On the Role of Human Capital in Investment Management

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Abstract

Using a new dataset on employment at SEC-registered investment advisors, we analyze which clienteles, asset classes, and strategies require more human capital, as well as the value of human capital to investment managers. Controlling for assets, quantity of human capital is not associated with better returns. However, employing more advisory personnel is associated with more future assets under management, justifying the employees' costs from the firm's point of view. More human capital-intensive firms also manage portfolios that exhibit the hallmarks of closet indexing such as lower active share and lower tracking error of benchmarks. Our results are consistent with the idea that marketing and client services are the main responsibility of most investment professionals in the asset management industry.

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1. Introduction

The global asset management industry, administering over $85 trillion in assets at the end of 2016[1], has been steadily shifting away from more expensive human-directed active portfolio management and advisory services toward cheaper passive investing and automated "robo"-advisors. Still, the industry is heavily reliant on human capital, employing nearly a million individuals in the United States alone. However, little research has been done on how human capital fits into the asset management production function: what are the different roles of advisory employees, which asset classes and strategies are more labor intensive, and whether a larger research team of analysts and portfolio managers is associated with better returns and/or a better ability to attract investors?

Our paper's main contribution lies in explaining why investment management firms (many of which are closet-indexers) employ large numbers of buy-side analysts and portfolio managers who are unable to beat passive benchmarks enough to justify their costs. Seemingly, these firms could earn more money by firing these advisory personnel, indexing the assets, and splitting the salary savings with their clients. However, if investors can observe (and care about) the size of the advisory staff, such a strategy would reveal the firm to be closet-indexers, and the investors would demand lower fees or switch to other active managers or low-cost passive strategies. Therefore, investment firms need to continue to employ a lot of advisory employees who are not justifying their salaries by generating alpha but justify them by helping the firm to attract and retain clients.

We examine the role of investment management human capital using a new dataset on advisory employees at over 16,000 U.S. SEC-registered investment advisors (RIAs) from 2000 through 2016. We start by documenting that the quantity of advisory employees at an RIA is

[1]https://press.pwc.com/News-releases/global-assets-under-management-set-to-rise-to--145.4-trillion-by-2025/s/e236a113-5115-4421-9c75-77191733f15f

related to the clienteles of that firm and the asset classes managed by that firm. Managing accounts of individuals is more labor intensive than managing separate accounts for institutions or pooled vehicles such as hedge funds and mutual funds. Outside of individual clients, private equity and venture capital firms are more labor-intensive than hedge fund managers, which, in turn, are more labor-intensive than firms that manage mutual funds. Firms that specialize in the most traditional asset class, U.S. equity, use less human capital than firms which manage fixed income, international equity, and alternative asset classes such as currencies, derivatives, and real estate. Within domestic equity, investment advisory firms that hold more small-cap stocks and growth stocks employ more advisory employees than those with large-cap stocks and value stocks. These results suggest that heterogeneous demand for human capital by RIAs is explained both by differences in client servicing requirements as well as differences in asset complexity and information asymmetry.

Even after controlling for clienteles and asset classes, as well as other fund characteristics such as assets under management, there remains significant heterogeneity in the number of financial professionals employed by investment advisory firms. One possible additional reason for firms to employ more portfolio managers and research analysts is that larger teams are able to create more value for investors in terms of outperforming performance benchmarks, and this value can be extracted by the firm in the form of higher fees. We test this hypothesis by regressing future measures of performance on advisory employees and other firm characteristics. During our sample period, we are unable to reject the null hypothesis that employing more professionals in portfolio management and research roles has no effect on performance. This is true for holdings-based returns from quarterly 13F filings, as well as various measures of mutual fund performance, where we control for differences in style, risk factor loadings, and other fund characteristics. While the

literature has found some evidence that larger investment management firms are able to realize returns to scale associated with better performance (e.g., Chen, Hong, Huang, and Kubik, 2004, for mutual funds), our results suggest that this is not driven by larger research teams.

Even if hiring more advisory employees is not associated with better portfolio performance, it might still make sense for investment management firms if it improves the ability of the firm to attract clients, since such firms typically charge fees as a percentage of assets under management (in addition to incentive fees). We test this hypothesis by investigating the relationship between advisory employees and changes in assets at the advisory firm level as well as at the mutual fund level.

We find a positive association between advisory employees and future changes in assets under management. At the advisory firm level, doubling the number of employees (holding all else equal) is associated with roughly a 3.5 percentage point increase in next year's growth in assets. When we decompose asset growth into two components, growth in the number of accounts and growth in assets per account, we find that the effect of advisory employees is entirely on future growth in the number of accounts with no effect on assets per account. This indicates that advisory employees are not growing an average client's assets, either by investing the assets in better-performing securities or by convincing the client to invest more with the firm. Instead, they are growing firm's assets under management by attracting new clients or preventing existing clients from leaving, which leads to more managed accounts.

One obvious problem with this analysis is possible endogeneity. We attempt to address omitted-variable bias by controlling for firm characteristics, such as past returns, that are known to predict client investment behavior. Reverse causality could also be at work in these tests since asset flows are fairly predictable and firms can change their staffing in anticipation of future

changes in assets. We address this issue through an instrumental variable approach, where we instrument for our main explanatory variable, advisory employees, with the five-year lag of the residual from regressing advisory employees on firm characteristics, and confirm our OLS results. Because our explanatory variable has high serial correlation, the instrument is strong. Furthermore, we think it is unlikely that firms can predict asset flows more than five years in the future so it seems to rule out reverse causality. However, this IV approach does not completely rule out omitted variable bias since the five-year lagged residual could still be correlated with omitted variables that predict asset flows.

While these results are informative, we are unable to control for different strategies (or styles) and other portfolio characteristics (such as portfolio size) at the advisor level. Therefore, we also investigate the effect of advisory employees on changes in total mutual fund assets and total fund flows, and find results consistent with those at the advisory firm level. Similar to our analysis with firms, we decompose growth in mutual fund assets into growth in the number of funds and growth in assets per fund. As with firm-level results, there is a stronger effect of advisory employees on future growth in the number of funds. We also calculate mutual fund asset growth due to fund flows (which strips out the effect of returns on fund assets) and due to residual fund flows (where we first controls for style, fund characteristics, and past returns), and also uncover statistically significant positive effects on these measures from employing more advisory staff.

In terms of economic magnitudes, a median mutual fund advisory firm (with $3.5 billion in assets and 10 advisory employees) would increase next year's assets from residual flows by about 5 percentage points or $175 million from doubling the staff to 20 advisory employees. This would lead to a $1.75 million in increase in annual fees (at a typical 1% management fee), assuming the assets remain with the firm, and would be in the same ballpark as the annual

compensation costs for the 10 new employees, suggesting that the marginal benefits and marginal costs of human capital are of the same order of magnitude at firms' profit-maximizing choices of number of employees.

There are a number of possible explanations for these results, and we do not take a strong position on which is the most important channel. One potential channel is that a large research team could act like a "Potemkin" village, used to signal to current and potential future clients that the firm is investing in the resources needed to acquire information in order to beat passive and lower-fee alternatives. This story is consistent with large teams of advisory personnel being widely cited in promotional literature by the firms that employ them. Another potential channel is that the advisory employees are actually closet salesmen, ostensibly there to do portfolio management and research, but spending much of their time in servicing clients or marketing their firm to potential clients, brokers, advisors, institutions, etc. Finally, since investment professionals typically specialize in particular asset classes or strategies, hiring more advisory employees can allow a firm to offer more new and customized products to help attract clients who were not interested in the pre-existing products of the firm. This last story is consistent with the significant positive effect of advisory employees on future changes in number of mutual funds managed by the firm.

We perform several additional tests to dig deeper into the relationship between advisory employees and asset flows. We separately examine fund flows into different mutual fund classes, based on their primary distribution channel: institutional, broker-sold, and direct-sold. We find that the positive effects of advisory employees on flows are strongest for the institutional channel, fund classes that typically have very high minimum investment amounts. On the one hand, this is not surprising, since these are the very clients that typically get the most direct attention from the firm's investment management professionals and are also the most likely to know the size and

organization of the firm and invest based on it. On the other hand, these clients are also the most sophisticated investors, so it is surprising that they would choose to invest based on a firm characteristic which does not seem to be associated with better future performance.

In our final test, we examine whether firms with larger advisory teams operate portfolios that bear the hallmarks of active management. Previous research has shown that many investment managers are closet-indexers, and that this behavior is associated with inferior performance (e.g., Cremers and Petajisto, 2009; Petajisto, 2013). In a striking example of the "too many cooks in the kitchen" problem, we find that hiring more advisory employees is associated with a lower active share, a lower tracking error relative to the fund's Lipper style class, and a more diversified portfolio with more holdings. This result is consistent with the (lack of) performance results and suggests that larger research teams do not coalesce on a set of their "best" research ideas that might increase returns.

This paper is broadly related to the recent literature on human capital in the investment management industry, including Berk, Binsbergen, and Liu (2014) and Agarwal and Ma (2012), who show that asset management firms create value by learning about the skill level of their employees and then optimally allocating them to manage funds. Other papers have looked at the role that asset management teams, their size and diversity, play in generating performance. Recently, Patel and Sarkissian (2015) found that team-managed mutual funds outperform single-managed funds, while earlier papers have found more ambigous effects on performance (e.g., Baer, Kempf, and Ruenzi (2011), Bliss, Potter, and Schwarz (2008), Prather and Middleton (2002)). However, each of these papers focused on the number of named (in fund filings) managers, and there have been no studies, to our knowledge, of the unobserved advisory employees who are also involved in managing and marketing the funds. Our work is also related to Massa, Reuter, and

Zitzewitz (2010) who explain the secular trend toward larger teams and anonymous managers by the firms' incentives to reduce the bargaining power of their managers who have increased outside options in the age of hedge funds.

Another related strain of literature focuses on how mutual fund firms (families) compete for assets through differentiation and how this affects their incentives and performance. Massa (2003) and Del Guercio, Reuter, and Tkac (2010) argue that, due to investor heterogeneity, firms can compete along dimensions other than performance, leading to differing investments in client advisory services versus research and portfolio management. Our results complement those findings by showing that firm investments in human capital are more important in attracting institutional investors that care more about advisory services than improving portfolio performance.

The rest of the paper is organized as follows. Section 2 describes the data sources and methodology. Section 3 presents the results on performance. Section 4 follows with results on assets flows. Section 5 describes how active management is related to the number of advisor employees. Section 6 concludes.

2. Data and methodology

The main data source for this paper comes from an archive of annual filings of Form ADV which was made available in response to a Freedom of Information Act (FOIA) request[2] to the Securities and Exchange Commission (SEC). This dataset includes all forms filed after 2000, the year in which the SEC switched to electronic filing. There is a public version of this dataset, the Historical

[2] The FOIA request was made by William Beggs (University of Arizona) who shared with us the data that he received from the SEC.

Archive of Investment Adviser Reports[3], which provides monthly information from each investment advisor's most recent Form ADV filing, starting in June 2006 and up to the current month. Investment advisory firms file Form ADV when they register with the Securities and Exchange Commission (SEC), and must file annual updating amendments within 90 days after the end of their fiscal year[4]. The form includes information about the advisory firm's assets, clienteles, fee structure, and disciplinary actions due to improper behavior. In response to the passage of H.R. 4173, the Dodd–Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank), in 2010, the SEC amended Form ADV and made changes to the size of institutions that needed to file it.

Our main variable of interest for this paper comes from Items 5A and 5B on Form ADV. Item 5.A. reads as follows: "Approximately how many employees do you have? Include full- and part-time employees but do not include any clerical workers." Prior to 2011, filers chose one out of seven possible answers (1-5, 6-10, 11-50, 51-250, 501-1000, More than 1000; If more than 1000, how many, round to the nearest thousand), while after the amendment to the form in 2011, advisory firms had to provide an actual number of employees in answering this question. The same ranges (as well as a choice of 0 employees) and form change in 2011 was made to Item 5.B.(1), which asks "Approximately how many of the employees reported in 5.A. perform investment advisory functions (including research)?" We use the ranges (which we define with an integer from 0 to 7) in order to take advantage of the longer time series, but in unreported results confirm that our results are nearly identical when we use natural logarithm of the employees (when that variable is available after 2011).

