The worst of both worlds? Dual-registered investment advisers

Nicole M. Boyson*

March 26, 2019

Abstract

A 2007 surprise ruling by the Washington D.C. Court of Appeals required brokers to convert their fee-based brokerage accounts to Registered Investment Adviser (RIA) accounts. As fiduciaries, RIAs must place client interests first. These dual-registered investment advisers (DRs) have several conflicts of interest including affiliated mutual funds, insurance cross-selling, and mutual fund revenue sharing. Further, DRs appear to charge retail clients higher fees than independent RIAs, and regulators frequently discipline DRs. Finally, DRs invest RIA client assets in institutional classes of the same underperforming mutual funds they offer brokerage clients. Hence, many DRs may fall short of the fiduciary standard.

*Northeastern University, D'Amore-McKim School of Business 413 Hayden Hall, 360 Huntington Ave., Boston, MA 02115, 617-373-4775. I thank Raj Aggarwal, Robert Bartlett, Philip Bond, Jonathan Karpoff, Frank Partnoy, Knut Rostad, participants at the University of California Berkeley's Law, Accounting, and Economics workshop, the University of Washington seminar series, and the Georgia State University seminar series for helpful comments and thoughtful discussions. Please send your comments to n.boyson@northeastern.edu.

Introduction

In a 2007 surprise victory, the Financial Planning Association (FPA) won a lawsuit against the SEC.[1] This win imposed SEC registration for brokerage firm accounts that charge asset-based fees while leaving unchanged the regulatory framework for commission-based accounts. Post-ruling, many brokerage firms transferred fee-based clients to SEC-registered subsidiaries while keeping existing commission-based accounts intact.[2] These dual registrants must behave as fiduciaries by acting in the best interest of clients in their SEC-registered investment advisory (RIA) subsidiaries, but may observe the less onerous "suitability" standard for Financial Industry Regulatory Authority (FINRA)-registered brokerage clients.[3] In this paper, I study how this unexpected ruling affected the business environment for these dual-registered investment advisers (DRs), whether DRs serve RIA clients differently than traditional brokerage clients, and the investment welfare of RIA clients of dual registrants.

This topic is both timely and relevant. Figure 1 shows that dual registrants oversee about 81% of RIA assets under management (AUM). Dual registrants serve the majority of small retail clients, since most independent RIAs require high minimums.[4] Regulators and advisers continue to debate whether brokerage firms – dual registered or not – must comply with the fiduciary standard for brokerage clients. As industry expert Michael Kitces observes: "The Department of Labor's fiduciary proposal is driving top broker-dealers to reinvent themselves as fee-based advisory firms before the regulators do it for them."[5] The SEC identified dual registrants as an exam priority in both 2013 and 2014, noting that:

> …representatives of dual registrants, i.e., registrants that are both broker-dealers and investment advisers, and affiliated advisers and broker-dealers may influence whether

[1] Articles published at the time of the victory indicate that industry participants were surprised by the both the initial win and the absence of SEC challenge. See, for example, https://www.wealthmanagement.com/news/surprise-fpa-wins-lawsuit-against-sec-and-broker-dealer-exemption, https://nypost.com/2007/05/16/wrap-that-up/, http://nasd-law.com/ubs-mulls-shuttering-fee-based-brokerage-accounts/, and https://www.planadviser.com/sec-wont-challenge-broker-registration-ruling/

[2] The SEC estimated that over 1 million fee-based brokerage accounts, representing over $300 billion, were affected. These accounts were either converted to advisory accounts or transitioned back to traditional commission-based brokerage accounts. See https://www.sec.gov/rules/final/2007/ia-2653.pdf.

[3] A firm that registers with the SEC as a Registered Investment Adviser (RIA) is required to comply with the fiduciary standard and to provide an annual report called Form ADV. Employees of RIAs are called Investor Advisor Representatives and are required to pass qualifying examinations. Throughout the paper, I use the term "RIA" to refer to either RIA firms or their representatives. See https://www.sec.gov/divisions/investment/advoverview.htm. Suitability is governed by FINRA Rule 2111 and requires that a firm or associated person have a reasonable basis to believe a recommended transaction or investment strategy involving a security or securities is suitable for the customer. See http://www.finra.org/industry/suitability

[4] Among large RIAs, about 55% of dual registered firms are willing to accept clients with assets below $100,000, compared to 9% of independent RIAs. I discussed this result with several industry participants who noted that independent RIAs are often willing to accept smaller clients on a case-by-case basis, sometimes charging hourly instead of asset-based fees. Industry participants also noted that many mid-sized and smaller independent RIAs are likely more willing to take smaller clients. Hence, my finding that 9% of the largest independent RIAs accept retail clients may be seen as a lower bound.

