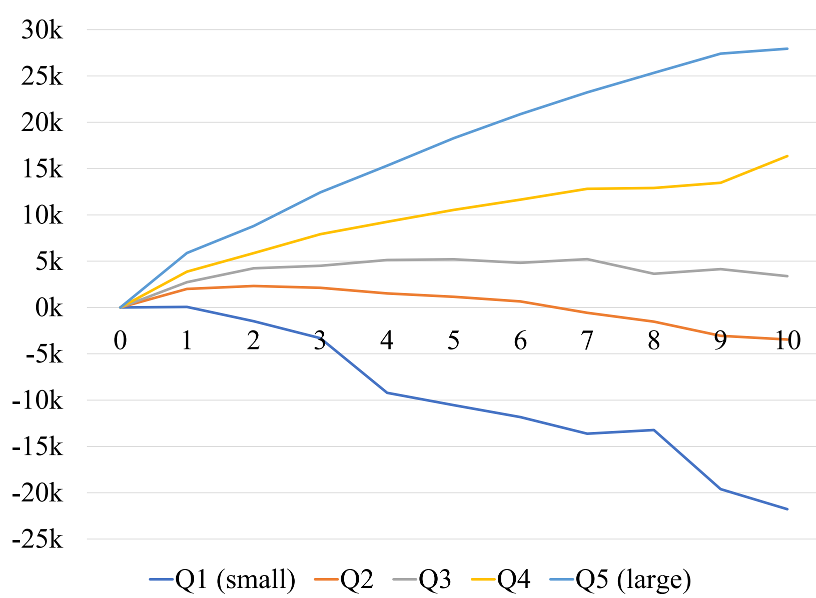

Figure 6: Cumulative Client Investment Flows across Client Tenure by Financial Advisor Size Quintiles

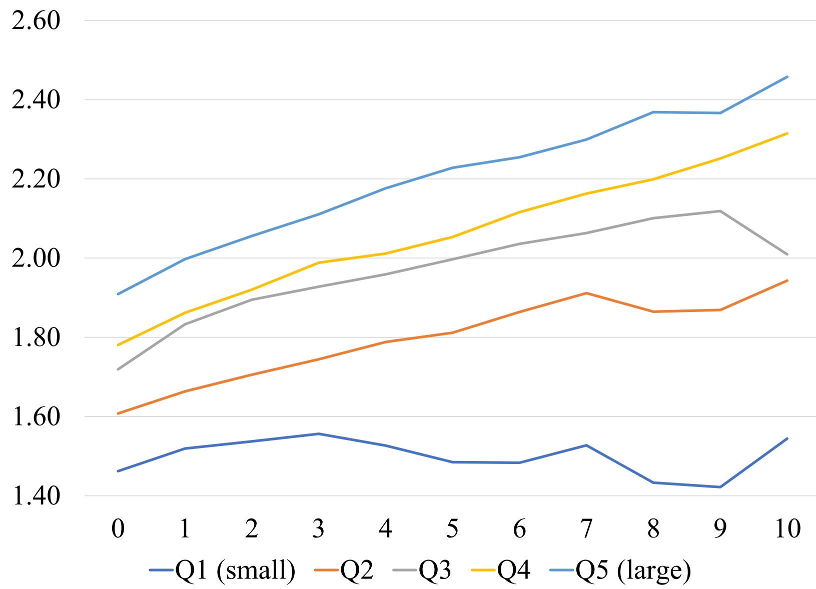

Figure 7: Average Number of Plans per Client across Client Tenure by Advisor Size Quintiles

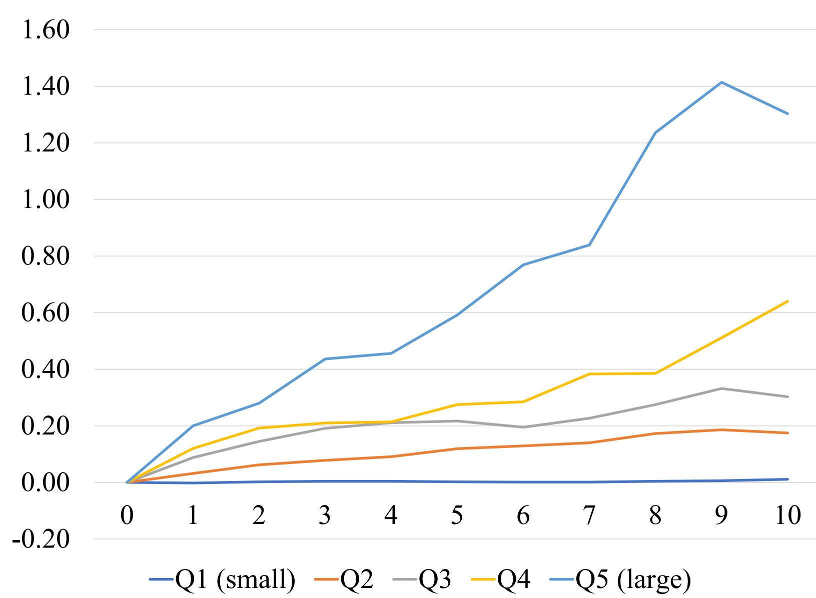

Figure 8: Increase in Assets Under Management (in million C$s) across Client Tenure by Financial Advisor Size Quintiles

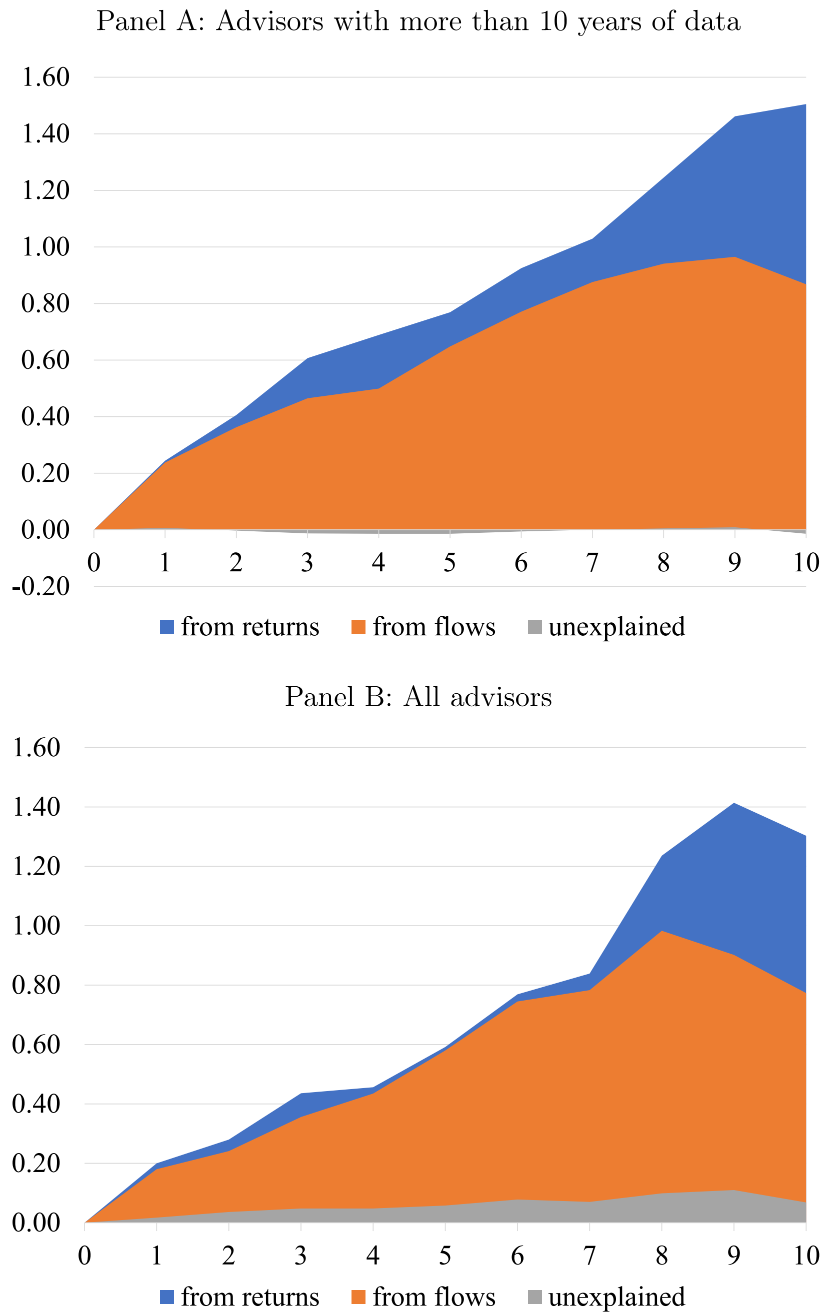

Figure 9: Decomposing the Increase in Assets Under Management (in million C$s) across Client Tenure from Returns and Client Flows for Large Advisors in AUM Quintile 5