[3] This information is available at: https://www.sec.gov/help/foiadocsinvafoiahtm.html
[4] After the passage of Dodd-Frank, only investment advisors with more than $100 million in regulatory assets must be registered with the SEC and file Form ADV.

The main variables drawn from annual updates of Form ADV include the range (and actual number after 2011) of employees and advisory employees, public/private status of firm or firm's parent company, regulatory assets under management, number of accounts managed, the percentage of clients attributed to different clientele groups (reported in ranges for each clientele). These clienteles include: Individuals (other than high net worth individuals), High net worth individuals, Investment companies (mostly mutual funds), Pooled investment vehicles (other than investment companies), and multiple other categories such as banks, charities, pension funds, governments, insurance companies, corporations, etc. We also use the zip code of the advisory firm's main office to calculate the population of the metropolitan area in which the firm is located and the SEC filing number (which starts with "801-") for matching the Form ADV data to other databases. For all tests, we drop firms with less than $100 million in assets under management since filing requirements for these firms are ambiguous and changed throughout the sample period.

2.1. Advisory firm characteristics

We use name and address to match the Investment Adviser Reports dataset to S&P Capital IQ, which provides information on parent company, type of investment firm ("Hedge Fund Manager", "PE/VC", "Family Office/Family Trust", "Traditional Investment Manager"), as well as a short description of the nature of the advisory firm and various asset classes that it is managing. We are able to match 59.8% of observations to S&P Capital IQ, which has much better coverage of large investment firms than small ones. For instance, we are able to match 87.7% of firms with more than $10 billion in assets under management, and only 50.0% of firms with less than $1 billion in assets.

We use text searches of the blurb to define dummy variables for the types of asset classes that are managed: *US Public Equity*, *International Public Equity*, *Private Equity*, *Fixed Income*, and *Alternative Assets*. Because the S&P Capital IQ blurbs have different degrees of specificity on other variables such as strategies (e.g., value vs. growth, smallcap vs. largecap), we instead use the institutional holdings data to define these measures.

2.2. Institutional quarterly holdings

Asset managers exercising discretion over at least $100 million in Section 13(f) assets (mostly U.S. public equity) must file Form 13F each quarter outlining their holdings of these assets. We download holding data from Thomson Reuters and collect some data (such as address) directly from the SEC EDGAR website and match them to our dataset using firm name and address. We obtain matches for 24.3% of our Investment Adviser dataset observations and for more than 70% of the institutional investors that file form 13F (the unmatched 13F filers are banks, trusts, insurance companies, and pension funds). We define the variable *% of Advisor Assets on 13F* as the ratio of assets reported on Form 13F to the total advisory assets reported on Form ADV. The latter also include fixed income assets, international equity, private equity, and alternative assets such as real estate, so this ratio is generally less than one. We use 13F holdings to generate quarterly holdings returns (as well as characteristic-adjusted holdings returns as in Daniel, Grinblatt, Titman, and Wermers, 1997), which are the returns of a portfolio of the 13F assets in the quarter following the report date. We also the holdings data to define the firm's size tilt (*Average SIZEq of 13F Holdings*), value tilt (*Average BOOKq of 13F Holdings*), and momentum tilt (*Average MOMq of 13F Holdings*)

2.3. Mutual fund data

The main data sources for mutual funds are the CRSP Survivor-Bias-Free US Mutual Fund Database (CRSP MF) and annual Morningstar Principia CDs. We also download Form N-SAR (semiannual report for registered investment companies) and merge funds to our sample of advisors using the SEC filing number. Data on managers comes from Morningstar. Morningstar also provides biographical information on each manager, which we use to connect managers to the advisory firm that employs them. Approximately 10% funds are run by portfolio managers from multiple unaffiliated advisory firms (usually as subadvisors), and we drop these funds from our sample since we are not able to attribute their flows or performance to one particular asset management firm. The data on returns, flows, and other fund characteristics such as fund size, age, expense ratio, and Lipper class (fund style) are from CRSP MF.

Monthly fund flows are defined as assets at the end of month minus the product of last month's assets and one plus the fund's monthly returns (Sirri and Tufano, 1998). We define *Berk-Binsbergen Alpha* and *Berk-Binsbergen (BB) Value Added* by regressing gross fund returns on the returns from eleven Vanguard index funds and using the coefficients to calculate the residual in each month (Berk and Binsbergen, 2015). *Gross 4-Factor Alpha* is the monthly alpha from the four-factor model with the market, size, value, and momentum factors. Factor loadings for calculating alpha are calculated from the prior year of daily net returns. We also collect mutual fund stock holdings from CRSP MF and use them (and cash balances from CRSP MF) to define the *Holdings Returns* and *Return Gap* for each fund, as in Kacperczyk, Sialm, and Zheng (2008). *Active Share* for each fund is defined as the total deviation in holdings weights from the closest of nineteen Russell, S&P, and Wilshire indexes. (Cremers and Petajisto, 2009). *Tracking Error* for each fund is defined as the standard deviation (across a calendar year) of the daily return of the fund relative to the average return of the Lipper class to which the fund belongs.

2.4. Other variables

Data on mutual fund classes comes from Strategic Insight, which classifies them into direct-sold, broker-sold, and institutional classes. Direct-sold classes are available to do-it-yourself investors, broker-sold investors can only be purchased through a broker and usually have loads in order to compensate the broker, and institutional classes are only available to institutional investors or high net worth clients. For each mutual fund, we sum up across fund classes in each of three categories and then calculate fund flows to each category using the same formula as total flows to the fund. Many funds do not offer all three categories of fund classes and any missing categories' flows are not included in the corresponding regressions.

We collect additional data on the number and titles of advisory employees directly from their websites. Many tiny advisory firms don't have websites or don't list their employees on their websites, while very large advisory firms have too many employees and only provide information on top executives or division heads. We were able to obtain names and official titles, as of November 2016, from 59 websites of firms that predominantly run mutual funds. We use this information to classify advisory employees into three categories: executives (CEO, Chief Investment Officer, Managing Director, Head of Division/Head of Research), portfolio managers, and analyst/associate.

2.5. Descriptive statistics

Table 1 presents descriptive statistics on the sample of registered investment advisors. Panel A of Table 1 shows that the number of RIAs nearly doubled from about 6000 in 2000 to about 12000 in 2016. Their total assets under management rose from $19.4 trillion in 2000 to $69.7

trillion in 2016. There is some double-counting (and even occasional triple-counting) of assets because an investment advisory firm, whose individual client invests $100 in a Fidelity fund, and Fidelity Investments, which manages the portfolio of that Fidelity fund, would each record the $100 in their regulatory assets under management. During the sample period, investment advisory firms have employed anywhere from one-half to three-quarters of a million people (not counting clerical staff), with approximately half of those providing advisory and research functions, and the other half providing other functions such as executive, sales, accounting, legal, trading, compliance, and technology.

Panel B shows the breakdown of investment advisory firms by metropolitan area. New York is the most popular location for the asset management industry, with 18.2% of firms, 34.2% of advisory employees, and 29.6% of assets. San Francisco is the second-largest location in terms of the number of firms, while Boston with its concentration of large firms, has the second-most assets at 11.5%. The Philadelphia metropolitan area is home to Vanguard and several Blackrock subsidiaries, huge asset management firms that make its percentage of assets exceed its percentage of firms. Interestingly, almost 20% of advisors are located in small metro areas (with fewer than 1 million people) although they manage only 7.4% of assets.

Panel C shows the (time-series average of) distribution of firms that are in each of 6 ranges for 13 non-overlapping clienteles. A majority of firms have at least some low-wealth and high-net-worth individuals, and their share is nearly uniformly distributed from 0% to 100%. 16.5% of firms manage investment companies (mutual funds) but only 3.9% of firms focus on managing them. For pooled investment vehicles (hedge funds and private equity), 32.1% of asset management firms manage some and 14.5% of firms concentrate on this clientele. A large percentage of companies manage portfolios for charities, pension plans, or corporations, but each typically make

up less than 10% of total clients. The remaining six clientele groups (banks, governments, business development companies, other investment advisors, insurance companies, and other) have very small shares of the investment management pie.

Panel D shows the percentage of all assets and all advisory employees associated with each of the thirteen clientele categories. We impute assets and employees to each clientele using a percentage-based method, by which assets and employees are considered to be distributed based on the percentage of clients (using median values from each range). For instance, suppose a firm has 50 employees and $5 billion under management and an estimated 60% of its clients are investment companies, 20% are high net worth individuals, and 20% are pension funds. We would impute 30 employees and $3 billion to investment companies, 10 employees and $1 billion to high net worth individuals, and 10 employees and $1 billion to pension funds.

Investment companies make up the most assets of any clientele (about 23%) but have low advisory employment (5.3%). Pooled investment vehicles and pension plans are two additional clienteles that have a significantly bigger share of assets than advisory employees. On the other hand, firms that service non-high-net-worth individuals have the most employees (45.4%), but less than 13% of assets. Thus, individual clients, seem to be the most labor-intensive clientele. We will further explore the labor-intensity of different clienteles in the context of a regression in the next section of the paper.

In Table 2, we report the (time-series average) distribution of firms in each of eight employee ranges, as well as summary statistics on the sample of registered investment advisors. We drop all firms with less than $100 million in assets. In Panel A of Table 2, we present the percentage of firms that have their total number of non-clerical employees (Column (1)) and investment professionals (Column (2)) in each group. Most firms have either 1 to 5 employees, 6

to 10 employees, or 11 to 50 employees, with very firms employing more than 50 people. Advisory employees are even more concentrated in the lower ranges, with almost half of firms having five or fewer investment professional employees. *Employees advisory (range)*, an integer from 0 to 7 corresponding to each of the ranges in this Panel will be the main explanatory variable in this paper.

In Panel B, we report time-series averages of summary statistics for the variables we are using throughout the paper. The average firm has $6.5 billion in assets, but the median firm only has $461 million in assets. This variable and many others related to scale are both positively skewed and we use the natural logarithms of these variables in regressions so that outliers do not drive the results. Only 15% of firms have a publicly traded parent company, consistent with most advisory firms being fairly small with revenues in the seven figures. The clientele summary statistics are similar to those in Panel D of Table 1, and we see that the average firm has 4 different clienteles. In the breakdown of asset class managed, 84% of advisory firms manage U.S. public stock, about half invest in international equities, and about the same percentage manage investments in fixed income. Only 17% hold alternative assets and 8% manage private equity or venture capital funds. The average annual change in log assets under management during our sample period is 4.8% while the average annual change in log number of account is 6.3%. Of the firms that file Form 13F, on average, 54% of their Form ADV regulatory assets under management are reported as holdings on Form 13F.

3. Main results

3.1. Determinants of number of advisory employees

Next, we examine the factors that determine how many advisory employees will be employed by different investment advisory firms. We regress *Advisory Employees (range)* on measures of scale, other firm characteristics, clienteles, and managed asset classes, and report the results in Panel A of Table 3. Two measures of scale, *Log Assets Per Account* and *Log Accounts* are the most important predictor of human capital usage, with a positive and statistically significant coefficient. Advisory firms that have more clients who are non-high-net-worth individuals use more labor than firms which advise mutual funds, high net worth individuals, pension funds, and charitable organizations. Our hypothesis is that these clients are not financially sophisticated so they need a lot of financial advice and wealth management services beyond just portfolio construction. Firms that managed pooled investment vehicles also require more human capital (see below for more in-depth analysis of this result in Column (5) of this panel). On the other hand, firms that manage assets of institutional clients, high net worth individuals, hedge funds, and mutual funds are less labor intensive. Other characteristics that are associated with greater use of human capital include firms that have more clienteles, publicly-traded firms (or subsidiaries), and firms headquartered in larger metropolitan areas.

In Column (2) of Panel A, we also include dummy variables for each of four asset classes that is managed by the investment advisor (these are not mutually exclusive as many firms manage more than one asset class). Managing additional non-traditional asset classes is generally associated with more advisory employees, suggesting that firms that specialize in less efficient or transparent markets utilize more human capital. In Column (3), we restrict the sample to large advisory firms, those with more than $10 billion in assets under management, to check whether the results are entirely driven by small firms that make up the vast majority of the sample. The

results for this restricted sample are very similar to those for the entire sample in Columns (1) and (2).