[5] "Kitces to brokers: It's time for an attitude adjustment," March 1, 2019. https://www.financial-planning.com/news/broker-dealers-should-treat-financial-advice-as-a-value

> a customer establishes a brokerage or investment advisory account. This influence may create a risk that customers are placed in an inappropriate account type that increases revenue to the firm and may not provide a corresponding benefit to the customer.[6]

Against this regulatory backdrop, I present three main findings. First, while the FPA ruling was initially hailed as a victory for independent RIAs, dual registrants were the real victors based on their sizable AUM and revenue growth in the wake of the ruling. Second, dual registrants do not appear to treat their retail fiduciary (RIA) clients much differently than their retail brokerage clients. Fiduciary (RIA) clients are subject to the same conflicts of interest as brokerage clients, including cross-selling of insurance products and affiliated mutual funds, revenue sharing payments from third party mutual fund families, and simultaneous management and sponsorship of wrap programs.[7] Retail fiduciary clients of dual registrants appear to pay higher fees – without an obvious increase in financial planning services – than either dual registrant brokerage clients or clients of independent RIAs. Dual registrants more often violate regulatory standards compared to independent RIAs. Finally, dual registrants frequently place fiduciary client assets in institutional share classes of the same revenue-sharing mutual fund portfolios they offer to brokerage clients. These portfolios consistently underperform the mutual fund portfolios available to self-directed investors and independent RIA clients.

This paper focuses on small retail investors, defined as those with less than $100,000 in investible assets. In 2016, the median American family had about $23,500 in financial assets, which classifies most Americans as small retail investors.[8] I find that many dual registrants state that they are willing to serve retail clients but most independent RIAs do not. Hence, the typical American family seeking financial advice may encounter difficulty finding an independent RIA and must choose between a broker, a dual registered RIA, or managing his own portfolio. Hence, my study has important implications for a large swath of current and potential investors.[9]

Stoughton, Wu, and Zechner (2011) present a model of delegated portfolio management in which some advisers are independent. Other advisers are not independent and receive kickbacks

---

[6] See https://www.ria-compliance-consultants.com/2014/08/sec-examination-focus-on-investment-adviser-dual-registrants/

[7] Mutual fund management companies (families) sometimes make revenue sharing (or profit sharing) payments to the advisers that sell their funds. These payments are in addition to any commissions that advisers receive and are at the discretion of the mutual fund family. Unlike commissions which are paid directly from the mutual fund, revenue sharing payments are paid out of the family's profits. Revenue sharing payments can create a conflict of interest for advisers to sell funds from families that pay them over families that do not. Wrap programs are programs for which a client pays one asset-based fee for asset allocation and trading charges.

[8] Federal Reserve Board Survey of Consumer Finances. https://www.federalreserve.gov/publications/files/scf17.pdf

[9] As noted in footnote 4, my discussions with industry participants indicate that some independent RIAs accept smaller clients on a case by case basis. These industry participants also state that mid-sized independent RIAs are more likely to accept small clients. Still, if a retail client searching for an independent RIA were to read the same regulatory disclosures that I did, she would likely conclude that she is ineligible to invest with most of them.

(commissions and revenue sharing payments) from mutual fund companies (families). Revenue sharing payments are discretionary payments that some fund families make to advisers from mutual fund family profits. This model closely matches my empirical setting. They first predict that without revenue sharing payments, advisors improve investor welfare because the elasticity of investor demand increases and fees decrease. However, when funds make revenue sharing payments, investor welfare worsens. My finding that funds that revenue share have worse performance and that advisers that revenue share appear to charge higher fees supports this prediction. Next, the model predicts that revenue sharing payments subsidize aggressive mutual fund marketing by advisers, increasing the AUM of unsophisticated investors. My findings that revenues and AUM are highest for dual registrants receiving revenue sharing payments, and that dual registrants that accept revenue sharing are most likely to advise less sophisticated retail clients provide empirical support. Third, the model predicts that mutual funds that are heavily subsidized by portfolio managers, such as affiliated funds, will underperform other funds. My finding that affiliated funds underperform unaffiliated funds is consistent with this prediction. Finally, the model predicts that underperforming mutual funds will be distributed indirectly through advisers to unsophisticated clients, while outperforming funds will be distributed both directly (from fund families) and through advisers. My result that funds from broker sold fund families – even institutional share classes of these funds that do not charge distribution fees – underperform direct-sold funds, supports this prediction.[10]

Egan (2018) develops a model of the brokerage-client relationship in which brokers facilitate the search process of consumers by selecting financial products. He predicts that brokers will limit their offerings and sell only low-quality high-commission products to unsophisticated clients. Because clients do not observe the full range of securities available, they must purchase inferior products. He provides empirical support by showing that retail investors buy convertible bonds that pay their brokers double the fees of otherwise identical bonds. While his model focuses on brokers, I show that the fiduciary (RIA) divisions of dual registrants have similar conflicts, leading to limited product choice, cross-selling insurance and affiliated products, revenue sharing with third party mutual funds, higher fees, and inferior mutual fund product offerings relative to independent RIAs.