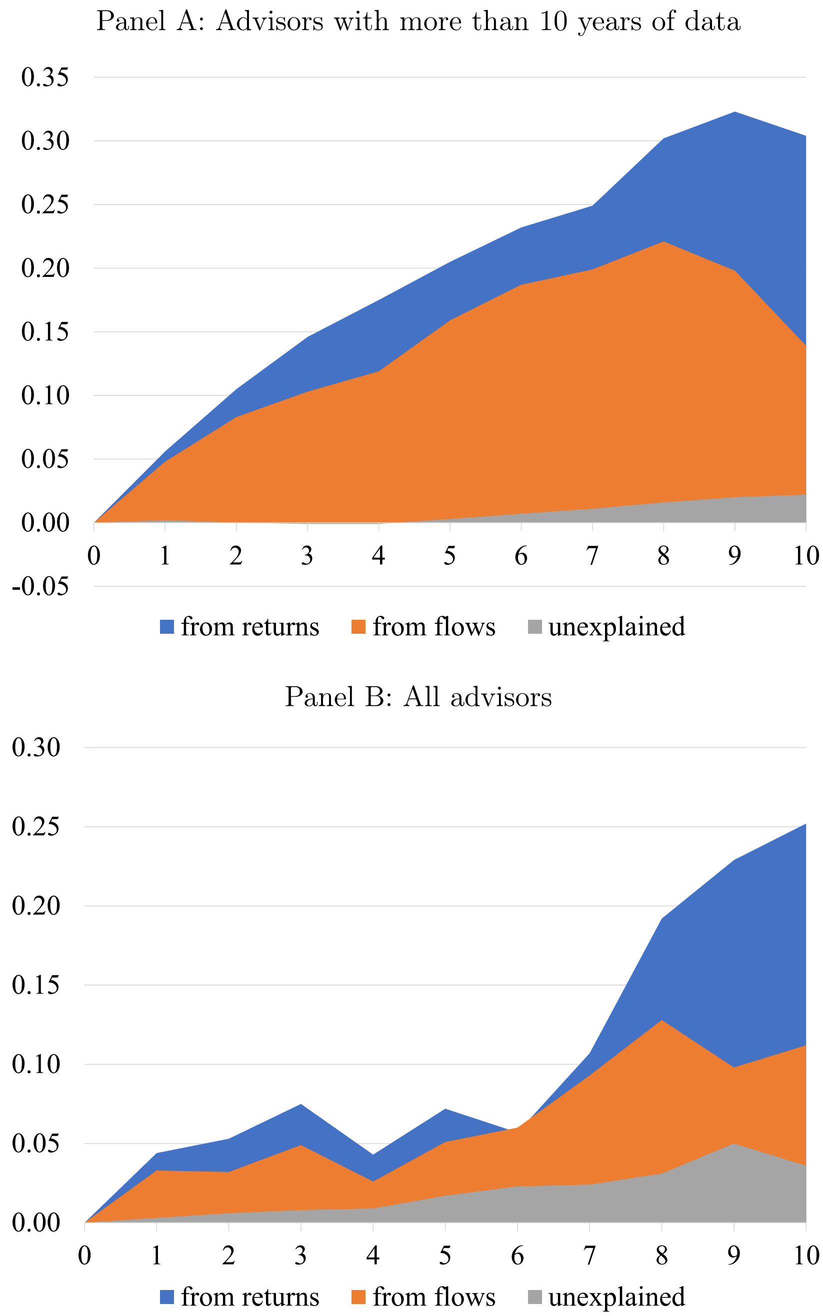

Figure 10: Decomposing the Increase in Assets Under Management (in million C$s) across Client Tenure from Returns and Client Flows for All Advisors

Table 1: Investor and Account Characteristics

This table reports the descriptive statistics for the 488,263 investors (Panel A) and the 3,276 advisors (Panel B) in our sample. The sample period is 1999 to 2013.

Panel A: Investors and Accounts

		Percentile				
	Mean	10	25	50	75	90
Age	49.2	32	40	48	58	67
Female (%)	52.2					
w/ Current Advisor, yrs	4.6	0.9	2.3	4.5	6.9	8.0
Number of plans	2.1	1	1	2	3	4
Number of funds	4.7	1	2	4	6	10
Account value, $K	55.3	2.2	7.3	23.5	63.4	136.0
Portfolio risky share (%)	73.3	46.6	56.9	76.5	96.7	100

Account types	
General	27.6%
Retirement savings or income	84.9%
Education savings	9.4%
Tax-free	4.3%

Risk tolerance	
Very low	4.2%
Low	4.3%
Low to Moderate	8.5%
Moderate	51.5%
Moderate to High	19.7%
High	11.9%

Financial knowledge	
Low	40.3%
Moderate	54.5%
High	5.2%

Net worth	
Under $35k	3.6%
$35–60k	6.2%
$60–100k	9.3%
$100–200k	18.3%
Over $200k	62.7%

Salary	
$30-50k	34.6%
$50-70k	35.4%
$70-100k	17.3%
$100-200k	12.1%
$200-300k	0.2%
Over $300k	0.2%

Time horizon	
1–3 years	2.5%
4–5 years	8.1%
6–9 years	69.7%
10+ years	19.7%

Panel B: Advisors

		Percentile				
	Mean	10	25	50	75	90
Age	48.4	35	41	48	56	62
Female (%)	27.1					
Number of funds	8.7	1	3	6	12	19
Account value, $K	112.1	3.8	14.7	50.9	130.7	269.2
Portfolio risky share (%)	80.7	51.2	70.2	88.1	99.7	100
Number of clients	109.8	4	18	64	154	275
Client assets, $K	6,242.6	94.9	569.4	2,546.8	7,799.2	17,499.5

Table 2: Number of Advisors and Clients, AUM/Client, Value Added, by Fund Size Quintiles

This table reports the number of advisors, number of clients, average investment amount per client (AUM/client), total assets under management (AUM), fees, alphas, and value added by fund size quintile. In this table, all equity funds are sorted into fund size quintiles based on the total AUM reported in Morningstar every month to accounts for assets not covered by our sample as well. The number of advisors, number of clients, average investment amount per client (AUM/client) are reported based on the advisor-client data in our sample. We also report the average annualized alphas and value added based on CAPM and FF3 model in the month after the construction of fund size quintiles. The sample includes 5,982 equity mutual fund share classes in total.

	Fund size quintiles				
	1	2	3	4	5
Num. advisors	7	18	40	72	166
Num. clients	17	54	132	277	1145
AUM/client (in C$)	22,909	18,109	14,537	13,013	11,490
AUM (in million C$)	6.66	29.91	82.29	235.09	1417.62
Fee (in %)	2.45	2.58	2.60	2.59	2.52
Fee (in million C$)	0.16	0.77	2.14	6.09	35.71
Gross CAPM alpha (in %)	-0.11	-0.10	0.11	-0.56	-0.67
Gross FF3 alpha (in %)	-0.31	-0.46	-0.23	-0.54	-0.99
VA capm (in million C$)	0.01	0.09	0.12	-0.14	-0.79
VA ff3 (in million C$)	0.00	0.04	0.02	-0.12	-1.91

Table 3: Regressions of Fee Revenues

This table reports the regression analysis of a fund's total fee revenue in dollar on a measure of non-alpha services and a measure of alpha services as described in *Empirical prediction 1* using all the equity funds in our sample. We use the number of financial advisors selling the fund as a measure of total volume of non-alpha services in columns (1) and (4), and the number of clients as the measure in columns (2) and (5). The value added of the fund, calculated as the product of CAPM alpha and lagged total investment amounts into the fund, as a measure of alpha services. We further use the number of clients and fund size (AUM) as explanatory variables in columns (3) and (6) to estimate the fixed cost of servicing each client as described in Eq. (21). Robust standard errors are clustered by fund. Asterisks denote significance levels: *** 0.01, ** 0.05, and * 0.1.