In Column (4) of Panel A, we also add *Advisory Employees (range), residual lag5*, which is the instrument in IV regressions that we run throughout the paper. The t-statistic on the instrument in this first-stage regression is 30.58 indicating that it we do not have to worry about a weak instrument issue (whether this instrument satisfies the exclusion restriction is another question). In Column (5), we restrict the sample to firms that have pooled investment vehicles including investment companies making up more than 75% of their client base, and add dummy variables for *Hedge Fund Manager* and *PE/VC Manager* (from S&P Capital IQ). Private Equity/Venture Capital managers are the most labor-intensive while hedge fund management companies are only slightly more labor-intensive than mutual fund management companies. This finding is very intuitive since PE/VC companies not only search out opportunities for investment (as hedge funds and mutual funds also do) but also need a different type of human capital to oversee and provide management advice to maximize value prior to their exit from their holdings.

In Panel B of Table 3, we use data from Form 13F U.S. equity holdings to examine what styles within domestic equity require more human capital. We define three variables: *Average SIZEq of 13F Holdings, Average BTMq of 13F Holdings,* and *Average MOMq of 13F Holdings,* which measure the value-weighted average size, book-to-market, and momentum quintiles of 13F Holdings. We regress *Advisory Employees (range)* on these measures of holdings tilt, as well as firm controls, and measures of past characteristic-adjusted returns and report the results in Panel B. We find negative and significant coefficients on the size and book-to-market weights, and a positive coefficient in Columns (1) through (3) on the momentum weights. Holding more small-

cap stocks, more growth stocks, and more momentum stocks, is associated with employing more human capital in the cross-section.

One explanation for this result is that these styles are more difficult to collect information on and understand and thus require more expertise. Another possibility that we investigate further is that small-cap, growth, and momentum styles are less popular than large-cap, value, and contrarian styles so tilting to those styles is proxying for managing more styles which is itself associated with more advisory employees. We test this explanation in Column (5), where we restrict the sample to mutual fund advisory firms, and control for the (natural logarithm) of the number of styles that they manage. The magnitude of the coefficient shrinks somewhat for the size-tilt of the holdings and completely goes away for the momentum-tilt of the holdings, but actually becomes stronger for the value-tilt. This result suggests that the correlation between advisory employees and size and value tilt of holdings is not simply a proxy for managing more styles.

Overall, the results in Table 3 suggest that heterogeneous demand for human capital by RIAs is explained by different needs for different clienteles and different needs for different asset classes and strategies.

3.2. Hand-collected website data on advisory employees

In order to dig deeper into the composition and responsibilities of advisory employees, we hand-collect data on 59 investment advisory firms whose main clientele is mutual funds and merge this data with the information from Form ADV. We report means and median statistics for these hand-collected data in Table 4. In the top three rows, we report summary statistics for number of advisory employees from both the website and Form ADV as well as the ratio of the two measures.

It is comforting to find that the counts from the website are very similar to those reported on Form ADV, and the average ratio of the two is 88%, with a median value of 97%. We use the official title of each advisory employee to classify them into three groups: analysts, portfolio managers, and executives. We classify each individual based on their highest title, so if someone is both a portfolio manager and Chief Investment Officer, we classify them as an executive, while an individual who is an analyst and portfolio manager is classified as a portfolio manager. We compare the count of portfolio managers and executives to the count of different named portfolio managers (PMs) in the Morningstar database.

We find that the two measures are again similar and the ratio of Morningstar PMs to the named portfolio managers and executives from the website is 82% for the average firm and 86% for the median firm. Finally, we show summary statistics for the three classifications of advisory employees identified on the websites. On average, 33% are analysts, 37% are portfolio managers, and 31% are executives (rounding explains why it adds up to 101%). Overall, this hand-collected sample provides us with a deeper understanding of the roles and official titles of investment professionals working at these firms and how they are related to the named portfolio managers that are typically used in mutual fund studies.

3.3. Advisory employees and security returns

In this section, we examine the relation between advisory employees and returns of securities or funds managed by the firm. In this and the following section (for assets), we run the tests at the advisory firm level and also for mutual funds which we then aggregate (using weights for fund assets) to the firm level. Table 5 reports summary statistics for the sample of mutual funds that we use for the mutual fund tests. During our sample period from January 2001 through

December 2016, the average advisor-aggregated monthly gross return was 0.6% and average monthly Berk-Binsbergen gross alpha was also positive at 0.026%. The average change in log fund family assets from fund flows was 5.6% and the average change in log number of funds was 3.2%. Other mutual fund characteristics such as fund size, expense ratio and fund age are also reported in Table 5 and are similar to previous studies.

We run regressions of holdings-based returns on *Advisory employees (range)* and firm-level controls and report the results in Table 6. In Columns (1) through (3), the dependent variable is the (value-weighted) average returns from buying and holding for one quarter the securities from the most recent quarter filings (averaged over the four quarters over the following year). In Columns (4) through (6) of Panel A, we adjust for differences in style by using characteristic-adjusted quarterly holdings returns (Daniel, Grinblatt, Titman, and Wermers, 1997). In Columns (2) and (5), we restrict the sample to investment management firms where at least 50% of their assets are on Form 13F, in order to ensure that results are not affected by firms that have very few investments in domestic equities. In Columns (3) and (6), we use IV regressions with fifth-year lag of the residual of *Advisory employees (range)* in order to ensure that any results are not driven by anticipation of future performance or other reverse causal channels. All specifications include year fixed effects and standard errors are clustered by both year and advisory firm.

Across all six specifications, we are unable to reject the null hypothesis that there is no association between advisory employees and holdings-based returns. Of course, the lack of a statistically significant effect does not imply a zero effect, but we do not have statistical power to say whether more investment in human capital leads to better performance. Another caveat is that we are imputing firm-level returns based on quarterly holdings so any profitable (or unprofitable trades) that happen in the middle of the quarter are not captured by our measure.

One way to avoid this problem is to explore the effect of advisory employees on mutual funds where firms report the actual returns of the funds rather than their holdings. The disadvantage of focusing on mutual funds is that many firms doesn't offer mutual funds which reduces the sample size, and mutual funds returns might not be very representative of other investments (such as hedge funds or separate accounts) managed by a particular asset management firm. We now turn to regressions of (asset-weighted) average mutual fund performance measures on *Advisory employees (range)* and firm-level controls and report the results in Table 7.

The dependent variables in Table 7 are six different monthly performance measures from mutual fund disclosures. These measures are calculated at the fund level and then aggregated to the firm level by asset-weighted averaging. Several of these measures are residuals from fund-level regressions on fund characteristics and Lipper style-by-month fixed effects. Column (1) of each panel uses the residual of gross fund returns (reported returns with expenses added back in). Column (2) uses gross alpha relative to Vanguard benchmarks (Berk and Binsbergen, 2015). Column (3) uses (dollar) value-added relative to Vanguard benchmarks (Berk and Binsbergen, 2015) where the dollar amounts are rescaled by taking their natural logarithm (keeping the sign the same) to reduce effects of outliers. Column (4) uses gross alpha from the Fama-French 4-Factor model (Carhart, 1997). Column (5) uses the residual of holdings-based returns. Column (6) uses the residual of the return gap between reported returns and (cash-adjusted) holdings-based returns (Kacperczyk, Sialm, and Zheng, 2008). Panel A uses OLS estimation while Panel B uses IV regressions, and all specifications include month fixed effects.

The results for fund-level performance are consistent with those we found at the advisory level from Table 7. Across all twelve specifications (in both panels), there are seven positive point estimates on *Advisory employees (range)* and five negative point estimates and only two

coefficients are significant, one in each direction. Again, we are not sure that firms with more advisory employees don't deliver better performance but lack the statistical power to reject the null hypothesis. In the next section of the paper, we examine whether they add value to the firm through a different channel, by allowing the firm attract more assets and therefore earn more in fees.

4. Advisory employees and asset flows

In this section, we examine whether the presence of more advisory employees affects the firm's ability to attract assets, allow the advisor to collect more in fees. In Panel A of Table 8, the dependent variable is next year's natural logarithm of assets minus current natural logarithm of assets. We are not able to remove the effect of returns on this change in assets because we don't know returns at the advisory firm level. However, in Columns (4) and (6), where the sample consists of advisory firms that file 13F reports, we control for the *contemporaneous* holdings-based returns. In Column (2), we restrict the sample to firms with at least $1 billion in assets, and in Column (3), we restrict it to firms with pooled investment vehicles (including investment companies) making up at least 75% of their client base. In Columns (4) and (6), we also control for past three years of characteristic-adjusted holdings returns. Finally, in Columns (5) and (6), we use IV regressions in order to rule out the possibility that quantity of advisory employees is reacting to expected future changes in assets under management. All specifications also include year fixed effects.

Across all six specifications, there is a positive and statistically significant association between advisory employees and next year's change in log assets. In terms of economic magnitude, moving up to the next advisory employees range, which is a one point movement in

our explanatory variable, roughly corresponds to doubling the number of advisory employees which is associated with anywhere from a 2.6% to 5.1% increase in next year's asset growth. An examination of other significant determinants of asset changes in Panel A of Table 8 shows that advisory firms with more accounts and assets per account grew slower (in percentage terms). We do not have information on the age of the advisory firms (years since they were founded) but smaller firms are probably also younger and therefore still have not fully accessed all the investors that they could potentially attract. Past characteristic-adjusted returns are also positively related to future asset changes, consistent with the well-documented return-chasing phenomena (Sirri and Tufano, 1998).

There are two ways in which firms can attract more assets under management. They can increase the number of clients or they can increase the amount of money that each client invests with the firm. In Panel B of Table 8, we decompose assets into accounts and assets per account and then regress log changes in these variables on our explanatory variable of interest and our standard controls. In Columns (1) through (3), the dependent variable is next year's natural logarithm of accounts minus the current natural logarithm of accounts, while in Columns (4) through (6), the dependent variable is next year's natural logarithm of assets per account minus the current natural logarithm of assets per account. Two specifications include only firms that concentrated on managing pooled investment vehicles including investment companies (Columns (1) and (4)), controls for past three years of characteristic-adjusted returns (Columns (2) and (5)) and IV regressions (Columns (3) and (6)). All specifications include year fixed effects.

The main takeaway from Panel B is that the positive effect of advisory employees on asset flows is being driven entirely by having more new accounts (corresponding to more clients) rather than more assets per account. This is consistent with the earlier finding that more advisory

employees are not able to generate higher returns on assets which would have meant bigger client portfolios. It also implies that advisory employees are unable to affect how much of their wealth a typical client invests with a particular advisory firm. At the pooled investment vehicles level, where an account corresponds to a fund, this result suggests that having more advisory employees is associated with more new funds rather than each existing fund attracting more assets. We investigate this further when we examine mutual fund assets changes and flows in Table 9.

In Panel C of Table 8, we examine the dynamics of how past changes in the residual of our explanatory variable, as well as lagged changed in log assets, are related to next year's change in log assets. Consistent with the results of the IV regressions, the effect of advisory employees on future changes in assets, accounts, and assets per account is not entirely due to recent changes in advisory employees but seems to be uniformly affected by the prior five years' changes in advisory employees as well as the level of this variable five years earlier. This pattern does not suggest anticipatory hiring in response to future expected changes in assets. When we focus on the dynamic between past changes in log assets and next year's change in this variable, there doesn't seem to be any obvious effects. An increase in assets in the prior few years leads to more new accounts but a decrease in assets per account in the following year. This might indicate that assets are simply divided into more accounts or new funds (or strategies or separate accounts) are opened that have very few assets and thus lower the average assets per account.