Garleanu and Pedersen (2018) model investor decisions, noting that sophisticated investors incur search costs to find good investments while unsophisticated investors do not. My results support

[10]This result is consistent with prior work showing that broker conflicts harm clients because brokers sell inferior products like load-bearing mutual funds (see Bergstresser, Chalmers, and Tufano (2009), Evans, Christofferson, and Musto (2013), and del Guercio and Reuter (2014)).

their model but also uncover a structural divide between investor types: in practice, due to high stated required minimum investments, small investors likely find it harder to locate independent RIAs, frequently settling for conflicted advice from dual-registered firms.

My work relates to a large prior literature on the role of financial advisers, although most prior literature studies brokers, not fiduciaries. An exception is Hoechle, Ruenzi, Schaub, and Schmid (2018) who find that advised clients of a large retail bank suffer relative to unadvised clients because their fiduciary advisers appear to put their employer's interest first. More generally, most research finds that brokers have conflicts and that brokerage clients tend to pay high fees and underperform: see Foerster, Linnainmaa, Melzer, and Previtero (2017), Chalmers and Reuter (2015), Anagol, Cole, and Sarkar (2013), Hackethal, Haliassos, and Jappelli (2012), and Hackethal, Inderst, and Meyer (2012). By contrast, Von Guadecker (2015) finds that households that use financial advisers have better diversified portfolios than those that do not.

My paper is also consistent with prior work on affiliated mutual funds. Christofferson, Evans, and Musto (2013) find that fund flows are less sensitive to past performance when mutual funds are distributed through an affiliated sales force. Ferriera, Matos, and Pires (2018) show that bank-affiliated mutual funds underperform by nearly 1% per year, and that this underperformance relates to conflicts of interest. Pool, Sialm, and Stefanescu (2016) find that mutual fund families acting as service providers in 401(k) plans display favoritism toward their own affiliated and underperforming funds. Finally, Hao and Yan (2012) show that investment bank affiliated mutual funds underperform, noting that these funds hold disproportionately large amounts of their IPO and SEO clients.

Last, my results complement prior work on regulator discipline and adviser fraud. Dimmock and Gerken (2012) examine a sample of RIAs and find that being a dual-registered RIA is a strong predictor of subsequent fraud. Egan, Matvos, and Seru (2019) examine broker misconduct at the employee level. About half the brokers in their sample are dual-registered as RIAs. They find that dual-registered advisers are 50% more likely to commit misconduct than standalone brokers. Further, among dual-registered firms, those that advise individual clients are more likely to engage in misconduct, and firms that advise individual clients are more likely to hire an adviser with a record of misconduct, consistent with my findings that these firms take advantage of less sophisticated investors.

2. Business environment for dual registered investment advisers

In this section, I examine how the surprise 2007 FPA lawsuit outcome impacted the business environment for dual registered investment advisers. I begin with a short history of the regulatory environment for financial advisers.

2.1. Regulatory environment for financial advisors[11]

Registered investment advisers are governed by the Investment Advisers Act of 1940 (the Act). Under Section 206 of the Act, departure from the fiduciary standard constitutes fraud upon clients. By contrast, brokers must comply with the suitability standard. Suitability is governed by FINRA Rule 2111 and requires that a firm or associated person have a reasonable basis to believe a recommended transaction or investment strategy involving a security or securities is suitable for the customer. In 1963 in SEC vs. Capital Gains Research Bureau, the Supreme Court ruled that the intent of the Act was to "eliminate, or at least expose, all conflicts of interest." The language from this ruling became the basis for describing the fiduciary standard going forward.

In the early 1990s, Merrill Lynch and other brokerage firms began charging annual asset-based fees – instead of transaction-based commissions – in some of their brokerage accounts. Historically, asset-based fees were the sole province of registered investment advisers. In 1995, the SEC commissioned the Committee on Compensation Practices, led by Merrill Lynch. The report of this committee argued that fee-based accounts would likely eliminate or greatly minimize conflicts of interest. Hence, in 1999 the SEC proposed a rule exempting fee-based accounts of brokers from the fiduciary duty implied by the Act, as long as any advice they gave was "incidental" to the brokerage services they provided. In this proposed rule, the SEC cited the 1995 report, and also argued that asset based fees were similar to amortized commissions. The 1999 rule was formally entitled Certain Broker Dealers Deemed Not to be Investment Advisers and was informally known as the Merrill Lynch Rule.

In 2004, the Financial Planning Association (FPA) filed a lawsuit against the SEC, arguing that the Merrill Lynch Rule blurred the line separating brokers from fiduciaries. Despite this pending lawsuit, the Merrill Lynch Rule became law in 2005, formalizing a fifteen-year long practice. In 2007, the Financial Planning Association won their lawsuit. Post-ruling, brokers wishing to charge asset-based fees must register with the SEC and act as fiduciaries. As described earlier, this victory took the industry by surprise and led many brokerage firms to transfer their fee-based accounts to the RIA divisions of their firms. The SEC estimated that immediately after the ruling, dual registrants moved over $300 billion of assets from brokerage fee-based accounts to RIA fee-based accounts.