Dependent Variable: Total Fee Revenue in Dollar						
	(1)	(2)	(3)	(4)	(5)	(6)
N advisors	1,371.5***			1,771.2***		
	(18.60)			(16.23)		
N clients		201.11***	17.68***		216.17***	10.43***
		(24.38)	(3.77)		(18.78)	(2.86)
VA capm	0.0008	0.0018***	0.0004***	0.0009**	0.0014***	0.0005***
	(1.49)	(5.21)	(3.66)	(2.28)	(6.31)	(4.77)
Fund size			0.0234***			0.0241***
			(36.60)			(50.07)
Year-Month F.E.	Yes	Yes	Yes	Yes	Yes	Yes
Fund F.E.	No	No	No	Yes	Yes	Yes
Observations	341,373	341,373	341,373	341,106	341,106	341,106
Adjusted R-squared	0.535	0.834	0.981	0.805	0.916	0.990

Table 4: Total Fee by Average Investment Amount per Client

This table reports the total percentage fee by AUM/client quintiles in Panel A. Every month, we sort all fund share classes in our sample into quintiles based on their average investment amounts per client (AUM/client), where quintile 1 is for small clients and quintile 5 for large clients. Panel B reports the results of double sorting first by fund size then by AUM/client. We first sort fund share classes into quintiles by fund size, which is measured by the total investment amount of all the clients in our sample into that fund share class. Quintile 1 is for small funds and quintile 5 for large funds. For funds within each fund size quintile, we sort them into quintiles based on their AUM/client. Robust standard errors are clustered by fund. All total percentage fees reported are equally weighted across fund share classes. Asterisks denote significance levels: *** 0.01, ** 0.05, and * 0.1.

Panel A: Single sorting by AUM/client (average investment amount per client)							
	AUM/client quintiles						
	1 small client	2	3	4	5 large client	(5-1)	t stat.
Total Fee (in %)	2.72	2.57	2.53	2.49	2.37	-0.35***	-19.22
Panel B: Double sorting by fund size and by AUM/client							
Fund size quintiles							
1 small	2.75	2.61	2.58	2.54	2.42	-0.32***	-10.31
2	2.75	2.64	2.58	2.50	2.38	-0.37***	-11.56
3	2.75	2.63	2.55	2.54	2.32	-0.43***	-13.72
4	2.73	2.61	2.55	2.49	2.35	-0.39***	-11.45
5 large	2.65	2.45	2.38	2.39	2.33	-0.32***	-9.52

Table 5: Average Investment Amount per Client, Number of Clients, and Total Investment Amount

This table reports the average investment amount per client (AUM/client), total number of clients, and total investment amount per fund share class (fund size) by AUM/client quintiles in Panel A. Every month, we sort all fund share classes in our sample into quintiles based on their average investment amounts per client (AUM/client), where quintile 1 is for small clients and quintile 5 for large clients. Panel B reports the total investment amount for double sorting first by fund size then by AUM/client. We first sort fund share classes into quintiles by fund size, which is measured by the total investment amount of all the clients in our sample into that fund share class. Quintile 1 is for small funds, and quintile 5 is for large funds. For funds within each fund size quintile, we sort them into quintiles based on their AUM/client. Robust standard errors are clustered by fund. All numbers reported are equally weighted across fund share classes. All investment amounts are reported in dollars. Asterisks denote significance levels: *** 0.01, ** 0.05, and * 0.1.

Panel A: Single sorting by AUM/client (average investment amount per client)					
	AUM/client quintiles				
	1 small client	2	3	4	5 large client
AUM/client (in C$)	4,910	9,915	15,645	26,193	95,189
Number of clients	276	304	198	77	18
Total investment amount (in C$)	1,301,984	2,746,552	2,455,383	1,375,921	891,757
Panel B: Double sorting by fund size and by AUM/client					
Variable: Total investment amount (in C$)					
Fund size quintiles					
1 small	25,745	22,920	22,617	25,643	33,977
2	84,446	84,834	84,122	83,726	87,552
3	234,925	232,347	233,804	232,946	233,964
4	745,284	737,158	736,495	721,795	695,280
5 large	5,079,659	9,127,475	10,500,000	8,292,523	5,545,934

Table 6: Total Fee by Average Investment Amount per Client (by Fund Category)

This table reports the total percentage fee by AUM/client quintiles (quintile 1 for small clients and quintile 5 for large clients) by fund categories. This sample includes 18,509 mutual fund share classes in total. Robust standard errors are clustered by the fund. Asterisks denote significance levels: *** 0.01, ** 0.05, and * 0.1.

Total Fee (in %)	AUM/client quintiles						
Fund Category	1 small client	2	3	4	5 large client	(5-1)	t stat.
Equity	2.86	2.80	2.73	2.64	2.42	-0.45***	-17.28
Bond	1.92	1.89	1.96	1.90	1.80	-0.12***	-2.48
Balanced	2.65	2.63	2.66	2.66	2.52	-0.13***	-5.93
Money-market	1.81	1.52	1.34	1.32	1.20	-0.62***	-5.08
Alternatives	3.78	3.34	2.94	2.64	2.38	-1.40***	-11.29

Table 7: Fund Gross and Net Performance by Average Investment Amount per Client

This table reports the gross and net returns, CAPM alphas, and Fama-French three factor alphas of equity funds by average investment amount per client quintiles (quitile 1 for small clients and quintile 5 for large clients). The AUM/client quintiles are formed based on their average investment amounts per client (AUM/client) in the previous month in this analysis. To adjust for the market exposure of funds investing globally, we also include the returns of MSCI world index when calculating the CAPM alpha and Fama-French three factor alphas. All returns and alphas are value weighted by fund TNAs. Asterisks denote significance levels: *** 0.01, ** 0.05, and * 0.1.

(in %, annualized)	AUM/client quintiles						
	1 small client	2	3	4	5 large client	(5-1)	t stat.
Gross return	4.73	4.29	5.15	5.19	6.12	1.39	1.33
Gross CAPM alpha	-0.80	-0.62	-0.07	0.12	0.88	1.67*	1.77
Gross FF3 alpha	-0.76	-1.02	-0.70	-0.55	0.26	1.02	1.26
Net return	1.97	1.65	2.62	2.78	3.93	1.96*	1.88
Net CAPM alpha	-3.56	-3.27	-2.59	-2.27	-1.32	2.24**	2.36
Net FF3 alpha	-3.52	-3.67	-3.22	-2.94	-1.95	1.57*	1.93

Table 8: Regressions of Fee Revenues

This table reports the regression results of Eq. (21) in Panel A and Eq. (19) in Panel B. Setting (1) and (7) are regressions using all the equity funds in our sample. Settings (2) - (6) and (8) - (12) report the results by fund size quintiles. Funds are sorted into fund size quintiles based on the total investment amount of all the clients in our sample every month. Robust standard errors are clustered by fund. Asterisks denote significance levels: *** 0.01, ** 0.05, and * 0.1.

Panel A: Regressions for Total Fee Revenue in Dollar						
Dependent Variable: Total Fee Revenue in Dollar						
		Fund size quintiles				
	All	1 small	2	3	4	5 large
	(1)	(2)	(3)	(4)	(5)	(6)
N clients	17.91***	0.57**	3.32***	8.79***	10.63***	17.82***
	(3.94)	(2.12)	(4.48)	(7.88)	(7.46)	(3.70)
VA capm	0.0004***	-0.0007***	-0.0003**	0.0001	0.0003**	0.0004***
	(3.78)	(-3.52)	(-2.01)	(0.39)	(2.16)	(3.74)
Fund size	0.0234***	0.0268***	0.0284***	0.0268***	0.0258***	0.0233***
	(37.49)	(64.96)	(74.03)	(66.28)	(62.04)	(36.54)
Constant	659.5**	-5.4	-152.1***	-219.8***	-357.1*	2748.3
	(1.97)	(-0.62)	(-5.47)	(-3.12)	(-1.86)	(1.53)
Observations	341,373	67,548	67,909	68,346	68,523	69,047
Adjusted R-squared	0.981	0.600	0.603	0.668	0.762	0.975
Panel B: Regressions for Percentage Fee						
Dependent Variable: Fee Revenue as a Fraction of AUM						
	(7)	(8)	(9)	(10)	(11)	(12)
$1/w$	5.72***	3.28***	5.41***	8.87***	9.19***	13.93***
	(13.88)	(8.14)	(9.75)	(11.30)	(8.98)	(9.82)
alpha capm	-0.0004***	-0.0005***	-0.0006***	-0.0004***	-0.0001	-0.0002*
	(-7.17)	(-3.93)	(-4.40)	(-3.32)	(-1.12)	(-1.86)
Constant	0.0260***	0.0263***	0.0262***	0.0257***	0.0255***	0.0244***
	(205.54)	(125.38)	(124.65)	(110.12)	(104.01)	(90.99)
Observations	341,373	67,548	67,909	68,346	68,523	69,047
Adjusted R-squared	0.020	0.014	0.017	0.029	0.029	0.048

Table 9: Regressions of Advisor Revenues in Dollars

This table reports the regression of advisors' total fee revenues in Canadian dollars on explanatory variables. *N of Plans/Client* (average number of plans per client), *N of Clients* (number of clients), and *N of Funds/Client* (average number of funds per client) are in units, and all other variables are standardized to a mean of zero and a standard deviation of one. *VA capm* is the value added of all risky assets based on CAPM model. *Advisor Skill* is the deciles sorted based the net alphas of advisors' personal portfolios. Robust standard errors are clustered at the advisor level. *Client Financial Knowledge*, *Risk Tolerance*, *Investment Horizon*, and other client and advisor demographics are self-declared in the Know Your Client forms. *VW Risky Shares* is the value-weighted fraction of money invested in risky assets. Asterisks denote significance levels: *** 0.01, ** 0.05, and * 0.1.