Next, we examine how mutual fund assets (and flows) are affected by advisory employees. For Table 9, we have six different measures of new assets and accounts. As in Table 7, these measures are calculated at the fund level and then aggregated to the firm level. In Column (1) of Panel A, the dependent variable is next year's change in the natural logarithm of mutual fund assets. For Columns (2) and (3), we decompose mutual fund assets into number of mutual funds

and average assets per fund, and calculate the next year's change in the log transformation of these variables. In Column (4), the dependent variable is next year's change in the natural logarithm of the number of different Lipper style classes among all funds managed by the advisory firm. For Column (5), we calculate monthly flows (removing the effect of returns) for each fund, add them up across all funds, and then calculate *Δ Log Assets with Flows* as the logarithm of this year's mutual fund assets plus next year's total flows minus the logarithm of this year's mutual fund assets (without the flows). Finally, for Column (6), we calculate residual flows (after regressing flows on past performance, fund characteristics, and Lipper class style-by-time fixed effects) for each fund, and use these residual flows to calculate *Δ Log Assets w/ Flows Residual* as we calculate *Δ Log Assets with Flows* with flows for Column (5). Each specification includes, as a control, the current level of the variable for which the regressand is measuring next year's change, as well as year fixed effects.

Consistent with our results in Table 8, we find that more advisory employees are associated with more mutual fund assets and more new funds and new fund styles. Unlike the advisory firm-level results in Table 8, there is also a significant effect of *Advisory Employees, range* on assets per fund and residual fund flows. This indicates that attracting more assets is not entirely driven by the opening of new funds or being hired to manage or as a sub-adviser on existing funds, but is also partially driven by the ability to attract investors to existing funds.

An interesting question we can answer here is whether the benefits of fund flows are similar to the costs of paying more employees. We use the 4.9% coefficient in Column (6) of Panel A. The median mutual fund advisory firm in our sample (with $3.5 billion in assets and 10 advisory employees) would increase next year's assets in a typical fund from residual flows by about 5 percentage points or $175 million from doubling the staff to 20 advisory employees. This would

lead to a $1.75 million in increase in annual fees (at a typical 1% management fee), assuming the assets remain with the firm, and would be in the same ballpark as the annual compensation costs for the 10 new employees. This back-of-the envelope calculation suggests that companies are behaving rationally and setting marginal benefits (extra fees) to marginal costs (extra salary) when making employment decisions.

In Panel B of Table 9 we separately examine changes in assets from flows (and residual flows) to different fund classes based on the primary distribution channel for that fund class. Using data from Strategic Insight, we classify mutual fund classes into Institutional, Broker/Advisor-Sold, and Direct-Sold. The strongest effect of *Advisory Employees, range* on flows is for Institutional classes, where the coefficient is about 8% and is statistically significant. For flows to direct-sold classes and broker/advisor-sold classes, the point estimates are much smaller and none of them are significant at the 5% level. This result suggests that wealth and institutional clients are the most likely to be impressed or attracted by firms that have large research teams.

5. Advisory employees and active management

One way to learn why investment management firms employ armies of investment professionals is to look at how actively they are managing their portfolios. Prior research has shown more activity is associated with better performance (Cremers and Petajisto, 2009; Pastor, Stambaugh, and Taylor, 2014), and if the job of the employees is to market the fund, they should be spending less time making active bets, and instead allocate their time toward marketing. In Table 10, we examine the effect of *Advisory Employees, range* on three measures of active portfolio management: active share, tracking error, and diversification level (log number of holdings). We regress these annual measures on fund controls and Lipper class-by-year fixed

effects, and then take the (asset-weighted) average of the residuals across all funds managed by the advisory firm. We then regress these measures on our explanatory variable of interest as well as firm controls and year fixed effects. Consistent with the marketing story, larger advisory teams are associated with closet indexing: lower active share, lower tracking error, and more diversified portfolios. Overall, these findings suggest that firms that are not able to generate positive alpha are closet indexing and using their investment professionals to conduct marketing and client services to keep assets in the fund.

6. Conclusion

One view of the asset management industry is that it is all about marketing products and attracting assets away from your competitors, since the total sum of excess returns is fixed, and there is little value, especially after fees, from active management. Another view, supported by Berk and Binsbergen (2015) is that investment management actually do create value and that this value creation is persistent. In this paper, we examine how asset management firm investment in human capital generates value. We don't find evidence of a connection between human capital and value added through superior performance, but we do find value added in helping compete against other asset managers for assets under management.

With hundreds of thousands of people working in the United States investment management/advisory roles, it is interesting to speculate whether part (or the entirety) of their role is to be window-dressing for potential clients looking to invest in the company, or to help in sales. Since financial markets are highly efficient, it makes sense that the valuable time of employees at asset management firms is used to attract assets rather than trying to uncover information that would allow the firm to improve its performance by one or two basis points. Given the high noise-

to-signal ratio in investment returns, these few basis points would probably not be recognized by investors anyway and would not have a significant beneficial effect on the investment management firm revenues and profits.

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Table 1: Distribution of SEC-registered investment advisory firms, by year, location, and clientele

Table 1 presents summary statistics for SEC-registered investment advisory firms that file Form ADV annually, their distribution across metropolitan areas, and their clientele. For each year from 2000 through 2016, Panel A displays the total number of registered advisory firms, their total assets (in trillions of dollars), their total number of employees (excluding clerical), and their total number of employees who perform investment advisory functions (including research). The total number of employees and advisory employees prior to 2011 is imputed based on median value of ranges as filled out on Form ADV. Panel B shows time-series averages of the percentage of advisory firms, percentage of employees, and percentage of assets under management with addresses in each of the top 10 (based on number of advisors) US metropolitan areas, as well as the percentage at tiny MSAs, defined as having population of less than 1 million people. Panel C shows time-series average of the distribution of advisory firms that have percentage of their clients in each range, for 13 clientele classes. The ranges and clienteles are from Form ADV. For example, 12.7% for "Individuals" in range "<=10%" indicates that 12.7% of advisory firms in a typical year have more than zero but less than 10% (non-high-net-worth) individual clients. Panel D shows the time-series average of the percentage of assets and advisory employees associated with each of the 13 clientele classes. For each firm-year, assets (advisory employees) associated with each clientele are calculated for each by multiplying firm assets (imputed advisory employees) by median value of the range of clients in that clientele, and these values are then added up for all firms.

Panel A: Advisory company - summary statistics by year

	No. of Advisors	Assets ($trillions)	Total Employees	Advisory Employees
Year	(1)	(2)	(3)	(4)
2000	6,025	19.4	*558,722*	*210,507*
2001	5,882	20.5	*557,319*	*207,541*
2002	6,528	20.1	*536,646*	*211,067*
2003	6,979	23.1	*550,097*	*221,404*
2004	7,587	26.5	*591,117*	*239,999*
2005	9,462	31.3	*621,820*	*270,718*
2006	9,390	36.8	*674,978*	*289,720*
2007	10,017	43.7	*735,341*	*309,219*
2008	10,170	36.2	*762,709*	*333,162*
2009	10,481	45.8	*692,103*	*315,151*
2010	10,699	43.2	*695,121*	*336,599*
2011	12,157	48.8	719,271	335,465
2012	9,861	51.0	637,249	318,857
2013	10,447	68.9	677,337	346,628
2014	10,988	63.9	693,642	359,360
2015	11,315	67.0	723,079	366,304
2016	11,379	69.7	717,598	380,021

Panel B: Advisory company - summary statistics by metropolitan area

	% of Firms	% of Adv. Employees	% of AUM
Top Metropolitan Areas	(1)	(2)	(3)
New York-Newark	18.2%	34.2%	29.6%
San Francisco-Oakland	5.3%	2.1%	6.0%
Boston	5.2%	7.9%	13.7%
Los Angeles	5.0%	2.9%	8.9%
Chicago	4.6%	3.3%	5.5%
Philadelphia	3.3%	1.9%	7.0%
Dallas-Ft. Worth	2.6%	1.9%	1.4%
Washington DC	2.6%	1.0%	1.0%
Atlanta	2.0%	1.4%	1.5%

Minneapolis-St. Paul	1.9%	8.4%	2.0%
MSAs < 1mil people	19.7%	10.0%	7.4%

Panel C: Distribution of advisors across clienteles, for each of 13 clienteles identified on Form ADV

Clientele Type	0% (1)	<=10% (2)	11%-25% (3)	26%-50% (4)	51%-75% (5)	>75% (6)
Individuals (Non-HNW)	38.8%	12.7%	9.9%	13.5%	12.6%	12.6%
High net worth individuals	29.4%	14.3%	12.7%	16.8%	13.6%	13.2%
Investment companies (MFs)	83.5%	8.4%	2.0%	1.5%	0.7%	3.9%
Pooled inv. vehicles (HFs/PE)	67.9%	10.3%	2.6%	2.8%	2.0%	14.5%
Banking or thrift institutions	91.6%	6.8%	0.7%	0.4%	0.1%	0.4%
Pension and profit sharing plans	44.1%	38.6%	9.1%	4.7%	1.7%	1.9%
Charitable organizations	56.8%	37.4%	4.2%	1.2%	0.2%	0.2%
Corporations or other businesses	52.1%	39.2%	5.3%	2.0%	0.6%	0.8%
State or municipal government	87.5%	9.0%	1.9%	0.9%	0.3%	0.5%
Business development companies	93.5%	3.7%	1.0%	0.7%	0.3%	0.7%
Other investment advisers	90.4%	5.9%	1.5%	0.9%	0.4%	0.8%
Insurance companies	90.6%	6.2%	1.4%	0.8%	0.3%	0.7%
Other	90.3%	5.7%	1.6%	1.0%	0.4%	1.1%

Panel D: Clienteles weighted by assets and advisory employees

Clientele Type	% of Assets (1)	% of Adv. Employees (2)
Individuals (Non-HNW)	12.9%	45.4%
High net worth individuals	9.4%	14.7%
Investment companies (MFs)	22.6%	5.3%
Pooled inv. vehicles (HFs/PE)	14.0%	9.9%
Banking or thrift institutions	2.7%	2.1%
Pension and profit sharing plans	13.2%	6.7%
Charitable organizations	4.2%	3.9%
Corporations or other businesses	8.7%	5.5%
State or municipal government	4.5%	2.8%
Business development companies	0.1%	0.2%
Other investment advisers	0.9%	0.5%
Insurance companies	1.7%	0.9%
Other	5.2%	2.3%

Table 2: Summary statistics on registered investment advisory firms

Table 2 presents summary statistics for measures of employment, size, clientele, holdings, and performance for the sample of registered investment advisory firms that file Form ADV. Panel A shows the time-series average of the percentage of these advisory firms that have employees (and advisory employees in Column (2)) in each of eight ranges (numbered from 0 to 7) that firms report on Form ADV. Panel B shows the total number of non-missing observations, along with the time-series averages of the mean, standard deviation, 10th percentile, median, and 90th percentile. *Advisory Employees (range #)* is the range (integer from 0 to 7) corresponding to the number of employees performing investment advisory functions (including research), while *# of Advisory Employees* is the actual number of advisory employees, a variable which was only populated after 2011. *Employees (range #)* is the range (integer from 0 to 7) for the total number of employees (excluding clerical), while *# of Employees* is the actual number of employees, a variable which was only populated after 2011. *Assets Under Management ($MIL)* is the total assets under management in millions of dollars, and *Log Assets ($MIL)* is the natural logarithm of total assets under management (in millions of dollars). *Log Accounts* is the natural logarithm of the total number of accounts under management. *Log Assets ($MIL) Per Account* is the natural logarithm of the ratio of total assets under management (in millions of dollars) to the total number of accounts under management. *Publicly Owned* is a dummy variable indicating if the parent company of the advisory firm is publicly-traded. *Log Metro Population* is the natural logarithm of the total population of the metropolitan area where the firm is located. *Individuals (non-HNW)* is the range (numbered from 1 to 6 corresponding to the Columns of Panel C of Table 1) indicating what percentage of the firm's clients are non-high-net-worth individuals. *High Net Worth Individuals* is the range (numbered from 1 to 6) indicating what percentage of the firm's clients are high net worth individuals (more than $1 million in managed assets or believed to have more than $2 million in net worth). *Investment Companies* is the range (numbered from 1 to 6) indicating what percentage of the firm's clients are investment companies: mutual funds, closed-end funds, and unit investment trusts. *Pooled Investment Vehicles* is the range (numbered from 1 to 6) indicating what percentage of the firm's clients are pooled investment vehicles other than investment companies: mostly hedge funds, private equity/venture capital funds, and real estate funds. *Number of Clienteles* is the total number of different clienteles (out of the thirteen categories in Panel C of Table 1). *US Public Equity* is a dummy variable that indicates the advisory firm manages some assets invested in United States publicly-traded equity, while *International Public Equity* indicates the firm manages some assets invested in international publicly-traded equity. *Private Equity* indicates the firm manages some assets invested in private equity. *Fixed Income* indicates the firm manages some assets invested in fixed income. *Alternative Assets* indicates the firm manages some assets invested in alternatives such as derivatives, currencies, real estate, etc. *Holdings Avg Q. Returns (t,t+1)* is the firm's average quarterly returns in the following year based on U.S. equity holdings reported on Form 13F. *Holdings Avg. CA Q. Returns (t,t+1)* is the firm's average characteristic-adjusted (as in Daniel, Grinblatt, Titman, and Wermers, 1997) quarterly returns in the following year based on U.S. equity holdings reported on Form 13F. *Δ Log Assets (t,t+1)*, *Δ Log Accounts (t,t+1)*, *Δ Log Assets Per Account (t,t+1)* are the changes in the following year in *Log Assets*, *Δ Log Accounts*, and *Log Assets Per Account*. *Advisory Employees (range), resid lag5* is the fifth-year lag of the residual from regressing *Advisory Employees (range)* on firm characteristics using the specification in Column (1) of Table 3, Panel A. *% of Advisor Assets on 13F* is the ratio of the advisory firm's 13F assets divided by its total assets under management.