In 2009, the Treasury Department proposed that the SEC establish a fiduciary duty for brokers, and in 2010, the Dodd-Frank Act permitted the SEC to pursue this proposal. Separately, near the end of 2010, the Department of Labor (DOL) released an initial (fiduciary) rule that attempted to reduce conflicts of interests for investment advisers in retirement accounts, but withdrew the rule quickly in

[11] Much of the detail in this section relies on Schoeff Jr., Mark, (2016).

the face of industry complaints. In 2013, the SEC released a request for comment on the concept of a fiduciary rule, and in 2015, President Obama endorsed a major overhaul of the initial DOL fiduciary rule. The DOL re-proposed the rule in 2015, with a final version in 2016, and an implementation date of January 2018. In February 2017, President Trump ordered the DOL to review the rule, pushing the implementation date to January 2019. In March 2018, the Fifth Circuit Court of Appeals vacated the rule, confirming this ruling on June 21, 2018. The SEC is currently working on a proposal called Regulation Best Interest in an attempt to impose a more stringent standard on brokers. At this point, the fate of Regulation Best Interest is uncertain.

2.2 Financial impact of 2007 FPA win on dual registrants

Figure 1 shows that regulatory assets under management (AUM) for dual-registrants grew from $2.5 to $6.3 trillion from 2003 to 2016, representing about 81% of all regulatory AUM, while independent RIA AUM grew from $200 billion to $1.4 trillion.[12] The source for this data is the SEC's Investment Adviser Public Disclosure (IAPD) database, which includes firms regulated by the SEC as Registered Investment Advisers (RIAs).[13] Figure 1 also presents AUM for the largest 75 dual registrants each year, which comprise 84% of all dual-registrant AUM by 2016.[14] Among dual registrants, AUM growth among large firms has significantly outpaced growth at remaining firms.

Fee-based revenue growth closely tracks fee-based asset growth among dual registrants. *Financial Planning* magazine's annual survey of the top 50 independent broker dealers indicates that fee-based revenues grew from $3.5 billion to $11 billion between 2007 and 2016.[15] Figure 2 presents these data and also shows that fee-based revenues rose from about 27% of total revenues in 2007 to about 50% in 2016. Taken together, the strong growth in RIA assets under management and the sizable change in revenue composition indicate that dual registrants accelerated their shift from brokerage accounts to advisory accounts following the 2007 ruling. While advisory assets and revenues grew dramatically, growth did not come at the expense of their brokerage business. Rather than experiencing asset outflows or revenue losses, dual-registered firms responded to the 2007 ruling by modestly growing their brokerage businesses and greatly expanding their RIA businesses.

[12] I classify firms as dual registrants if they have an affiliated broker-dealer or if they have a related party that is a broker dealer. I classify firms as independent RIAs if they do not have an affiliated or related party broker dealer and if they employ no registered representatives (brokers). I drop mutual funds, hedge funds, and robo-advisers from the sample.

[13] See http://www.adviserinfo.sec.gov. The SEC makes historical data from June 2006-present for most of the Form ADV Part 1 data points at https://www.sec.gov/help/foiadocsinvafoiahtm.html. Data from 2003-2006 was obtained via a FOIA request by Scott Yonker. I think Scott for allowing me access to this data.

[14] If a firm ever appears in the top 75 firms in any year, it is included in this figure for all years 2003-2016.

[15] https://www.financial-planning.com/news/independent-broker-dealers-had-good-2017-after-slump-fp50

3. Do dual registrants treat their fiduciary clients differently than their brokerage clients?

3.1. Data

Data comes from Form ADV, Parts 1 and 2. Part 1 data is available online from the SEC beginning in 2006, supplemented with 2003-2005 data collected from a previous FOIA request.[16] Advisers must update Form ADV yearly, providing information about a firm's advisory business, owners, clients, assets, and disciplinary actions. The initial dataset covers 26,809 unique RIAs. Dropping mutual fund and hedge fund advisers, retirement consultants, robo-advisers, and third party asset managers leaves a sample of 6,866 unique RIAs. I classify 2,484 as dual registrants because they have an affiliated broker or a related party broker. The remaining 4,382 are independent RIAs – they do not have an affiliated or related party broker-dealer nor do they employ registered representatives.[17]

I hand-collect additional data from Form ADV Part 2. Since 2011, RIAs must deliver Form ADV Part 2 (also known as a *brochure*) to clients and potential clients. The SEC requests the brochure be in a narrative format in plain English and include the principal owner of the business, the services provided, a description of compensation including a fee schedule, whether advisers receive commissions in addition to advisory fees, whether the firm receives performance-based fees, types of clients and minimum account sizes, methods of analysis for selecting investments, disciplinary actions in the past 10 years, other affiliations of advisers, participation in client transactions, brokerage practices, client referrals, and custody information.

The SEC provides each firm's most recently filed Form ADV Part 2 on the Investment Adviser Public Disclosure (IAPD) website at https://adviserinfo.sec.gov/.[18] Because I hand collect these data, I limit the Form ADV Part 2 sample to firms in the top 75 dual-registered or top 75 independent RIAs at any point during the 2003-2016 period (hereafter, the "Top 75" sample). There are 94 dual registrants that were in the top 75 at any point and 149 independent RIAs. This sub-sample covers the bulk of assets under management, with 74% of dual-registrant AUM and 51% of independent RIA AUM.