Dependent variable: Total Fee Revenues in thousands C$ (Mean=170.35)				
	(1)	(2)	(3)	(4)
Alpha service variables:				
VA capm	0.99	0.01	-0.74	-0.82
	(0.41)	(0.01)	(-0.38)	(-0.43)
Advisor Skill	-14.53**	-11.28*	-2.76	-2.34
	(-2.02)	(-1.75)	(-0.64)	(-0.56)
Non-alpha service variables:				
N of Plans/Client			46.90***	31.34***
			(5.08)	(4.04)
N of Clients			1.50***	1.47***
			(15.48)	(12.77)
Advisor demographics:				
Advisor Female	-83.27***	-77.81***	-26.24***	-23.84***
	(-6.19)	(-6.05)	(-3.89)	(-3.45)
Advisor Age	18.32**	-20.23***	14.77***	2.79
	(2.49)	(-2.62)	(2.80)	(0.41)
Client demographics:				
Client Financial Knowledge		-31.33***		1.48
		(-4.57)		(0.28)
Client Risk Tolerance		-18.12**		-1.97
		(-2.45)		(-0.37)
Investment Horizon		29.88***		-0.04
		(2.81)		(-0.00)
Client Age		74.77***		27.89***
		(8.55)		(3.73)
Client Salary		12.77**		26.66***
		(2.24)		(6.26)
Client Net Worth		33.24***		8.63***
		(7.31)		(2.72)
Client portfolio characteristics:				
N of Funds/Client		9.81***		2.80*
		(4.12)		(1.76)
VW Risky Shares		14.00**		4.93
		(2.31)		(1.43)
Year-Month F.E.	Yes	Yes	Yes	Yes
Observations	191,729	188,385	191,729	188,385
Adjusted R-squared	0.002	0.008	0.027	0.027

Table 10: Regressions of Advisor Revenues as a Fraction of AUM

This table reports the regression of advisors' total fee revenues in fraction of AUM (basis points) on explanatory variables. *N of Plans/Client* (average number of plans per client), *N of Clients* (number of clients), and *N of Funds/Client* (average number of funds per client) are in units, and all other variables are standardized to a mean of zero and a standard deviation of one. *CAPM alpha* is the value-weighted alpha of all risky assets based on CAPM model. *Advisor Skill* is the deciles sorted based the net alphas of advisors' personal portfolios. Robust standard errors are clustered at the advisor level. *Client Financial Knowledge*, *Risk Tolerance*, *Investment Horizon*, and other client and advisor demographics are self-declared in the Know Your Client forms. *VW Risky Shares* is the value-weighted fraction of money invested in risky assets. Asterisks denote significance levels: *** 0.01, ** 0.05, and * 0.1.

Dependent variable: Fee Revenues in fraction of AUM (in basis points, Mean=245.01)				
	(1)	(2)	(3)	(4)
Alpha service variables:				
CAPM alpha	-0.68***	-0.87***	-0.69***	-0.87***
	(-3.43)	(-4.60)	(-3.45)	(-4.64)
Advisor Skill	-1.56***	-0.88*	-1.55***	-0.83*
	(-2.86)	(-1.87)	(-2.87)	(-1.78)
Non-alpha service varables:				
N of Plans/Client			-1.86**	-0.82
			(-1.97)	(-0.97)
N of Clients			0.01*	0.01***
			(1.82)	(3.22)
Advisor demographic:				
Advisor Female	-1.99	-2.16**	-1.78	-1.79*
	(-1.62)	(-2.04)	(-1.46)	(-1.70)
Advisor Age	0.19	-0.49	0.29	-0.34
	(0.36)	(-0.90)	(0.52)	(-0.64)
Client demographic:				
Client Financial Knowledge		-1.27**		-1.06*
		(-2.02)		(-1.70)
Client Risk Tolerance		1.41**		1.52***
		(2.51)		(2.72)
Investment Horizon		-0.83*		-1.03**
		(-1.67)		(-2.03)
Client Age		0.84		0.55
		(1.35)		(0.86)
Client Salary		0.98		1.05*
		(1.61)		(1.74)
Client Net Worth		-1.13**		-1.22**
		(-1.99)		(-2.19)
Client portfolio characteristics:				
N of Funds/Client		-0.29***		-0.29***
		(-2.76)		(-2.63)
VW Risky Shares		11.58***		11.53***
		(19.80)		(19.78)
Year-Month F.E.	Yes	Yes	Yes	Yes
Observations	190,448	187,099	190,448	187,099
Adjusted R-squared	0.040	0.104	0.041	0.105

Table 11: Assets Under Management and Exit Rates of Financial Advisors and Clients

This table reports the average assets under management and number of clients for financial advisors, as well as the exit rates for both financial advisors and their clients using the advisor-year data from 1999 to 2013. We report for the full sample, by assets under management (AUM) quintiles, and for advisors exiting in 2-4, 5-10, and 10+ years separately. Financial advisors are sorted into AUM quintiles based on their total assets under management every year. For advisors exiting in 2-4 and 5-10 years, we use advisors entering since 2000 and exiting before 2013 to avoid the effect of data cut. Advisors exiting in 10+ years include all advisors with more than 10 years of data in our sample period. Panel A reports the average *AUM per advisor* in million C$s and the *Fraction of total AUM* represented by each subgroup of advisors. Panel B reports the average values per advisor per year, for the *Total number (#) of clients*, *Number (#) of new clients* entering, *Number (#) of clients* exiting the next year, and the average *investment amount (AUM) per client* in thousand C$s. Panel C reports the *Client exit rate*, which is the percentage (%) of clients leaving the current advisor in the next year if the advisor does not exit, *Advisor exit rate*, the percentage of advisors exiting in the next year, and *Client total exit rate*, that is the total percentage of clients exiting including both scenarios. *Client duration (implied)* and *Advisor duration (implied)* are the expected number of years before they exit calculated as the reciprocal of Client exit rate and Advisor exit rate.

		AUM quintiles					Advisors exiting in X years		
	Full Sample	Q1 (small)	Q2	Q3	Q4	Q5 (large)	2-4	5-10	10+
Panel A: Assets under management (AUM)									
AUM per advisor (in million C$s)	5.27	0.06	0.55	1.93	5.17	18.65	0.89	1.55	6.83
Fraction of total AUM (in %)	100.0	0.2	2.1	7.3	19.6	70.7	0.8	2.8	82.9
# of observations	33,721	6,749	6,744	6,746	6,744	6,738	1,587	3,210	21,575
Panel B: Number (#) of clients per advisor per year and investment amount per client (AUM per client)									
Total # of clients	97.5	4.2	21.7	58.8	120.9	282.1	19.4	30.0	124.7
# of new clients	10.6	0.6	3.3	7.8	14.7	26.5	4.1	4.4	12.7
# of clients exiting	8.4	0.5	2.4	5.2	10.1	23.7	3.6	4.9	9.6
AUM per client (in 000s)	44.6	18.2	35.8	42.7	51.8	74.4	34.0	39.7	45.8
Panel C: Exiting rates per year and implied durations									
Client exit rate (in %)	8.8	9.5	10.2	8.4	7.9	7.9	14.4	12.7	7.4
Advisor exit rate (in %)	6.1	18.0	6.7	3.2	1.6	1.1	35.9	15.0	1.7
Client total exit rate (in %)	14.9	27.5	16.8	11.6	9.6	9.0	50.3	27.7	9.0
Client duration (implied, in years)	11.4	10.6	9.9	12.0	12.6	12.6	6.9	7.9	13.6
Advisor duration (implied, in years)	16.3	5.6	15.0	30.8	61.9	94.9	2.8	6.6	60.1

Table 12: Client Survival Rates across Client Tenure

This table reports the average client survival rates ($I_t^{survive}$) across client tenure (t) for the full sample, by assets under management (AUM) quintiles, and for advisors exiting in 2-4, 5-10, and 10+ years separately. We use the notations in Eq. (36) to illustrate this calculation. For each advisor in each year τ, we calculate the client survival rate $I_t^{survive}$ at each client tenure year t as the total number of clients survived until year τ (i.e., $n_{\tau-t}I_t^{survive}$) divided by the total number of clients entered in the same cohort $n_{\tau-t}$. Then we calculate the average client survival rate $I_t^{survive}$ for each client tenure year t across all advisor-year observations. To focus on the data that we have information on advisors' entering year and their clients' entering year, we use the data of advisors entering since 2000 (i.e., skip the first year 1999) for this analysis. Financial advisors are sorted into AUM quintiles based on their total assets under management every year. For advisors exiting in 2-4 and 5-10 years, we use advisors exiting before 2013 to avoid the effect of data cut. Advisors exiting in 10+ years include all advisors entering since 2000 and with more than 10 years of data in our sample period.