Panel A: Percentage of Advisory firms in each range

	All Employees	Advisory Employees
Range Number: Range	(1)	(2)
0: 0 Employees	0.2%	0.9%
1: 1 to 5 Employees	25.4%	46.8%
2: 6 to 10 Employees	24.7%	22.5%
3: 11 to 50 Employees	34.8%	22.4%
4: 51 to 250 Employees	10.6%	5.4%
5: 250 to 500 Employees	1.8%	0.9%
6: 500 to 1000 Employees	1.2%	0.5%
7: More than 1000 Employees	1.4%	0.5%

Panel B: Summary statistics for all SEC-registered investment advisers (Assets > $100mil)						
	Obs.	**Mean**	**SD**	**p10**	**p50**	**p90**
	(1)	(2)	(3)	(4)	(5)	(6)
Size Variables						
Advisory Employees (range #)	107506	1.9	1.1	1.0	1.9	3.0
Employees (range #)	108816	2.5	1.2	1.0	2.4	4.0
# of Advisory Employees (after 2011)	47020	37	436	2	6	34
# of Employees (after 2011)	47064	72	723	3	10	71
Assets Under Management ($MIL)	108817	6458	46697	128	461	7960
Log Assets ($MIL)	108817	6.6	1.7	4.9	6.1	9.0
Log Accounts	108814	4.6	2.4	1.3	5.0	7.4
Log Assets ($MIL) Per Account	108814	1.9	2.8	-1.4	1.4	5.7
Publicly Owned	108817	0.15	0.35	0	0	0.65
Log Metro Population	102228	15.1	1.3	13.4	15.3	16.8
Clienteles (range #s)						
Individuals (Non-HNW)	108817	1.6	1.8	0	1.0	4.7
High Net Worth Individuals	108817	2.0	1.9	0	1.9	5.4
Investment Companies (MFs)	108817	0.5	1.2	0	0	1.6
Pooled Investment Vehicles (HFs/PE)	108817	1.4	2.1	0	0	5.4
Number of Clienteles	108817	4.0	2.2	1.0	3.9	6.9
Holdings Statistics						
US Public Equity (dummy)	46920	0.84	0.36	0.18	1	1
International Public Equity (dummy)	46920	0.52	0.50	0	0.82	1
PE/VC (dummy)	46920	0.08	0.26	0	0	0.35
Fixed Income (dummy)	46920	0.61	0.49	0	1	1
Alternative Assets (dummy)	46920	0.17	0.37	0	0	1
Performance Variables						
Holdings Avg Q. Returns (t,t+1)	23709	0.020	0.028	-0.005	0.018	0.047
Holdings Avg. CA Q. Returns (t,t+1)	23114	0.000	0.024	-0.018	0.000	0.019
Δ Log Assets (t,t+1)	91557	0.048	0.552	-0.259	0.061	0.407
Δ Log Accounts (t,t+1)	91554	0.063	0.590	-0.220	0.026	0.406
Δ Log Assets Per Account (t,t+1)	91554	-0.015	0.679	-0.401	0.011	0.372
Advisory Emp. (range), resid lag5	39843	-0.009	0.807	-0.842	-0.124	0.966
% of Advisor Assets on 13F	26454	0.54	0.31	0.09	0.55	0.92

Table 3: Determinants of advisory employees

Table 3 presents estimated coefficients from regressions of advisory employees on various characteristics of the investment advisory firm. The dependent variable in each regression is *Advisory Employees (range)* which is an integer (from 0 to 7) corresponding to the range of advisory employees working at the firm. The corresponding ranges for each value of this variable are shown in Panel A of Table 2. Column (1) of Panel A includes the entire sample of firms. In Column (2), we add holdings dummy variables based on the asset classes managed by the firm. Column (3) restricts the sample to large firms (more than $10 billion in assets). Column (4) again uses the entire sample but also includes the independent variable *Advisory Employees (range), resid lag5* (an instrument used throughout the paper). Column (5) restricts the sample to advisors with at least 75% of clients who are pooled investment vehicles (mostly hedge fund and private equity/venture capital management firms) and investment companies (mutual funds) and also includes dummy variables *Hedge Fund Manager* and *PE/VC Manager* for firms that specialize in managing hedge funds and private equity/venture capital, respectively. Panel B uses explanatory variables derived from Form 13F quarterly US equity holdings. Each specification includes *Average SIZEq of 13F Holdings*, *Average BTMq of 13F Holdings*, and *Average MOMq of 13F Holdings*, which measure the value-weighted average size, book-to-market, and momentum quintiles of 13F holdings of the firm. Column (2) of Panel B also includes the past three years of *Holdings Average CA Quarterly Returns*. Column (3) adds asset class dummy variables for firms that invest in US public equity, international public equity, fixed income, and alternative assets. Column (4) restricts the sample to large firms (more than $10 billion in assets), and Column (5) restricts the sample to advisory firms that manage at least some mutual funds. It also includes a control for *Log Number of Mutual Fund Styles*, the natural logarithm of the number of different Lipper Style Classes among funds managed by the advisory firm. All specifications in each panel include year fixed effects, advisor characteristics, and clientele controls. These variables are defined in detail in Table 2. T-statistics are provided in brackets with standard errors clustered by advisory firm and year. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

Panel A: Determinants of Number of Advisory Employees (range)

Dependent Variable:	Advisory Employees (range)				
	OLS	OLS	OLS	OLS	OLS
Predictive Variables	(1)	(2)	(3)	(4)	(5)
Log Assets Per Account	0.337***	0.349***	0.277***	0.329***	0.353***
	[47.23]	[44.31]	[8.38]	[45.95]	[27.80]
Log Accounts	0.483***	0.449***	0.410***	0.450***	0.390***
	[44.55]	[37.92]	[10.68]	[46.57]	[21.74]
Publicly Owned	0.365***	0.080**	0.014	0.218***	-0.104**
	[11.57]	[2.40]	[0.26]	[7.31]	[2.09]
Individuals (Non-HNW) (range)	0.011*	-0.006	-0.027	-0.004	-0.015
	[1.69]	[0.69]	[1.05]	[0.45]	[0.51]
High Net Worth Individuals (range)	-0.085***	-0.050***	-0.068***	-0.059***	-0.088***
	[12.94]	[5.35]	[2.58]	[7.26]	[3.24]
Investment Companies (MFs) (range)	-0.023**	-0.017*	-0.073***	-0.007	-0.043***
	[2.39]	[1.76]	[3.18]	[0.84]	[2.60]
Pooled Inv. Vehicles (HFs/PE) (range)	0.081***	0.065***	0.076***	0.064***	0.005
	[17.12]	[7.65]	[3.70]	[8.50]	[0.34]
Banking or thrift institutions (range)	-0.012	0.037**	0.088**	0.014	-0.009
	[0.82]	[2.12]	[2.19]	[0.95]	[0.24]
Pension and profit sharing plans (range)	-0.030***	-0.018*	-0.047**	-0.013	-0.044**
	[4.36]	[1.75]	[2.38]	[1.40]	[2.03]
Charitable organizations (range)	-0.020*	-0.051***	-0.091***	-0.021	-0.095***
	[1.79]	[3.89]	[2.61]	[1.57]	[2.65]
Corporations or other businesses (range)	0.027***	0.003	0.040	0.012	0.010
	[3.04]	[0.28]	[1.51]	[1.29]	[0.51]
State or municipal government (range)	-0.015	-0.017	-0.072**	-0.008	-0.004
	[1.25]	[1.12]	[2.01]	[0.69]	[0.13]
Number of Clienteles	0.015**	0.025***	0.044**	0.018***	0.079***
	[2.00]	[3.07]	[2.17]	[3.28]	[4.00]
Log Metro Population	0.031***	0.023***	0.032	0.036***	0.035**
	[5.17]	[2.73]	[1.03]	[5.47]	[2.44]
US Public Equity (dummy)		-0.257***	-0.214**	-0.066*	-0.032
		[5.38]	[2.11]	[1.75]	[0.46]
International Public Equity (dummy)		0.079***	0.226***	0.028	0.111***
		[3.67]	[3.16]	[1.58]	[2.69]
Fixed Income (dummy)		0.017	0.033	0.031	0.101***
		[0.75]	[0.55]	[1.44]	[3.03]
Alternative Assets (dummy)		0.106***	0.231***	0.056***	0.104***
		[3.92]	[4.16]	[2.92]	[2.94]
Advisory Emp. (range), resid lag5				0.585***	
				[30.58]	
Hedge Fund Manager					0.122**
					[2.02]
PE/VC Manager					0.618***
					[7.60]

Observations	100995	42918	5600	20246	14276
Sample of Firms	All Advisors	All Advisors	Assets>=$10B	All Advisors	HFs/PEs/MFs
Adjusted R2	0.473	0.540	0.318	0.713	0.512

Panel B: 13F Holdings Determinants of Number of Advisory Employees (range)

Dependent Variable:	**Advisory Employees (range)**				
	OLS	OLS	OLS	OLS	OLS
Predictive Variables	(1)	(2)	(3)	(4)	(5)
Average SIZEq of 13F Holdings	-0.051***	-0.061***	-0.064***	-0.125***	-0.038
	[4.53]	[4.38]	[4.22]	[3.15]	[1.31]
Average BTMq of 13F Holdings	-0.048***	-0.064***	-0.063***	-0.087*	-0.106***
	[3.11]	[3.36]	[3.04]	[1.73]	[2.71]
Average MOMq of 13F Holdings	0.028**	0.042**	0.042**	0.041	-0.001
	[2.05]	[2.01]	[2.07]	[0.96]	[0.03]
% of Advisor Assets on 13F	-0.271***	-0.282***	-0.148***	0.033	-0.026
	[6.94]	[6.18]	[3.01]	[0.24]	[0.32]
13F Holdings Average CA Quarterly Returns (t-1,t)		-0.672**	-0.667**	-1.875***	-0.232
		[1.97]	[2.07]	[3.50]	[0.47]
13F Holdings Average CA Quarterly Returns (t-2,t-1)		-0.643***	-0.675**	-1.412***	-1.353***
		[2.63]	[2.50]	[2.62]	[3.51]
13F Holdings Average CA Quarterly Returns (t-3,t-2)		-0.577***	-0.607***	-2.235***	-0.768**
		[4.02]	[3.60]	[4.89]	[2.20]
Log Number of Mutual Fund Styles					0.099***
					[3.64]
Observations	24811	18774	16643	2160	5467
Advisor Characteristics	Y	Y	Y	Y	Y
Clientele Controls	Y	Y	Y	Y	Y
Asset Class Dummies	N	N	Y	Y	Y
Sample of Firms	All Advisors	All Advisors	All Advisors	Assets>=$10B	MFs
Adjusted R2	0.578	0.589	0.607	0.372	0.602

Table 4: Summary statistics on data hand-collected from 59 advisory firm websites

Table 4 presents means and medians on type of advisory employees and comparable number from the Form ADV for the same firms. Advisory Employees (website) is the number of employees performing advisory functions (portfolio managers, analysts, and executives) based on the official titles and bios on firm websites, while Advisory Employees (FormADV) is equal to the *# of Advisory Employees* variable. AdvEmp Website/AdvEmp FormADV is the ratio of the two variables. Portfolio Managers (MFs) is equal to the *Total # of Portfolio Managers*, the number of different portfolio managers managing mutual funds. *Execs+Portfolio Managers (website)* is the total number of employees on the advisory firm website with the title of portfolio manager or an executive performing advisory functions (President, CEO, CIO, Managing Director, Division Head). PMs (MF)/Execs+PMs (website) is the ratio of the two variables. Analyst % (website) is the proportion of advisory employees who are analysts or associates and are not analysts or executives, PM % (website) is the proportion of advisory employees who are portfolio managers but not executives, and Exec % (website) is the proportion of advisory employees who are executives.