Table 1 Panel A presents summary statistics using ADV Part 1 data for the full sample.

[16] See footnote 13.

[17] There are 1,658 firms that do not have an affiliated or related party broker dealer but do employ at least one registered representative (also known as a broker). I drop these entirely from the sample because it is not clear how to classify them. On one hand, the registered representative may still be acting as a broker for some clients. On the other, the registered representative may have retained his brokerage license although he no longer accepts brokerage clients.

[18] My Part 2 analysis uses the most recent brochures since the SEC does not make historical brochures publicly available. I argue that the recent brochures are likely sufficient since the brochures have only been required since 2011, and because the main data I gather relates to: a) revenue sharing, which is not likely to change much over time based on my review of historical mutual fund prospectuses which often list the brokers with whom they revenue share, b) fees, which might actually decrease over time (in several brochures, firms noted that they had reduced their maximum fee in the prior year, with no firms noting an increase in fees), and c) disciplinary actions, for which Form ADV Part 2 provides ten years of historical data. To the extent that revenue sharing arrangements and fees change over time, my results in this area should be interpreted with this caveat in mind.

Appendix 1 contains descriptions of all variables. The table reports both means and medians calculated across firms by year and then averaged across years, and also presents t-tests for differences in means. The average (median) AUM of a dual registrant is about $4.5 billion ($205 million), compared to an independent RIA with an average (median) of $369 million ($132 million). Following this pattern, dual registrants average nearly 9,800 advisory clients while independent RIAs have about 650, with lower medians of 731 and 406, respectively. The above differences in means are highly statistically significant. Turning to client composition, about 61% of dual registrant clients are individuals not classified as high net worth clients, compared to 57% for independent RIAs, a difference that is statistically but not economically significant.

The average dual registrant has 363 employees, of which 194 are investment advisory representatives (IARs) and 253 are registered representatives. By contrast, the average independent RIA has 9 total employees, of which 5 are IARs. IARs are fiduciaries and represent the RIA side of the business while registered representatives are non-fiduciary brokers. These differences in employee counts are statistically significant. The average number of clients per IAR is 135 for dual registrants and 142 for independent RIAs; this difference is not significant.

Table 1 Panel B presents similar statistics for the Top 75 sample. The means for dual registrants' AUM, clients, and employees are ten times the size of the average dual registrant in Panel A, with smaller differences for independent RIAs. Both types of firms serve a high proportion of individual clients and serve a similar number of clients per adviser.

Finally, Table 1 Panel C presents hand-collected data from Form ADV Part 2 for the Top 75 sample. Defining retail clients as those with less than $100,000 to invest, about 55% of dual registrants accept retail clients compared with just 9% of independent RIAs. This variable is correlated with the "percent of individual clients" variable from ADV Part 1, but more precisely measures whether the adviser accepts small retail clients. Based on differences in the two variables, the "percent of individual clients" is a particularly poor proxy for "accepts retail clients" for independent RIAs. This disparity occurs because individuals that are not formally defined as having "high net worth" are still subject to high minimum investments at most independent RIAs. Because I wish to understand how dual registrants serve retail clients, most analyses use the "accepts retail clients" variable.

In the next several sections, I use these data to examine aspects of the fiduciary-client relationship, including conflicts of interest, fees, disciplinary action, and asset selection.

3.2. Conflicts of Interest

This section explores the first aspect of the client-fiduciary relationship: conflicts of interest. Prior literature indicates that brokers frequently have conflicts when recommending investments to

clients and that these conflicts result in worse outcomes for brokerage clients. I perform a similar analysis for RIAs. Ideally, an RIA held to the fiduciary standard of care would have fewer conflicts of interest than a broker held to the lower suitability standard.

3.2.1. Insurance product cross sales

The first conflict variable relates to the likelihood that advisers cross-sell insurance products to RIA clients, and is measured in two ways. The first is a dummy variable set to one if the firm has an affiliated or related party insurance company. The second is the proportion of employees that are also licensed insurance agents. Table 1 Panel A shows that dual registrants have a higher proportion of IARs licensed to sell insurance (77% vs 23% for independent RIAs), and that dual registrants are more likely to have an affiliated or related party insurance company (31% versus 7%, respectively).