		AUM quintiles					Advisors exiting in X years		
Client Tenure	Full Sample	Q1 (small)	Q2	Q3	Q4	Q5 (large)	2-4	5-10	10+
0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1	0.91	0.88	0.91	0.92	0.92	0.93	0.86	0.92	0.93
2	0.85	0.80	0.85	0.86	0.87	0.88	0.77	0.85	0.87
3	0.80	0.74	0.80	0.81	0.81	0.84	0.68	0.79	0.82
4	0.76	0.69	0.76	0.77	0.78	0.80		0.74	0.78
5	0.72	0.63	0.71	0.72	0.74	0.76		0.69	0.74
6	0.68	0.58	0.67	0.69	0.70	0.73		0.65	0.70
7	0.65	0.52	0.65	0.66	0.69	0.71		0.61	0.67
8	0.63	0.50	0.61	0.64	0.67	0.69		0.57	0.65
9	0.61	0.45	0.59	0.64	0.65	0.66		0.52	0.62
10	0.60	0.43	0.57	0.61	0.64	0.65			0.60

Table 13: Client Investment Flows across Client Tenure

This table reports average new investment flows of each client per year with the increase of client tenure for the full sample, by assets under management (AUM) quintiles, and for advisors exiting in 2-4, 5-10, and 10+ years separately. We calculate the new investment flow for each client in each year as the change of total investment amount this year deducting the increase/decrease of investment amount from investment returns as in Eq.(37). The investment flow is calculated for all clients with positive investment amounts at the end of each year. Financial advisors are sorted into AUM quintiles based on their total assets under management every year. For advisors exiting in 2-4 and 5-10 years, we use advisors exiting before 2013 to avoid the effect of data cut. Advisors exiting in 10+ years include all advisors entering since 2000 and with more than 10 years of data in our sample period.

		AUM quintiles					Advisors exiting in X years		
Client Tenure	Full Sample	Q1 (small)	Q2	Q3	Q4	Q5 (large)	2-4	5-10	10+
0 (First investment)	43,857	16,687	25,335	33,639	43,665	65,024	47,276	44,555	39,190
1	3,977	63	1,999	2,732	3,875	5,886	2,794	3,414	5,222
2	1,946	- 1,550	324	1,498	1,997	2,915	579	1,536	2,686
3	1,946	- 1,823	- 192	277	2,045	3,640		1,350	2,721
4	1,418	- 5,903	- 618	621	1,328	2,876		1,111	1,759
5	1,518	- 1,329	- 355	79	1,303	2,975		562	2,357
6	1,253	- 1,298	- 495	- 386	1,100	2,582		14	2,053
7	1,252	- 1,788	- 1,239	399	1,170	2,355		172	1,722
8	604	393	- 943	- 1,571	92	2,108		- 668	948
9	941	- 6,385	- 1,533	488	550	2,084			941
10	907	- 2,161	- 403	- 755	2,891	525			907

Table 14: Average Number of Plans per Client across Client Tenure

This table reports average number of financial plans per client with the increase of client tenure for the full sample, by assets under management (AUM) quintiles, and for advisors exiting in 2-4, 5-10, and 10+ years separately. Financial advisors are sorted into AUM quintiles based on their total assets under management every year. For advisors exiting in 2-4 and 5-10 years, we use advisors exiting before 2013 to avoid the effect of data cut. Advisors exiting in 10+ years include all advisors entering since 2000 and with more than 10 years of data in our sample period.

		AUM quintiles					Advisors exiting in X years		
Client Tenure	Full Sample	Q1 (small)	Q2	Q3	Q4	Q5 (large)	2-4	5-10	10+
0	1.77	1.46	1.61	1.72	1.78	1.91	1.84	1.78	1.69
1	1.87	1.52	1.66	1.83	1.86	2.00	1.94	1.89	1.81
2	1.93	1.54	1.71	1.89	1.92	2.06	2.01	1.95	1.87
3	1.98	1.56	1.74	1.93	1.99	2.11	2.03	2.01	1.95
4	2.03	1.53	1.79	1.96	2.01	2.18		2.05	2.01
5	2.07	1.48	1.81	2.00	2.05	2.23		2.09	2.06
6	2.12	1.48	1.86	2.04	2.12	2.25		2.14	2.10
7	2.16	1.53	1.91	2.06	2.16	2.30		2.19	2.15
8	2.21	1.43	1.86	2.10	2.20	2.37		2.19	2.21
9	2.23	1.42	1.87	2.12	2.25	2.37		2.11	2.26
10	2.28	1.54	1.94	2.01	2.31	2.46			2.28

Table 15: Total Assets Under Management across Client Cohorts

This table reports the regression results of total investment amount of from all clients in the same cohort year on the dummies of client tenure year, that is the number of years this cohort of clients have been with the advisor. We report the regression results for the full sample, by AUM quintiles, and for advisors exiting in 2-4, 5-10, and 10+ years separately. The data is aggregated at the advisor-year-client tenure year level. *Total AUM at Enter Year* is the total investment amount of all the clients in this cohort in the first year they enter, with its mean value reported in the first row. Sig. lvl: *** 0.01, ** 0.05, * 0.1

		AUM quintiles					Advisors exiting in X years		
	Full Sample	Q1 (small)	Q2	Q3	Q4	Q5 (large)	2-4	5-10	10+
Total AUM at Enter Year (0)	0.637	0.041	0.166	0.365	0.693	1.529	0.420	0.533	0.594
Client Tenure=1	0.044***	-0.002	0.032***	0.088***	0.120***	0.200***	-0.104***	0.068**	0.056***
	(4.69)	(-1.13)	(6.22)	(6.18)	(6.96)	(4.91)	(-3.36)	(2.08)	(5.31)
2	0.053***	0.002	0.062***	0.145***	0.192***	0.280***	-0.416***	0.129***	0.105***
	(3.49)	(0.62)	(8.17)	(6.58)	(8.18)	(4.10)	(-2.75)	(3.36)	(5.73)
3	0.075***	0.004	0.078***	0.191***	0.210***	0.436***	-0.217***	0.123***	0.146***
	(4.50)	(1.33)	(8.16)	(6.53)	(7.47)	(5.28)	(-2.92)	(3.39)	(5.82)
4	0.043*	0.004	0.091***	0.211***	0.214***	0.456***		0.071*	0.175***
	(1.82)	(1.18)	(8.22)	(5.82)	(7.18)	(4.31)		(1.67)	(5.83)
5	0.072***	0.002	0.119***	0.217***	0.275***	0.592***		0.077*	0.205***
	(2.81)	(0.60)	(8.78)	(4.85)	(8.29)	(5.15)		(1.73)	(6.10)
6	0.057*	0.001	0.129***	0.195***	0.285***	0.769***		-0.001	0.232***
	(1.96)	(0.23)	(8.15)	(4.72)	(6.59)	(5.65)		(-0.02)	(5.73)
7	0.107***	0.001	0.140***	0.227***	0.383***	0.839***		0.060	0.249***
	(2.99)	(0.23)	(7.48)	(5.54)	(7.32)	(6.08)		(0.87)	(5.71)
8	0.192***	0.004	0.173***	0.275***	0.385***	1.236***		-0.075	0.302***
	(4.70)	(0.76)	(7.79)	(6.88)	(6.24)	(8.34)		(-0.57)	(6.42)
9	0.229***	0.006	0.186***	0.332***	0.511***	1.414***		0.001	0.323***
	(4.23)	(1.03)	(6.65)	(5.16)	(6.51)	(7.44)		(0.01)	(5.48)
Client Tenure=10	0.252***	0.011	0.175***	0.303***	0.640***	1.303***			0.304***
	(3.41)	(1.46)	(6.55)	(3.83)	(7.71)	(4.19)			(4.16)
Total AUM at Enter Year	0.862***	0.005***	0.115***	0.559***	0.802***	0.940***	0.686***	0.604***	0.913***
	(30.77)	(2.67)	(2.94)	(8.87)	(26.05)	(26.55)	(77.67)	(11.33)	(16.92)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Advisor Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Advisor Tenure Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	50,951	8,244	11,939	11,120	9,677	6,382	2,898	7,700	20,049
Adjusted R-squared	0.837	0.353	0.394	0.714	0.859	0.921	0.521	0.601	0.875