	Mean	**Median**
	(1)	(2)
Advisory Employees (website)	24.2	12
Advisory Employees (FormADV)	29.1	15
AdvEmp Website/AdvEmp FormADV	0.88	0.97
Portfolio Managers (MFs)	11	6
Execs+Portfolio Managers (website)	14	9
PMs (MF)/Execs+PMs (website)	0.82	0.86
Analyst % (website)	0.33	0.35
PM % (website)	0.37	0.40
Exec % (website)	0.31	0.22

Table 5: Summary statistics for fund-level variables

Table 5 presents summary statistics for fund-level performance and flow measures, fund-level characteristics, and measures of active portfolio management. For each variable, it shows the total number of non-missing observations, along with the time-series averages of the mean, standard deviation, 10^{th} percentile, median, and 90^{th} percentile. All the performance variables are assets-weighted averages across all firms managed by the firm. *Gross* Returns is the monthly fund returns, before expenses, while *Gross Returns, residual* is the residual from regressing *Gross Returns* on fund characteristics (*Log Fund Assets*, *Log Fund Age*, *Log Expense Ratio*) with Lipper class style-by-month fixed effects. *Berk-Binsbergen Alpha* is the monthly gross alpha relative to Vanguard benchmarks, as calculated in Berk and Binsbergen (2015). *BB Value Added ($MIL)* is the fund's monthly value added (in millions of dollars) relative to Vanguard benchmarks, as calculated in Berk and Binsbergen (2015), while *BB Value Added (logged)* is the natural logarithm of the absolute value of *BB Value Added* (with the same sign). *Gross 4-Factor Alpha* is the monthly alpha from the Carhart (1997) 4-Factor model, with loadings calculated using daily returns from the prior twelve months. *Holdings Returns, residual* is the residual from regressing monthly holdings-based returns on fund characteristics with Lipper class style-by-month fixed effects. *Return Gap, residual* is the residual from regressing the return gap (from Kaperczyk, Sialm, and Zheng, 2008) on fund characteristics with Lipper class style-by-month fixed effects. *Δ Log MF Assets* is next year's change in the natural logarithm of mutual fund assets (where assets of funds with more than one subadvisor are assumed to be equally divided between all the subadvisors). *Δ Log Number of MFs* is next year's change in the natural logarithm of the number of mutual funds advised (funds with N subadvisors only count as 1/N fund for each subadvisory firm). *Δ Log Assets Per Fund* is next year's change in the natural logarithm of total assets scaled by total funds. *Δ Log Number of Styles* is next year's change in the natural logarithm of the total number of Lipper class styles. *Δ Log Assets with Flows* is the natural logarithm of this year's assets plus total fund flows in the next year minus this year's log assets. *Δ Log Assets with Flows Residual* is the natural logarithm of this year's assets plus next year's residual fund flows minus this year's log assets. *Fund Assets ($MIL)* are the fund's assets under management, in millions of dollars, while *Log Fund Assets* is the natural logarithm of *Fund Assets*. *Fund Age (years)* is the number of years since the fund's inception date, while *Log Fund Age* is the natural logarithm of one plus *Fund Age*. *Expense Ratio (%)* is the fund's expense ratio, while *Log Expense Ratio* is the natural logarithm of *Expense Ratio*. *Advisor Number of Mutual Funds* is the total number of mutual funds advised by the advisory firm (funds with N subadvisors only count as 1/N fund for each sub-advisory firm). *Advisor Number of Fund Styles* is the number of different Lipper class styles among the funds managed by the advisor. *Active Share, residual* is the residual from regressing *Active Share* (the Cremers and Petajisto (2009) measure of how a fund's holdings deviate from its closest benchmark) on fund characteristics with Lipper class style-by-month fixed effects. *Tracking Error, residual* is the residual from regressing *Tracking Error (daily)* (the standard deviation across a year of daily excess returns relative to the fund's style average return) on fund characteristics with Lipper class style-by-month fixed effects. *Log Number of Holdings, residual* is the residual from regressing the natural logarithm of *Number of Holdings* (the number of fund holdings) on fund characteristics with Lipper class style-by-month fixed effects.

	Obs.	Mean	SD	p10	p50	p90
	(1)	(2)	(3)	(4)	(5)	(6)
Advisor-Aggregated Performance Measures (monthly)						
Gross Returns	111377	0.605%	2.333%	-1.848%	0.589%	3.092%
Gross Returns, residual	111377	-0.016%	1.621%	-1.671%	-0.014%	1.660%
Berk-Binsbergen Alpha	108847	0.026%	2.170%	-2.209%	0.028%	2.280%
BB Value Added ($MIL)	108847	2.0	189.2	-30.2	0.0	32.5
BB Value Added (logged)	108847	0.043	2.488	-3.245	0.029	3.351
Gross 4-Factor Alpha	88271	-0.078%	1.482%	-1.648%	-0.064%	1.489%
Holdings Returns, residual	82849	-0.004%	1.826%	-1.754%	-0.008%	1.741%
Return Gap, residual	82296	-0.012%	0.653%	-0.613%	-0.002%	0.587%
Advisor-Aggregated Flow Measures (annual) (t,t+1)						
Δ Log MF Assets	14485	0.127	0.778	-0.399	0.065	0.759
Δ Log Number of MFs	14594	0.032	0.446	-0.285	0.000	0.433
Δ Log Assets Per Fund	14485	0.088	0.641	-0.413	0.050	0.655
Δ Log Number of Styles	12638	0.046	0.393	-0.197	0.000	0.395
Δ Log Assets with Flows	9725	0.056	0.436	-0.271	-0.008	0.451
Δ Log Assets with Flows Residual	7113	-0.001	0.262	-0.224	-0.003	0.225
Fund Characteristics (fund-month)						
Fund Assets ($MIL)	908650	1127	4904	16	185	2106
Log Fund Assets	908650	5.2	1.9	2.7	5.2	7.6
Fund Age (years)	912998	12.8	11.2	2.4	10.6	23.6
Log Fund Age	912948	2.2	0.9	0.9	2.4	3.2
Expense Ratio (%)	891346	0.011	0.007	0.005	0.011	0.017
Log Expense Ratio	891346	-4.6	0.6	-5.3	-4.5	-4.1
Advisor Number of Mutual Funds	906933	53.8	54.2	2.9	31.5	138.3
Advisor Number of Fund Styles	906933	27.5	22.4	2.3	22.4	62.0
Fund Characteristics (fund-year)						
Active Share	23344	0.786	0.150	0.582	0.814	0.952
Tracking Error (daily)	40921	0.358%	0.341%	0.178%	0.303%	0.572%
Number of Holdings	38369	98	188	21	64	163
Advisor-Aggregated Activity Measures (annual)						
Active Share, Residual	6877	0.02	0.10	-0.09	0.03	0.13
Tracking Error, Residual	9451	0.03%	0.29%	-0.14%	-0.02%	0.21%
Log Number of Holdings, Residual	8538	-0.14	0.55	-0.77	-0.18	0.51

Table 6: Advisory employees and holdings-based returns

Table 6 presents estimated coefficients from pooled OLS and IV regressions of future annual measures of performance on advisory employees and advisory firm characteristics. The advisory firm returns are generated from Form 13F US equity holdings. The dependent variable is next year's average quarterly holdings-based returns in Columns (1) through (3), and next year's average quarterly characteristics-adjusted holdings-based returns (as in Daniel, Grinblatt, Titman, and Wermers, 1997) in Columns (4) through (6). In Columns (2) and (5), we restrict the sample to firms whose 13F assets are at least 50% of advisory firm assets. In Columns (3) and (6), we instrument our explanatory variable of interest, *Advisory Employees (range)*, with an instrument *Advisory Employees (range), resid lag5*. All explanatory variables are defined in Table 2. All specifications include clientele controls and year fixed effects. Each specification also includes three lagged versions of the dependent variable in that specification. T-statistics are provided in brackets with standard errors clustered by advisory firm and time. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

Dependent Variable:	**Holdings Average Quarterly Returns (t,t+1)**			**Holdings Average CA Quarterly Returns (t,t+1)**		
	OLS	OLS	IV	OLS	OLS	IV
Predictive Variables	(1)	(2)	(3)	(4)	(5)	(6)
Advisory Employees (range)	0.0006	0.0003	0.0000	0.0002	0.0000	0.0001
	[1.16]	[0.70]	[0.02]	[0.43]	[0.16]	[0.26]
Log Assets Per Account	-0.0002	-0.0002	0.0001	0.0003	0.0001	0.0003
	[0.55]	[0.52]	[0.28]	[1.02]	[0.33]	[0.81]
Log Accounts	-0.0010*	-0.0011*	-0.0004	0.0001	-0.0001	0.0002
	[1.72]	[1.93]	[0.63]	[0.39]	[0.37]	[0.46]
Publicly Owned	-0.0011	-0.0006	0.0003	-0.0003	0.0004	-0.0001
	[1.26]	[0.68]	[0.39]	[1.06]	[0.63]	[0.12]
Number of Clienteles	0.0005	0.0005	0.0003	0.0000	0.0000	0.0000
	[1.15]	[1.17]	[0.79]	[0.10]	[0.01]	[0.08]
Log Metro Population	0.0001	0.0001	-0.0001	-0.0001	-0.0001	-0.0001
	[0.24]	[0.33]	[0.22]	[0.82]	[0.75]	[0.18]
Dependent Variable (t-1,t)	0.0345	0.0546	-0.0440	0.0233	0.0055	0.0140
	[0.45]	[0.62]	[0.44]	[0.60]	[0.10]	[0.28]
Dependent Variable (t-2,t-1)	-0.0038	-0.0063	-0.0255	-0.0316	-0.0465	-0.0064
	[0.08]	[0.10]	[0.57]	[0.81]	[0.85]	[0.27]
Dependent Variable (t-3,t-2)	-0.0046	-0.0436	0.0629	0.0164	-0.0174	0.0711**
	[0.08]	[0.70]	[1.36]	[0.48]	[0.52]	[2.08]
Observations	17088	10249	10317	16703	10176	10066
Clientele Controls	Y	Y	Y	Y	Y	Y
Sample of Firms	ALL	13Assets>50%	ALL	ALL	13Assets>50%	ALL
Adjusted R2	0.759	0.826	0.792	0.006	0.012	0.010

Table 7: Advisory employees and mutual fund performance measures

Table 7 presents estimated coefficients from pooled OLS and IV regressions of future monthly measures of mutual fund performance on advisory employees and other advisory firm characteristics. Panel A presents OLS regressions, while for Panel B, the main explanatory variable of interest, *Advisory Employees (range)*, is instrumented with *Advisory Employees (range), resid lag5*. In Column (1) of each panel, the dependent variable is the firm's asset-weighted average *Gross Returns, residual*, which is the residual from regressing *Gross Returns* on fund characteristics with Lipper class style-by-month fixed effects. In Column (2) of each panel, the dependent variable is the firm's asset-weighted average *Berk-Binsbergen Alpha*, which is the monthly gross alpha relative to Vanguard benchmarks, as calculated in Berk and Binsbergen (2015). In Column (3) of each panel, the dependent variable is the firm's asset-weighted average *BB Value Added (logged)*, which is the natural logarithm of the absolute value of *Berk-Binsbergen Value Added* (with the same sign). In Column (4) of each panel, the dependent variable is the firm's asset-weighted average *Gross 4-Factor Alpha*, which is the monthly alpha from the Carhart (1997) 4-Factor model, with loadings calculated using daily returns from the prior twelve months. In Column (5) of each panel, the dependent variable is the firm's asset-weighted average *Holdings Returns, residual*, which is the residual from regressing monthly holdings-based returns on fund characteristics with Lipper class style-by-month fixed effects. In Column (6) of each panel, the dependent variable is the firm's asset-weighted average *Return Gap, residual*, which is the residual from regressing the return gap (from Kaperczyk, Sialm, and Zheng, 2008) on fund characteristics with Lipper class style-by-month fixed effects. In Columns (1) through (3), performance is calculated for (and asset-weighted averages taken across) all equity mutual funds, while in Columns (4) through (6), this is done only for diversified domestic equity funds. All explanatory variables are defined in Table 2. All specifications include clientele controls and month fixed effects. T-statistics are provided in brackets with standard errors clustered by advisory firm and time. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels.