Table 2 presents Logit and OLS regressions in which the dependent variable is a dummy set to one if the firm has an affiliated or related party insurance company (Columns (1) and (2)), or the proportion of employee insurance agents (Columns (3) and (4)). The Logit models present odds ratios. An odds ratio for a dummy variable measures the odds of the dummy variable being one divided by the odds of the dummy variable being zero. The odds ratio cannot be negative. An odds ratio of one indicates equal odds for the two groups; an odds ratio less than one indicates that the group coded as zero has higher odds than the group coded as one; an odds ratio more than one indicates that the group coded as one has higher odds than the group coded as zero. Hence, (1 - odds ratio) represents the percentage difference between the two groups. In all columns, standard errors are clustered by year and firm. The key independent variable is a dummy set to one if the firm is a dual-registrant and to zero if the firm is an independent RIA. Controls include the log of size winsorized at the 1% level, the estimated proportion of individual clients, a dummy variable set to one if the firm offers financial planning services, the proportion of clients receiving financial planning services, and time trends.[19]

Starting with Column (1) of Panel A, dual registrants are more likely than independent RIAs to have an affiliated or related party insurance agency. The odds ratio of 18 in Column (1) indicates that the odds for dual registrants having an insurance agency are 1700% higher than the odds for independent RIAs. Column (2) includes firm fixed effects. The significant coefficient on the dual-registrant dummy implies that the Column (1) result also holds in the time series for dual registrants.

Columns (3) and (4) use the proportion of employees licensed to sell insurance as the dependent variable. This variable is available since 2011. The coefficient of 0.32 on the dual registrant dummy in

[19] Effectively, financial planning services are services beyond asset allocation and investment selection, and include cash flow planning, retirement planning, and estate planning. Many firms offer financial planning for a separate fee, but these data indicate that few clients take advantage of it.

Column (3) indicates that being a dual registrant increases the proportion of employees licensed to sell insurance by 0.32. Relative to the mean proportion of 0.40 reported in Table 1 Panel A, the difference is economically and statistically significant. The fixed effects regression in Column (4) indicates that the proportion of dual registrant employees licensed to sell insurance increases by about 5% faster per year than the proportion of independent RIA employees licensed to sell insurance.

Panel B uses the Top 75 sample. The regressions add a dummy variable set to one if the firm accepts retail clients, which I hand collect from Form ADV Part 2. Column (1) shows that both dual registrants and firms with retail clients are more likely to have affiliated or related party insurance agencies. Column (2) interacts the dummy variables for "dual registrant" and "accepts retail clients." The odds ratio on "dual registrant" indicates that the odds for dual registrants having an insurance agency are about 2400% higher than the odds for independent RIAs. The odds ratio on "accept retail clients" indicates that the odds for having an insurance agency are about 1360% higher for firms with retail clients than the odds for firms without. Combining these two variables and the interaction variable, dual registrants with retail clients are more likely than independent RIAs without retail clients to have an affiliated insurance company. Further, dual registrants with retail clients are more likely than dual registrants without retail clients to have an affiliated insurance company (these two results are reported at the bottom of the table). Both results are statistically significant.

Column (3) shows that both dual registrants and firms with retail clients employ more insurance agents. Column (4) finds that the subset of dual registrants with retail clients drives this result, since each coefficient on the relevant dummy variables is insignificant or marginally significant, but the sum of the three coefficients is significant. Hence, dual registrants have worse insurance-related conflicts of interest than independent RIAs. These results are strongest for dual registrants with retail clients – this subset is more likely to offer insurance products compared to either dual registrants without retail clients or to independent RIAs with or without retail clients.

3.2.2. Simultaneously sponsoring and managing wrap programs

The second conflict is simultaneous sponsorship and management of wrap programs. The SEC describes a wrap program as follows: "A program under which any client is charged a specified fee or fees not based directly upon transactions in a client's account for investment advisory services (which may include portfolio management or advice concerning the selection of other investment advisers) and execution of client transactions."[20]

The portfolio manager of the wrap program manages the assets (usually mutual funds), and the

[20] https://www.law.cornell.edu/cfr/text/17/275.204-3#

sponsor of the wrap program, for a portion of the fee, administers the program and selects investment advisers. The SEC notes: "Because wrap fee programs bundle services into a single fee, total fees to a client…may be more or less than obtaining such services separately."[21] Further, despite its name, a wrap program does not cover all fees; for example, if the program invests in mutual funds, the operating expenses of the funds are charged separately. Also, the adviser may choose to execute trades through a broker not covered by the wrap fee (called "trading away"), leading to additional transaction fees.

When the same firm manages and sponsors a wrap program, the potential for conflict exists because the firm will earn higher total revenue when the investment adviser, acting as sponsor, chooses a firm-managed wrap program. A similar conflict arises when a firm offers affiliated mutual funds. The SEC has disciplined several firms for violations related to wrap programs.[22] Most of these disciplinary actions targeted firms charging excessive fees.

Table 3 presents Logit regressions in which the independent variable is a dummy set to one if the firm simultaneously manages and sponsors a wrap program. Columns (1) and (2) include all firms and Columns (3) and (4) repeat these regressions for the Top 75 sample. Independent variables are as in Table 2. The Logit model in Column (1) finds that the the odds for dual registrants simultaneously managing and sponsoring wrap programs are about 440% higher than for independent RIAs. Column (2), which adds firm fixed effects to the Logit model, indicates that neither dual registrants nor independent RIAs have significant within-firm variation for simultaneous management.