Table 16: Increase of Assets Under Management from Flows versus Returns

This table decomposes the increase of assets under management (AUM) across client tenure by adding *AUM from returns* and *AUM from flows* as two additional control variables into the regression in the last column of Table 15. A complete decomposition using this regression requires each advisor has a balanced panel data with client tenure 1 to 10. Therefore, we focus on the advisors with more than ten years of data in this decomposition. *AUM from returns* is the total increase/decrease of AUM of all clients in each cohort from their investment returns since the first year that they enter, and *AUM from flows* is the total increase/decrease of AUM of all clients in each cohort from their contributions or withdraws of capital since the first year that they enter, including the last withdraws of the clients who exit. Columns (1) to (3) are for the full sample, and column (4) to (6) are for the largest funds in AUM quintile 5, which manage more than 70% of the total AUM in the industry. Sig. lvl: *** 0.01, ** 0.05, * 0.1

	Full Sample			AUM Quintile 5 (large)		
	(1)	(2)	(3)	(4)	(5)	(6)
Client Tenure=1	0.056***	0.048***	0.002	0.244***	0.238***	0.007
	(5.31)	(4.46)	(1.18)	(5.34)	(4.77)	(1.24)
2	0.105***	0.083***	-0.000	0.406***	0.363***	-0.003
	(5.73)	(5.22)	(-0.06)	(5.15)	(5.28)	(-0.26)
3	0.146***	0.103***	-0.001	0.607***	0.465***	-0.013
	(5.82)	(5.07)	(-0.08)	(5.68)	(5.64)	(-0.84)
4	0.175***	0.119***	-0.001	0.689***	0.499***	-0.014
	(5.83)	(5.06)	(-0.14)	(5.34)	(5.20)	(-0.67)
5	0.205***	0.159***	0.003	0.769***	0.648***	-0.014
	(6.10)	(6.30)	(0.35)	(5.43)	(7.08)	(-0.49)
6	0.232***	0.187***	0.007	0.925***	0.771***	-0.006
	(5.73)	(6.15)	(0.91)	(5.46)	(7.11)	(-0.20)
7	0.249***	0.199***	0.011	1.029***	0.876***	0.000
	(5.71)	(5.36)	(1.23)	(6.06)	(6.94)	(0.00)
8	0.302***	0.221***	0.016	1.245***	0.941***	0.005
	(6.42)	(5.90)	(1.59)	(7.03)	(7.25)	(0.16)
9	0.323***	0.198***	0.020*	1.462***	0.965***	0.009
	(5.48)	(4.16)	(1.72)	(7.12)	(6.73)	(0.22)
Client Tenure=10	0.304***	0.139**	0.022	1.505***	0.868***	-0.014
	(4.16)	(2.23)	(1.55)	(5.25)	(4.09)	(-0.27)
Total AUM at enter year	0.913***	0.887***	1.048***	0.910***	0.881***	1.048***
	(16.92)	(23.10)	(163.70)	(13.21)	(17.78)	(158.44)
AUM from returns		1.215***	0.975***		1.328***	1.013***
		(10.13)	(30.59)		(9.64)	(37.83)
AUM from flows			1.003***			0.982***
			(67.67)			(71.11)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Advisor Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Advisor Tenure Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	20,049	20,049	20,049	3,465	3,465	3,465
Adjusted R-squared	0.875	0.901	0.994	0.894	0.924	0.997

A Appendix

A.1 Capital for Active Investment is Abundant ($q^* \geqslant q^{\alpha *}$)

In this section, we solve the problem when the capital raised through the non-alpha service is enough for the fund's active investment (i.e. $q \geqslant q^{\alpha *}$). As in Berk and Green (2004), we model the value added (revenue) from their active investment as

$$V^{\alpha} = aq^{\alpha} - bq^{\alpha 2}, \tag{38}$$

where q^{α} is the amount of capital the fund chooses to invest actively. Taking the F.O.C. with respect to Eq. (38) gives the optimal amount of capital for active investment

$$q^{\alpha *} = \frac{a}{2b} \tag{39}$$

which maximize the revenue of active investment. Then, it is optimal for the fund to invest $q^{\alpha *}$ actively and index the rest. Since the choices of $q^{\alpha *}$ and q^* are independent when the capital is abundant (i.e. $q^* \geqslant q^{\alpha *}$), the optimal fund size $q^* = \frac{\bar{s}-c/w}{2\kappa}$ as in Eq. (15). Substituting Eq. (15) and (39) into $q^* \geqslant q^{\alpha *}$ gives the explicit expression of the condition that capital is abundant for active investment as

$$q^* = \frac{\bar{s} - c/w}{2\kappa} \geqslant \frac{a}{2b} = q^{\alpha *}. \tag{40}$$

The maximum revenue from the non-alpha service is $\Pi^{s*} = \frac{(\bar{s}-c/w)^2}{4\kappa}$ as in Eq. (16). As in Berk and Green (2004), the fund could extra all the value added of its alpha service when there is competitive provision of capital for funds with positive net alphas. Otherwise, the fund can always choose to provide the alpha service in one fund and the non-alpha service a in another passive fund to extract their value added from these two services separately. Therefore, the maximum total revenue of the fund can be expressed as the sum of the revenue from active investment $V^{\alpha *}$ and the revenue from non-alpha service as below,

$$V^* = V^{\alpha *} + \Pi^{s*} = \frac{a^2}{4b} + \frac{(\bar{s} - c/w)^2}{4\kappa}. \tag{41}$$

The equilibrium gross alpha of the fund equals to the fee it charges for the alpha service

$$\alpha^{g*}(q) = f^{\alpha*} = \frac{V^{\alpha*}}{q^*} = \frac{a^2\kappa}{2b(\bar{s} - c/w)}, \tag{42}$$

and the total fee in equilibrium equals the sum of the fees for alpha and non-alpha services, as well as the difference between the equilibrium gross alpha in Eq. (42) and net alpha α^{n*} in Eq. (18):

$$f^* = f^{\alpha*} + f^{s*} = \alpha^{g*}(q) - \alpha^{n*} = \alpha^{g*}(q) + \frac{\bar{s} + c/w}{2}. \tag{43}$$

A.2 Capital for Active Investment is Constrained ($q^* < q^{\alpha*}$)

A.2.1 With Two Share Classes

If the total amount of capital can be raised by the fund through the non-alpha service is not enough for the active investment (i.e. $q^{s*} < q^{\alpha*}$) and the fund is allowed to have two share classes, it is optimal for the fund to open an additional share class to investors chasing positive net-alpha funds only. In this case, the fund would be able to raise enough capital for their active investment strategy as in the Berk and Green model. The optimal amount of capital for active investment $q^{\alpha*}$ is the same as in Eq. (39), and the maximum value added from active investment is as below

$$V^{\alpha*} = \frac{a^2}{4b}. \tag{44}$$

The equilibrium gross alpha of the fund equals to the fee it charges for the alpha service

$$\alpha^{g*}(q) = f^{\alpha*} = \frac{V^{\alpha*}}{q}. \tag{45}$$

and the total fee in equilibrium equals the difference between the equilibrium gross alpha in Eq. (45) and net alpha α^{n*} in Eq. (18):

$$f^* = f^{\alpha*} + f^{s*} = \alpha^{g*}(q) - \alpha^{n*} = \alpha^{g*}(q) + \frac{\bar{s} + c/w}{2}. \tag{46}$$

A.2.2 With One Share Class Only

If the total amount of capital can be raised by the fund through the non-alpha service is not enough for the active investment (i.e. $q^{s*} < q^{\alpha *}$) and the fund is allowed to have one share class only, the total revenue from both alpha and non-alpha services is as below,

$$V = V^{\alpha} + \Pi^{s} = (a + \bar{s})q - (b + \kappa)q^{2} - \frac{c}{w}q. \tag{47}$$

The F.O.C. of Eq. (47) gives the optimal size that maximize the total revenue as

$$q^{*} = \frac{a + \bar{s} - c/w}{2(b + \kappa)}, \tag{48}$$

where the optimal fund size q^{*} increases with both the skill of active investment a and the quality of service $\bar{s}$. Substituting Eq. (48) and (39) into $q^{*} < q^{\alpha *}$ and rearranging give the condition of constrained capital for active investment as

$$\frac{\bar{s} - c/w}{\kappa} < \frac{a}{b}, \tag{49}$$

which is the complementary set of Eq. (40).