Panel A: Mutual fund performance measures and advisory employees, OLS

Dependent Variable:	**Gross Returns, residual**	**Berk-Binsb. Alpha**	**BB Value Added (logged)**	**Gross 4Factor Alpha**	**Holdings Returns, residual**	**Return Gap, residual**
	OLS	OLS	OLS	OLS	OLS	OLS
Predictive Variables	(1)	(2)	(3)	(4)	(5)	(6)
Advisory Employees (range)	1.045	-0.148	-0.004	1.369	0.789	0.525
	[1.31]	[0.16]	[0.24]	[1.32]	[0.48]	[0.99]
Log Assets Per Account	-0.558	0.545	0.022	-0.009	-0.946	0.119
	[1.01]	[0.78]	[1.59]	[0.01]	[1.08]	[0.37]
Log Accounts	-1.833***	-0.948	0.003	-1.558**	-2.230**	-0.108
	[3.13]	[1.44]	[0.21]	[2.38]	[2.19]	[0.31]
Publicly Owned	-0.343	-1.765	-0.017	-1.609	1.350	-0.424
	[0.26]	[1.19]	[0.67]	[1.01]	[0.78]	[0.62]
Number of Clienteles	1.364***	0.591	0.007	0.458	-0.102	0.059
	[3.02]	[1.39]	[0.75]	[0.89]	[0.17]	[0.26]
Log Metro Population	0.512	0.160	-0.005	0.577	0.493	0.311
	[0.94]	[0.29]	[0.66]	[1.06]	[0.81]	[1.25]
Observations	99779	97828	97828	82486	77261	76887
Clientele Controls	Y	Y	Y	Y	Y	Y
Sample of Funds	All Equity	All Equity	All Equity	Diversified Dom. Eq.	Diversified Dom. Eq.	Diversified Dom. Equity

Adjusted R2	0.002	0.018	0.022	0.068	0.003	0.002

Panel B: Mutual fund performance measures and advisory employees, instrumental variable

Dependent Variable:	**Gross Returns, residual**	**Berk-Binsb. Alpha**	**BB Value Added (logged)**	**Gross 4Factor Alpha**	**Holdings Returns, residual**	**Return Gap, residual**
	IV	IV	IV	IV	IV	IV
Predictive Variables	(1)	(2)	(3)	(4)	(5)	(6)
Advisory Employees (range)	1.952	-2.827*	-0.037	2.151	-3.027	2.681***
	[1.09]	[1.69]	[1.37]	[0.96]	[1.10]	[2.81]
Log Assets Per Account	-0.547	1.085*	0.046**	-0.251	1.078	-0.811*
	[0.76]	[1.72]	[2.52]	[0.26]	[0.89]	[1.85]
Log Accounts	-1.720**	0.283	0.026	-2.005*	-0.237	-0.974**
	[2.20]	[0.47]	[1.44]	[1.95]	[0.17]	[2.09]
Publicly Owned	-0.958	1.340	0.006	-0.143	-1.307	0.288
	[0.73]	[1.22]	[0.21]	[0.08]	[0.80]	[0.38]
Number of Clienteles	1.045**	0.496	0.013	0.225	0.012	0.017
	[2.00]	[1.06]	[1.05]	[0.38]	[0.02]	[0.07]
Log Metro Population	-0.042	-0.544	-0.026**	-0.917	-0.174	0.335
	[0.07]	[0.93]	[2.44]	[1.22]	[0.25]	[1.29]
Observations	55023	54166	54166	45511	41219	41210
Clientele Controls	Y	Y	Y	Y	Y	Y
Sample of Funds	All Equity	All Equity	All Equity	Diversified Dom. Eq.	Diversified Dom. Eq.	Diversified Dom. Equity
Adjusted R2	0.005	0.022	0.025	0.081	0.003	0.003

Table 8: Advisory employees and future changes in assets, number of accounts, and assets per account
Table 8 presents estimated coefficients from pooled OLS and IV regressions of future annual changes in assets, as well as decomposition of assets into number of accounts and assets per account. In Panel A and in Columns (1) and (2) of Panel C, the dependent variable is *Δ Log Assets (t,t+1)*, next year's change in the natural logarithm of firm's assets under management. In Columns (1) through (3) of Panel B and Columns (3) and (4) of Panel C, the dependent variable is *Δ Log Accounts (t,t+1)*, next year's change in the natural logarithm of firm's accounts. In Columns (4) through (6) of Panel B and Columns (5) and (6) of Panel C, the dependent variable is *Δ Log Assets Per Account (t,t+1),* next year's change in the natural logarithm of firm's assets per account. In Panel A, Column (1) includes all firms, Column (2) restricts the sample to firms with more than $1 billion in assets, and Column (3) restricts the sample to advisors with at least 75% of clients who are pooled investment vehicles and investment companies. Column (4) and (6) adds three years of lagged characteristic-adjusted quarterly returns. In Columns (5) and (6), *Advisory Employees (range)* is instrumented with *Advisory Employees (range), resid lag5*. In Panel B, Columns (1) and (4) restrict the sample to advisors with at least 75% of clients who are pooled investment vehicles and investment companies, Column (2) and (5) add three years of lagged characteristic-adjusted quarterly returns, and in Columns (3) and (6), *Advisory Employees (range)* is instrumented with *Advisory Employees (range), resid lag5*. In Panel C, Columns (1), (3), and (5) include all firms while Columns (2), (4), and (6) restrict the sample to advisors with at least 75% of clients who are pooled investment vehicles and investment companies. Panel C also includes five lagged years of changes in *Advisory Employees (range), resid* and five lagged years of changes in *Log Assets*. All explanatory variables are defined in Table 2. All specifications include clientele controls and year fixed effects. T-statistics are provided in brackets with standard errors clustered by advisory firm and time. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels

Panel A: Change in advisory assets and advisory employees

Dependent Variable:	**Δ Log Assets (t,t+1)**					
	OLS	OLS	OLS	OLS	IV	IV
Predictive Variables	(1)	(2)	(3)	(4)	(5)	(6)
Advisory Employees (range)	0.051***	0.049***	0.042***	0.033***	0.026***	0.037***
	[16.14]	[8.02]	[5.76]	[4.59]	[7.69]	[3.62]
Log Assets Per Account	-0.058***	-0.066***	-0.043***	-0.029***	-0.018***	-0.020
	[9.16]	[5.91]	[6.45]	[2.65]	[3.02]	[1.61]
Log Accounts	-0.043***	-0.040***	-0.030***	-0.009	0.000	-0.002
	[9.88]	[4.77]	[6.49]	[1.19]	[0.10]	[0.24]
Publicly Owned	-0.008	-0.003	-0.031**	-0.018	-0.020	-0.003
	[1.05]	[0.36]	[2.02]	[1.37]	[1.49]	[0.29]
Number of Clienteles	-0.002	0.003	-0.004	-0.004	-0.008***	-0.008**
	[0.63]	[0.67]	[0.60]	[1.44]	[3.58]	[2.33]
Log Metro Population	0.002	0.003	0.004	0.000	-0.006**	-0.008
	[1.28]	[0.75]	[0.84]	[0.05]	[2.01]	[1.65]
CA_Q.Returns (t-1,t)				1.205***		1.210***
				[3.48]		[2.96]
CA_Q.Returns (t-2,t-1)				0.632*		0.804**
				[1.88]		[2.25]
CA_Q.Returns (t-3,t-2)				0.332		0.381*
				[1.11]		[1.68]

Contemporaneous Returns (t,t+1)				2.764***		2.520***
				[6.43]		[6.07]
Observations	85431	27451	21277	16018	33361	9793
Clientele Controls	Y	Y	Y	Y	Y	Y
Sample of Firms	ALL	Assets > $1Bil	HFs/MFs only	ALL	ALL	ALL
Adjusted R2	0.062	0.055	0.056	0.120	0.079	0.131

Panel B: Change in advisory accounts (and assets per account) and advisory employees

Dependent Variable:	**Δ Log Accounts (t,t+1)**			**Δ Log Assets Per Account (t,t+1)**		
	OLS	OLS	IV	OLS	OLS	IV
Predictive Variables	(1)	(2)	(3)	(4)	(5)	(6)
Advisory Employees (range)	0.031***	0.043***	0.047***	0.011	-0.010	-0.010
	[4.09]	[3.88]	[3.42]	[1.21]	[0.78]	[0.66]
Log Assets Per Account	0.062***	0.028***	0.024	-0.106***	-0.057***	-0.044***
	[4.43]	[2.65]	[1.39]	[6.49]	[4.87]	[3.02]
Log Accounts	-0.109***	-0.047**	-0.043**	0.080***	0.038*	0.041*
	[5.64]	[2.52]	[2.10]	[3.85]	[1.91]	[1.75]
Publicly Owned	0.020*	-0.014	-0.009	-0.051***	-0.004	0.006
	[1.73]	[0.93]	[0.51]	[3.85]	[0.24]	[0.25]
Number of Clienteles	0.029***	0.001	-0.004	-0.032***	-0.006	-0.004
	[3.19]	[0.17]	[0.75]	[3.79]	[0.83]	[0.53]
Log Metro Population	-0.005*	-0.008**	-0.010**	0.009	0.008**	0.002
	[1.73]	[2.48]	[2.34]	[1.65]	[2.05]	[0.85]
CA_Q.Returns (t-1,t)		0.955***	0.976***		0.250	0.233
		[3.46]	[3.29]		[1.43]	[0.70]
CA_Q.Returns (t-2,t-1)		0.696***	0.733		-0.064	0.071
		[3.25]	[1.67]		[0.20]	[0.13]
CA_Q.Returns (t-3,t-2)		-0.044	-0.225		0.376**	0.606**
		[0.18]	[0.88]		[2.48]	[2.54]
Contemporaneous Returns (t,t+1)		0.370	0.187		2.394***	2.333***
		[1.56]	[0.89]		[8.22]	[6.72]
Observations	21277	16018	9793	21277	16018	9793
Clientele Controls	Y	Y	Y	Y	Y	Y
Sample of Firms	HFs/MFs only	ALL	ALL	HFs/MFs only	ALL	ALL
Adjusted R2	0.072	0.033	0.031	0.082	0.089	0.091