Column (3) shows that dual registrants and firms with retail clients are most likely to simultaneously manage and sponsor wrap programs. Column (4) indicates that the odds for dual registrants without retail clients to simultaneously manage and sponsor wrap programs are about 770% higher than for independent RIAs. Among independent RIAs, accepting retail clients does not change the likelihood that the firm will simultaneously manage and sponsor a wrap program. Combining the coefficients, (at the bottom of the table), dual registrants with retail clients are more likely to simultaneously manage and sponsor a wrap program than independent RIAs without retail clients. Further, dual registrants with retail clients are more likely to simultaneously manage and sponsor a wrap program than dual registrants without retail clients. These results provide strong evidence that dual registrants have higher conflicts of interest relating to wrap programs than independent RIAs. Moreover, dual registrants that accept retail clients have the highest conflicts.

[21] https://www.sec.gov/oiea/investor-alerts-and-bulletins/ib_wrapfeeprograms.
[22] https://www.sec.gov/oiea/investor-alerts-and-bulletins/ib_wrapfeeprograms.

3.2.3. Revenue sharing payments from third party mutual fund families

This section examines revenue sharing payments from third party mutual fund families. As noted by Morgan Stanley "Revenue-sharing payments are generally paid out of the fund's investment adviser, distributor or other fund affiliate's revenues or profits and not from the fund's assets. However, fund affiliate revenues or profits may, in part, be derived from fees earned for services provided to and paid for by the fund."[23] Revenue sharing payments to fund distributors (brokers or RIAs) come from profits of fund families and not directly from mutual fund assets. They may be paid in lieu of, or in addition to, distribution fees (12b-1 fees) paid directly from mutual fund assets.

Mutual fund families share revenue with RIAs for numerous reasons, including but not limited to: 1) permitting the family's funds to be listed on an adviser's trading platform (commonly referred to as "shelf space") 2) sponsoring meetings and conferences and reimbursing training, entertainment, travel, and other adviser benefits, 3) allowing the family's funds to be included on a firm's "preferred" list of funds, and 4) purchasing brokerage firm sales data analytics. As Morgan Stanley discloses in Form ADV Part 2:

> These facts [referring to revenue sharing arrangements] present a conflict of interest for Morgan Stanley and our Financial Advisors to the extent they lead us to focus on funds from those fund families that commit significant financial and staffing resources to promotional and educational activities instead of on funds from fund families that do not purchase sales data analytics or do not commit similar resources to these activities.[24]

Historically, revenue sharing payments allow mutual fund families that distribute funds through brokers (broker sold funds) to reward top brokers and encourage future sales. Brokers and representatives from broker sold fund families tend to have long-standing personal and professional relationships. As these brokers enter the fee-based RIA business as dual registrants, they continue to receive revenue sharing from fund families. By contrast, since independent RIAs are not brokers, independent RIAs typically do not have these relationships with broker sold fund families.

Data on revenue sharing is notoriously difficult to obtain. Mutual fund families disclose these arrangements in fund prospectuses, but these data are not captured in standard mutual fund databases. In prospectuses, fund families do not always report the names of firms they share with, and rarely report dollar amounts. On the RIA side, dual registrants disclose some information about revenue

[23] See https://www.morganstanley.com/assets/pdfs/wealth-management-disclosures/8962360-WM-Revenue-Sharing-Fund-Families_m3f_L.pdf
[24] See https://www.morganstanley.com/assets/pdfs/wealth-management-disclosures/8962360-WM-Revenue-Sharing-Fund-Families_m3f_L.pdf

sharing arrangements in Form ADV Part 2. However, disclosure content varies widely. Further, the SEC has required Form ADV Part 2 only since 2011 and the form is written in a narrative format, making it more challenging to standardize these data. Hence, I am one of few academics to directly examine revenue sharing. Christofferson, Evans, and Musto (2013) find that revenue sharing increases fund flows but does not appear to impact fund performance. However, these authors focus only on revenue sharing that is revealed because the fund family has a defensive 12b-1 plan, and therefore, do not capture all occurrences of revenue sharing.

Since at least 2003, the SEC has expressed concern about revenue sharing conflicts of interest. In 2003, the SEC fined Morgan Stanley $50 million to settle allegations that its brokers did not inform customers about revenue-sharing deals. In addition to the payment, Morgan Stanley was required to disclose its revenue-sharing practices on its website. Edward Jones was fined $75 million in 2004 for similar violations. (Johannes and Hechinger (2004)). Despite these large settlements, there have been several recent high-profile disciplinary actions related to revenue sharing (for example, Geneos Wealth Management ($2.2 million in 2018) and Voya Financial Advisors ($3 million in 2017)), indicating that RIAs continue to engage in revenue sharing and do not always disclose it properly.

I collect revenue sharing data from Form ADV Part 2 for the top 75 sample. Table 4 presents Logit regressions. In Columns (1) and (2) the dependent variable is a dummy set to one if the firm engages in revenue sharing, and in Columns (3) and (4) the dependent variable is a dummy set to one if the firm segregates funds into tiers, with revenue sharing funds in the top tier and non-revenue sharing funds in a lower tier. Since firms do not have to disclose the latter data, this variable is a lower bound on the frequency of preferred fund lists. Because these variables are each measured once over the life of the firm, regressions do not include time dummies. The odds ratio for the dual registrant dummy in Column (1) indicates that the odds that dual-registrants without retail clients will engage in revenue sharing are about 3700% higher than the odds for independent RIAs. This finding is consistent with the idea that long-standing relationships between broker sold mutual fund families and brokers have survived the transformation of brokers to RIAs. Similarly, the odds ratio for "accepts retail clients" is 12.3, indicating that the odds for firms that accept retail clients to revenue share are about 1130% higher than the odds of revenue sharing for firms that do not accept retail clients.