The equilibrium fee is

$$f^{*} = \frac{V^{*}}{q^{*}} = \frac{a + \bar{s} + c/w}{2}, \tag{50}$$

where it depends on both the skill of active investment a and the quality of service $\bar{s}$, as well as the average wealth per client w. Substituting Eq. (48) into Eq. (12) gives the equilibrium net alpha as

$$\alpha^{n} = -\bar{s} + \kappa q^{*} = -\bar{s} + \frac{\kappa(a + \bar{s} - c/w)}{2(b + \kappa)}, \tag{51}$$

which increases with skill of active investment a at a speed of $\frac{\kappa}{2(b+\kappa)}$ and decreases with the utility of the non-alpha service $\bar{s}$ at a speed of $\frac{2b+\kappa}{2(b+\kappa)}$. The equilibrium gross alpha of the fund is

$$\alpha^{g*} = \frac{V^{\alpha *}}{q^{*}} = a - bq^{*} = a - \frac{b(a + \bar{s} - c/w)}{2(b + \kappa)}, \tag{52}$$

which increases with skill of active investment a at a speed of $\frac{b+2\kappa}{2(b+\kappa)}$ and decreases with the utility of the non-alpha service $\bar{s}$ at a speed of $\frac{b}{2(b+\kappa)}$.

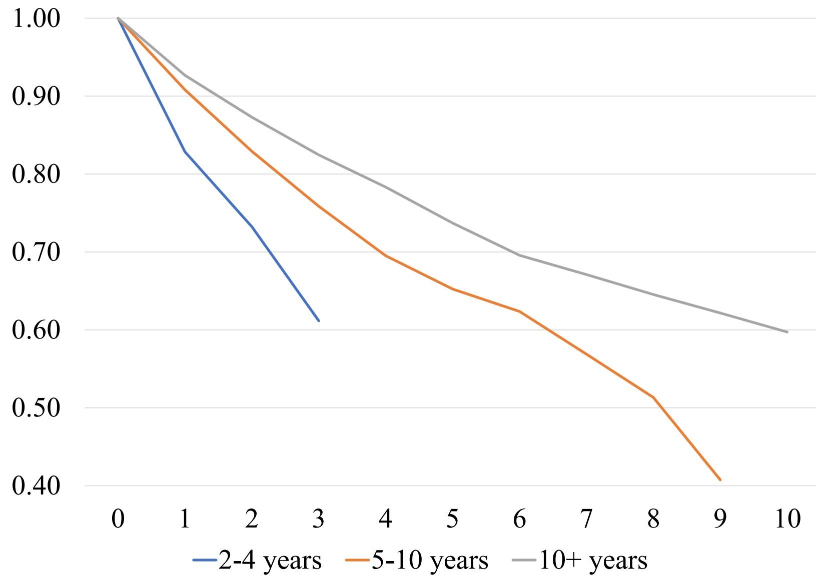

Figure A1: Cumulative Survival Rates across Client Tenure by Financial Advisor Exit Year

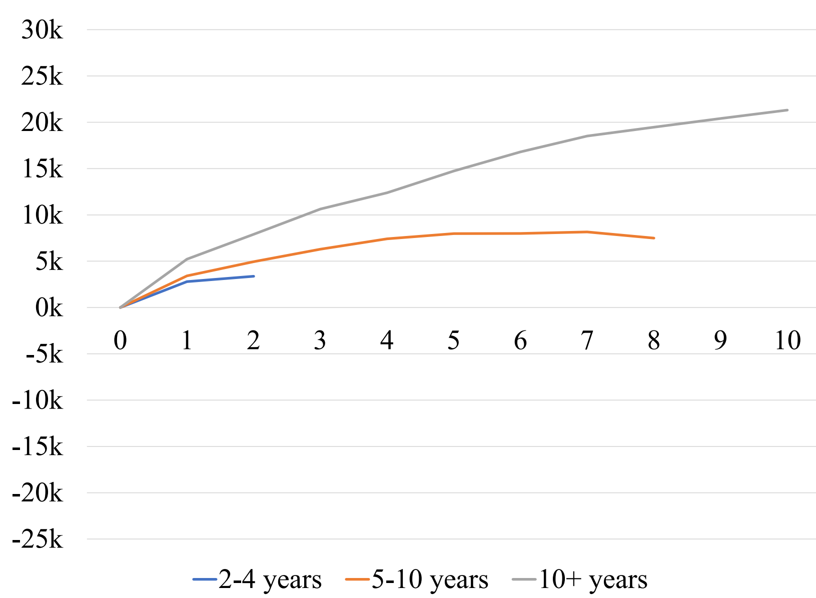

Figure A2: Cumulative Client Investment Flows across Client Tenure by Financial Advisor Exit Year

Table A1: Advisor Dollar Revenues with Advisor Fixed Effects

This table reports the regression of advisors' total fee revenues in Canadian dollars on explanatory variables. *N of Plans/Client* (average number of plans per client), *N of Clients* (number of clients), and *N of Funds/Client* (average number of funds per client) are in units, and all other variables are standardized to a mean of zero and a standard deviation of one. *VA capm* is the value added of all risky assets based on CAPM model. *Advisor Skill* is the deciles sorted based the net alphas of advisors' personal portfolios. Robust standard errors are clustered at the advisor level. *Client Financial Knowledge*, *Risk Tolerance*, *Investment Horizon*, and other client and advisor demographic are self-declared in the Know Your Client forms. *VW Risky Shares* is the value-weighted fraction of money invested in risky assets. Asterisks denote significance levels: *** 0.01, ** 0.05, and * 0.1.

Dependent variable: Total Fee Revenues in C$ (Mean=170,35)				
	(1)	(2)	(3)	(4)
Alpha service variables:				
VA capm	2.12	2.01	2.17	2.16
	(0.58)	(0.55)	(0.59)	(0.59)
Non-alpha service varables:				
N of Plans/Client			45.64***	38.88***
			(3.44)	(3.23)
N of Clients			1.56***	1.55***
			(11.92)	(10.96)
Advisor demographics:				
Advisor Age	128.10**	100.94*	158.94***	136.56***
	(2.33)	(1.90)	(4.98)	(5.31)
Client demographics:				
Client Financial Knowledge		-2.68		10.40
		(-0.33)		(1.44)
Client Risk Tolerance		-14.86		-6.53
		(-1.35)		(-0.69)
Investment Horizon		-13.34		-9.84
		(-1.01)		(-0.79)
Client Age		3.90		-6.42
		(0.61)		(-1.25)
Client Salary		18.05**		15.10**
		(2.15)		(2.21)
Client Net Worth		6.49*		-0.19
		(1.68)		(-0.06)
Client portfolio characteristics:				
N of Funds/Client		11.18***		2.58
		(4.17)		(1.49)
VW Risky Shares		5.06		9.85*
		(0.83)		(1.78)
Year-Month F.E.	Yes	Yes	Yes	Yes
Advisor F.E.	Yes	Yes	Yes	Yes
Observations	191,729	188,385	191,729	188,385
Adjusted R-squared	0.029	0.030	0.033	0.033

Table A2: Advisor Revenues as a % of AUM (with Advisor Fixed Effects)

This table reports the regression of advisors' total fee revenues as a fraction of AUM (basis points) on explanatory variables. *N of Plans/Client* (average number of plans per client), *N of Clients* (number of clients), and *N of Funds/Client* (average number of funds per client) are in units, and all other variables are standardized to a mean of zero and a standard deviation of one. *CAPM alpha* is the value-weighted alpha of all risky assets based on CAPM model. *Advisor Skill* is the deciles sorted based the net alphas of advisors' personal portfolios. Robust standard errors are clustered at the advisor level. *Client Financial Knowledge*, *Risk Tolerance*, *Investment Horizon*, and other client and advisor demographics are self-declared in the Know Your Client forms. *VW Risky Shares* is the value-weighted fraction of money invested in risky assets. Asterisks denote significance levels: *** 0.01, ** 0.05, and * 0.1.