Panel C: Change in assets and lagged changes in assets and advisory employees

Dependent Variable:	Δ Log Assets (t,t+1)		Δ Log Accounts (t,t+1)		Δ Log Assets Per Account (t,t+1)	
	OLS	OLS	OLS	OLS	OLS	OLS
Predictive Variables	(1)	(2)	(3)	(4)	(5)	(6)
Δ Advisory Employees (range), residual (t-1,t)	0.030	0.090***	0.079	0.268	-0.050	-0.178
	[1.53]	[3.65]	[1.24]	[1.15]	[0.65]	[0.70]
Δ Advisory Employees (range), residual (t-2,t-1)	0.029*	0.048	0.048**	0.048	-0.020	0.000
	[1.81]	[1.40]	[2.15]	[0.82]	[0.78]	[0.01]
Δ Advisory Employees (range), residual (t-3,t-2)	0.007	0.011	0.037**	0.026	-0.030	-0.015
	[0.46]	[0.18]	[2.45]	[0.45]	[1.36]	[0.24]
Δ Advisory Employees (range), residual (t-4,t-3)	0.022	0.067*	0.051***	0.061**	-0.030**	0.006
	[1.44]	[1.77]	[3.48]	[2.19]	[2.50]	[0.13]
Δ Advisory Employees (range), residual (t-5,t-4)	0.040**	0.074**	0.078***	0.087	-0.038*	-0.013
	[2.52]	[2.11]	[4.78]	[1.32]	[1.89]	[0.17]
Advisory Employees (range), residual, lag (t-5)	0.025**	0.052**	0.041***	0.050	-0.016	0.003
	[2.37]	[2.05]	[4.22]	[1.47]	[1.19]	[0.05]
Δ Log Assets (t-1,t)	0.026	0.045	0.149***	0.179**	-0.124*	-0.134
	[0.32]	[0.29]	[4.57]	[2.10]	[1.90]	[0.93]
Δ Log Assets (t-2,t-1)	0.090***	0.104***	0.089***	0.067**	0.001	0.037
	[2.79]	[2.80]	[5.88]	[2.17]	[0.02]	[0.86]
Δ Log Assets (t-3,t-2)	0.045***	0.012	0.034**	0.006	0.011	0.006
	[2.74]	[0.28]	[2.22]	[0.16]	[0.36]	[0.15]
Δ Log Assets (t-4,t-3)	0.019	0.008	0.012	0.027	0.007	-0.020
	[1.58]	[0.26]	[1.10]	[0.73]	[0.30]	[0.49]
Δ Log Assets (t-5,t-4)	-0.017	0.010	0.010	0.035	-0.026	-0.024
	[0.78]	[0.24]	[1.06]	[1.17]	[1.13]	[0.36]
Log Assets, lag (t-5)	-0.008*	0.009	-0.012***	-0.001	0.004	0.010**
	[1.93]	[1.25]	[2.85]	[0.20]	[1.05]	[1.98]
CA_Q.Returns (t-1,t)	0.762**	0.326	0.779***	0.185	-0.018	0.140
	[2.13]	[0.73]	[3.47]	[0.75]	[0.05]	[0.31]
CA_Q.Returns (t-2,t-1)	0.171	-0.322	0.394	0.669	-0.223	-0.991
	[0.52]	[0.75]	[0.92]	[0.70]	[0.41]	[0.91]
CA_Q.Returns (t-3,t-2)	0.080	-0.042	-0.442	-0.587	0.521**	0.545
	[0.24]	[0.13]	[1.47]	[0.78]	[2.00]	[0.80]
Observations	9799	1768	9799	1768	9799	1768
Sample of Firms	ALL	HFs/MFs only	ALL	HFs/MFs only	ALL	HFs/MFs only
Adjusted R2	0.110	0.087	0.022	0.013	0.060	0.027

Table 9: Advisory employees and future changes in mutual fund assets and accounts, and fund flows

Table 9 presents estimated coefficients from IV regressions of future annual changes in assets, as well as funds, and fund flows on advisory employees. In each specification, *Advisory Employees (range)* is instrumented with *Advisory Employees (range), resid lag5*. In Panel A, the variables are aggregated for all funds, while in Panel B, fund flows are measured separately for fund classes offered to institutions, sold to broker-dealers, and sold directly to retail investors. In Column (1) of Panel A, the dependent variable is *Δ Log MF Assets*, next year's change in the natural logarithm of mutual fund assets advised by the firm. In Column (2) of Panel A, the dependent variable is *Δ Log Number of MFs*, next year's change in the natural logarithm of the number of mutual funds advised by the firm. In Column (3) of Panel A, the dependent variable is *Δ Log Assets Per Fund*, next year's change in the natural logarithm of total mutual fund assets scaled by total mutual funds. In Column (4) of Panel A, the dependent variable is *Δ Log Number of Styles*, next year's change in the natural logarithm of the total number of Lipper class styles. In Column (5) of Panel A and Columns (1), (3), and (5) of Panel B, the dependent variable is *Δ Log Assets with Flows*, the natural logarithm of this year's assets plus total fund flows in the next year minus this year's log assets. In Column (6) of Panel A and Columns (2), (4), and (6) of Panel B, the dependent variable is *Δ Log Assets with Flows Residual*, the natural logarithm of this year's assets plus next year's residual fund flows minus this year's log assets. In Panel B, Columns (1) and (2) only include fund flows to institutional fund classes, Columns (3) and (4) only include flows to broker-sold fund classes, and Columns (5) and (6) only include flows to direct retail classes. All explanatory variables are defined in Table 2. All specifications include clientele controls and year fixed effects. Each specification also includes the start-of-year level of the dependent variable. T-statistics are provided in brackets with standard errors clustered by advisory firm and time. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels

Panel A: Change in mutual fund assets, fund, and flows, and advisory employees

Dependent Variable:	**Δ Log MF Assets (t,t+1)**	**Δ Log Number of MFs (t,t+1)**	**Δ Log Assets Per Fd. (t,t+1)**	**Δ Log Number of Styles (t,t+1)**	**Δ Log Assets with Flows**	**Δ Log Assets w/ Flows Residual**
	IV	IV	IV	IV	IV	IV
Predictive Variables	(1)	(2)	(3)	(4)	(5)	(6)
Advisory Employees (range)	0.093***	0.059***	0.027*	0.023***	0.039	0.049***
	[4.73]	[4.79]	[1.76]	[3.37]	[1.29]	[3.97]
Dependent Variable (at t)	-0.113***	-0.087***	-0.127***	-0.115***	-0.065***	-0.008*
	[11.56]	[11.97]	[9.95]	[8.90]	[5.63]	[1.88]
Log Assets Per Account	0.081***	0.015**	0.066***	0.042***	0.051***	-0.007
	[5.04]	[2.10]	[5.55]	[6.42]	[3.02]	[1.19]
Log Accounts	0.065***	0.022***	0.038***	0.050***	0.044***	-0.013*
	[4.78]	[3.01]	[4.43]	[7.75]	[2.64]	[1.79]
Publicly Owned	-0.019	-0.010	-0.015	0.017	-0.057***	-0.026**
	[0.86]	[0.73]	[0.88]	[1.27]	[3.43]	[2.42]
Number of Clienteles	0.009	0.006	0.001	0.003	0.002	0.006
	[1.19]	[1.30]	[0.17]	[0.72]	[0.43]	[1.38]
Log Metro Population	-0.005	0.000	-0.005	0.000	-0.007	-0.004
	[0.80]	[0.01]	[0.75]	[0.07]	[1.15]	[0.93]
Observations	7374	7405	7374	6684	5183	4079
Clientele Controls	Y	Y	Y	Y	Y	Y
Adjusted R2	0.099	0.041	0.133	0.076	0.081	0.008

Panel B: Fund flows and advisory employees, sample splits by fund class distribution channel

Dependent Variable:	**Δ Log Assets with Flows**	**Δ Log Assets w/ Flows Residual**	**Δ Log Assets with Flows**	**Δ Log Assets w/ Flows Residual**	**Δ Log Assets with Flows**	**Δ Log Assets w/ Flows Residual**
Distribution Channel:	**Institutional**		**Broker/Advisor Sold**		**Direct Sold**	
	IV	IV	IV	IV	IV	IV
Predictive Variables	(1)	(2)	(3)	(4)	(5)	(6)
Advisory Employees (range)	0.078*	0.080***	0.057	0.025	0.023	0.039*
	[1.83]	[3.91]	[1.50]	[1.13]	[0.71]	[1.84]
Dependent Variable (at t)	-0.103***	-0.020***	-0.076***	-0.003	-0.060***	0.005
	[8.48]	[2.68]	[6.62]	[0.53]	[5.47]	[0.80]
Log Assets Per Account	0.073***	0.003	0.047***	-0.001	0.035**	-0.017*
	[4.45]	[0.30]	[2.61]	[0.15]	[2.46]	[1.91]
Log Accounts	0.064***	-0.001	0.039**	-0.010	0.015	-0.021*
	[3.57]	[0.10]	[2.25]	[1.38]	[0.97]	[1.95]
Publicly Owned	-0.097***	-0.025	-0.012	-0.017	-0.069**	0.001
	[2.92]	[1.39]	[0.48]	[1.51]	[2.51]	[0.04]
Number of Clienteles	-0.008	0.004	-0.009	0.013*	0.015*	0.000
	[0.65]	[0.73]	[1.22]	[1.94]	[1.70]	[0.03]
Log Metro Population	-0.023**	-0.013	-0.010	-0.003	-0.008	-0.003
	[1.96]	[1.39]	[1.04]	[0.36]	[0.64]	[0.42]
Observations	3613	2551	3135	2256	2415	1807
Clientele Controls	Y	Y	Y	Y	Y	Y
Adjusted R2	0.113	0.008	0.119	0.012	0.094	0.015

Table 10: Advisory employees and future changes in mutual fund assets and accounts, and fund flows
Table 10 presents estimated coefficients from OLS and IV regressions of annual measures of active management on advisory employees. In Columns (1) and (2), the dependent variable is the firm's asset-weighted average *Active Share, residual*, which is the residual from regressing *Active Share* (the Cremers and Petajisto (2009) measure of how a fund's holdings deviate from its closest benchmark) on fund characteristics with Lipper class style-by-month fixed effects. This variable is available and averaged across domestic diversified equity mutual funds. In Columns (3) and (4), the dependent variable is the firm's asset-weighted average *Tracking Error, residual*, which is the residual from regressing *Tracking Error (daily)* (the standard deviation across a year of daily excess returns relative to the fund's Lipper class style average return) on fund characteristics with Lipper class style-by-month fixed effects. In Columns (5) and (6), the dependent variable is the firm's asset-weighted average *Log Number of Holdings, residual*, which is the residual from regressing the natural logarithm of the number of holdings on fund characteristics with Lipper class style-by-month fixed effects. Tracking error and log number of holdings is averaged across all equity mutual funds. In Columns (2), (4), and (6), *Advisory Employees (range)* is instrumented with *Advisory Employees (range), resid lag5*. All explanatory variables are defined in Tables 2 and 5. All specifications include clientele controls and year fixed effects. Each specification also includes the start-of-year level of the dependent variable. T-statistics are provided in brackets with standard errors clustered by advisory firm and time. *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels

Dependent Variable:	**Active Share, residual**		**Tracking Error, residual**		**Log Number of Holdings, residual**	
	OLS	IV	OLS	IV	OLS	IV
Predictive Variables	(1)	(2)	(3)	(4)	(5)	(6)
Advisory Employees (range)	-0.011***	-0.017**	-0.034%***	-0.059%***	0.051***	0.076*
	[3.03]	[1.99]	[3.96]	[4.69]	[2.64]	[1.81]
Log Assets Per Account	0.007**	0.010***	0.005%	0.024%***	-0.027*	-0.026
	[2.53]	[2.71]	[0.89]	[4.26]	[1.69]	[1.21]
Log Accounts	0.010***	0.015***	0.008%	0.020%***	-0.038**	-0.037
	[3.50]	[3.55]	[1.43]	[3.84]	[2.47]	[1.55]
Publicly Owned	-0.015**	-0.015*	-0.032%***	-0.025%**	0.038	0.047
	[2.33]	[1.72]	[3.98]	[2.52]	[1.06]	[1.04]
Number of Clienteles	0.000	0.002	0.007%	0.002%	-0.003	-0.009
	[0.02]	[0.70]	[0.74]	[0.59]	[0.38]	[0.80]
Log Metro Population	0.000	-0.002	0.003%	0.004%	-0.004	-0.015
	[0.19]	[0.51]	[0.82]	[0.98]	[0.31]	[0.89]
Log Number of Mutual Funds	-0.017***	-0.020***	0.001%	-0.002%	0.086***	0.090***
	[4.51]	[4.55]	[0.12]	[0.30]	[4.87]	[4.13]
Observations	6334	3466	8310	4626	7619	4272
Clientele Controls	Y	Y	Y	Y	Y	Y
Sample of Funds	Diversified Domestic Equity		All Equity Funds		All Equity Funds	
Adjusted R2	0.102	0.139	0.010	0.037	0.090	0.120