Dependent variable: Fee Revenues as % of AUM (in basis points, Mean=245.01)				
	(1)	(2)	(3)	(4)
Alpha service variables:				
CAPM alpha	-0.32*	-0.44***	-0.32*	-0.45***
	(-1.93)	(-2.74)	(-1.94)	(-2.75)
Non-alpha service varables:				
N of Plans/Client			0.49	0.84
			(0.38)	(0.71)
N of Clients			-0.00	0.01
			(-0.18)	(1.43)
Advisor demographics:				
Advisor Age	-22.81**	-14.47*	-22.75**	-14.15*
	(-2.34)	(-1.78)	(-2.33)	(-1.76)
Client demographics:				
Client Financial Knowledge		0.26		0.35
		(0.29)		(0.40)
Client Risk Tolerance		-0.65		-0.60
		(-0.69)		(-0.64)
Investment Horizon		0.21		0.25
		(0.31)		(0.37)
Client Age		0.01		-0.07
		(0.01)		(-0.08)
Client Salary		1.56		1.54
		(1.57)		(1.54)
Client Net Worth		0.06		0.01
		(0.09)		(0.02)
Client portfolio characteristics:				
N of Funds/Client		-0.15		-0.23*
		(-1.25)		(-1.86)
VW Risky Shares		12.13***		12.16***
		(17.33)		(17.44)
Year-Month F.E.	Yes	Yes	Yes	Yes
Advisor F.E.	Yes	Yes	Yes	Yes
Observations	190,448	187,099	190,448	187,099
Adjusted R-squared	0.274	0.294	0.274	0.294

Table A3: Total Assets Under Management across Client Cohorts Controlling for Returns

This table reports the regression results of Table 15 after adding *AUM from returns* as the control variable. *AUM from returns* is the total increase/decrease of AUM of all clients in each cohort from their investment returns since their first year. Sig. lvl: *** 0.01, ** 0.05, * 0.1

		AUM quintiles					Advisors exiting in X years		
	Full Sample	Q1 (small)	Q2	Q3	Q4	Q5 (large)	2-4	5-10	10+
Client Tenure=1	0.033***	-0.002	0.031***	0.075***	0.104***	0.180***	-0.095***	0.058*	0.048***
	(3.66)	(-1.13)	(5.95)	(4.75)	(6.95)	(4.70)	(-3.09)	(1.83)	(4.46)
2	0.032**	0.001	0.058***	0.126***	0.157***	0.241***	-0.395***	0.105***	0.083***
	(2.19)	(0.57)	(7.72)	(5.14)	(7.47)	(3.71)	(-3.06)	(2.91)	(5.22)
3	0.049***	0.004	0.071***	0.163***	0.176***	0.356***	-0.230**	0.093***	0.103***
	(3.06)	(1.31)	(7.25)	(4.96)	(6.70)	(4.59)	(-2.46)	(2.88)	(5.07)
4	0.026	0.003	0.084***	0.182***	0.186***	0.435***		0.051	0.119***
	(1.20)	(1.13)	(7.84)	(4.49)	(6.64)	(4.84)		(1.29)	(5.06)
5	0.051**	0.002	0.114***	0.187***	0.230***	0.580***		0.057	0.159***
	(2.16)	(0.53)	(8.13)	(3.68)	(7.57)	(5.70)		(1.42)	(6.30)
6	0.060**	0.001	0.129***	0.194***	0.276***	0.745***		-0.025	0.187***
	(2.30)	(0.20)	(7.91)	(4.63)	(6.58)	(6.06)		(-0.43)	(6.15)
7	0.093***	0.001	0.136***	0.198***	0.357***	0.783***		0.012	0.199***
	(2.82)	(0.21)	(7.09)	(4.57)	(7.27)	(6.21)		(0.17)	(5.36)
8	0.128***	0.003	0.165***	0.198***	0.325***	0.983***		-0.121	0.221***
	(3.47)	(0.71)	(7.28)	(4.68)	(5.51)	(7.88)		(-0.95)	(5.90)
9	0.098**	0.005	0.165***	0.239***	0.380***	0.902***		-0.036	0.198***
	(1.97)	(0.94)	(5.42)	(3.21)	(4.99)	(6.15)		(-0.29)	(4.16)
Client Tenure=10	0.112	0.010	0.160***	0.201**	0.513***	0.773***			0.139**
	(1.64)	(1.28)	(5.59)	(2.38)	(6.40)	(2.91)			(2.23)
Total AUM at Enter Year	0.876***	0.006***	0.133***	0.592***	0.823***	0.953***	0.759***	0.604***	0.887***
	(35.62)	(3.12)	(3.20)	(8.46)	(30.81)	(30.48)	(11.35)	(11.33)	(23.10)
AUM from returns	0.953***	0.019***	0.370***	0.972***	0.895***	1.012***	-1.649	0.908***	1.215***
	(9.07)	(3.17)	(2.60)	(5.64)	(8.41)	(8.58)	(-1.32)	(4.10)	(10.13)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Advisor Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Advisor Tenure Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	50,951	8,244	11,939	11,120	9,677	6,382	2,898	7,700	20,049
Adjusted R-squared	0.854	0.355	0.416	0.752	0.882	0.940	0.539	0.622	0.901

Table A4: Total Assets Under Management across Client Cohorts Controlling for Returns and Flows

This table reports the regression results of Table 15 after adding *AUM from returns* and *AUM from flows* as the control variables. *AUM from returns* is the total increase/decrease of AUM of all clients in each cohort from their investment returns since the first year that they enter, and *AUM from flows* is the total increase/decrease of AUM of all clients in each cohort from their deposits or withdraws of capital since their first year. Sig. lvl: *** 0.01, ** 0.05, * 0.1

		AUM quintiles					Advisors exiting in X years		
	Full Sample	Q1 (small)	Q2	Q3	Q4	Q5 (large)	2-4	5-10	10+
Client Tenure=1	0.003	-0.002	0.005*	0.009**	0.008*	0.017*	0.001	0.006	0.002
	(1.57)	(-1.07)	(1.89)	(2.49)	(1.91)	(1.91)	(0.13)	(0.96)	(1.18)
2	0.006*	0.001	0.010**	0.014**	0.012**	0.036**	0.002	0.023*	-0.000
	(1.83)	(0.58)	(2.54)	(2.37)	(2.01)	(2.03)	(0.12)	(1.94)	(-0.06)
3	0.008*	0.003	0.012***	0.023***	0.009	0.048**	0.012	0.024	-0.001
	(1.90)	(1.10)	(4.68)	(2.75)	(1.40)	(2.24)	(0.33)	(1.58)	(-0.08)
4	0.009*	0.004	0.016***	0.023***	0.007	0.048*		0.038*	-0.001
	(1.87)	(1.46)	(3.08)	(3.38)	(0.89)	(1.94)		(1.93)	(-0.14)
5	0.017***	0.003	0.024***	0.030***	0.021*	0.058**		0.049**	0.003
	(2.86)	(1.02)	(3.84)	(3.80)	(1.70)	(2.28)		(1.99)	(0.35)
6	0.023***	0.002	0.028***	0.027***	0.025**	0.078***		0.055	0.007
	(3.27)	(0.49)	(4.21)	(3.53)	(2.48)	(2.77)		(1.56)	(0.91)
7	0.024***	0.003	0.033***	0.032***	0.039***	0.070**		0.042	0.011
	(3.14)	(0.62)	(4.09)	(3.70)	(3.12)	(2.27)		(1.61)	(1.23)
8	0.031***	0.004	0.038***	0.038***	0.054***	0.099***		0.001	0.016
	(3.42)	(0.95)	(3.84)	(3.91)	(3.26)	(2.73)		(0.03)	(1.59)
9	0.050***	0.008	0.049***	0.044***	0.101***	0.110***		0.054	0.020*
	(4.39)	(1.43)	(3.75)	(2.85)	(4.08)	(2.65)		(1.64)	(1.72)
Client Tenure=10	0.036***	0.011	0.052***	0.066***	0.057***	0.068			0.022
	(3.09)	(1.46)	(4.09)	(2.92)	(3.38)	(1.47)			(1.55)
Total AUM at Enter Year	1.040***	0.091***	0.955***	1.015***	1.044***	1.040***	1.013***	1.015***	1.048***
	(248.00)	(2.81)	(22.57)	(108.07)	(190.33)	(216.86)	(121.58)	(172.12)	(163.70)
AUM from returns	0.997***	0.106***	0.832***	0.968***	0.958***	1.013***	1.043***	1.014***	0.975***
	(57.65)	(3.59)	(9.76)	(19.61)	(28.21)	(47.86)	(7.67)	(15.90)	(30.59)
AUM from Flows	0.992***	0.082***	0.926***	0.960***	0.987***	0.964***	1.011***	0.985***	1.003***
	(115.48)	(2.61)	(23.42)	(44.88)	(64.45)	(61.27)	(120.98)	(31.91)	(67.67)
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Advisor Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Advisor Tenure Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	50,951	8,244	11,939	11,120	9,677	6,382	2,898	7,700	20,049
Adjusted R-squared	0.994	0.404	0.922	0.974	0.989	0.996	0.992	0.976	0.994