Column (2) includes an interaction of the two dummy variables, finding that the positive coefficient on the retail dummy variable is driven entirely by dual registrants that accept retail clients. The odds ratio for the interaction variable is extremely large because it represents a very small sample: the 1% of RIAs that engage in revenue sharing interacted with the 9% of RIAs that accept retail clients. Results are similar for whether the firm categorizes funds into tiers, as shown in Columns (3) and (4).

Overall, these results indicate that dual registrants are far more likely to engage in revenue sharing, especially dual registrants that accept retail clients.

In addition to reviewing Form ADV Part 2, I review supplemental revenue-sharing disclosures from dual registrants when available. Of the top 25 dual registrants, 23 provide online documentation naming specific revenue sharing fund families. Appendix B provides a list of the ten fund families with the most mentions from these 23 dual registrants. I cross-check these top 10 fund family prospectuses and note that the fund families also name these dual registrants as their revenue sharing partners. This review, along with Table 4 results, yields two key stylized facts. First, when brokerage firms reinvented themselves as RIAs after the 2007 FPA lawsuit win, fund families and dual-registrants continued their long-standing relationships. Hence, the overwhelming majority of revenue sharing payments to dual registrants comes from broker sold fund families. Also, dual registrants continue to offer the funds from these families to their RIA clients. As an article from 2014 states:

> Broker-dealers have long been moving in the direction of offering more institutional share classes in more fee-based accounts, "converting" assets in funds that assess a load or include annual distribution and marketing fees. To move to a lower-cost share class for any manager you're already using to the end investor is just intelligent," said Michael S. Falk, partner at Focus Consulting Group."[25]

3.2.4. Affiliated mutual funds

The final conflict of interest involves selling mutual funds managed by a corporate affiliate like a bank, investment adviser, or insurance company. RIAs face a conflict for these funds since the parent firm earns both management and advisory fees. I perform this analysis on the Top 75 subsample. Column (1) of Table 5 reports results for Logit models in which the dependent variable is set to one if the firm has affiliated mutual funds. The odds ratio of 4.0 for the dual registrant dummy variable indicates that the odds for dual registrants simultaneously managing and sponsoring a wrap program are about 300% higher than for independent RIAs. This result is consistent with summary statistics in Table 1 Panel B. The odds ratio for the retail dummy is insignificant. The regression in Column (2) shows that the odds that dual registrants without retail clients will have affiliated funds are about 250% higher than for independent RIAs. Considering the interaction of the dual registrant and retail dummies, the odds that dual registrants with retail clients will have affiliated funds are 245% higher than for independent RIAs. Columns (3) and (4) present regressions in which the dependent variable is set to

[25] https://www.investmentnews.com/article/20141121/FREE/141129983/brokers-push-to-fee-based-comp-slams-higher-cost-funds

one if the firm performs less rigorous due diligence on affiliated funds. These results, which include only firms with affiliated funds, are similar to the Column (1) and (2) regressions: dual registrants, with and without retail clients, perform less rigorous due diligence on affiliated funds.

Overall, dual registrants have far more conflicts than independent RIAs. First, dual registrants cross-sell insurance products to fiduciary clients. Second, they simultaneously manage and sponsor wrap fee programs. Third, they engage in revenue sharing arrangements with the same broker sold fund families they sell their brokerage clients, and finally, they sell affiliated funds and perform less rigorous due diligence on these funds. Results are strongest for dual registrants that serve retail clients, consistent with prior theoretical models predicting that advisers will exploit unsophisticated clients.

3.3. Fees

Table 1 Panel C shows that dual registrants charge higher fees to both high net worth and retail clients. High net worth clients of dual registrants pay an average of 1.4% of assets compared to 1% of assets for independent RIA clients. This difference is more dramatic for retail clients with assets under $100,000: dual registrants that serve retail clients charge 2.2% of assets, compared to the 1.2% of assets charged by independent RIAs.[26] However, dual registrants are also more likely to serve retail clients: 55% of the top 75 dual registrants explicitly permit retail clients compared to only 9% of independent RIAs. Because independent RIAs manage far fewer assets, a retail client's ability to locate an independent RIA willing to accept him may be limited. Further, advisory clients of dual registrants do not appear to receive additional services for these higher fees: only 3% of dual registrant clients receive additional financial planning, similar to 5% of independent RIA clients.

Table 6 performs regression analyses of fees. In Columns (1) and (2) the dependent variable is fee as a percent of assets for clients over $1 million in assets (large clients). In Column (1) the coefficient on "dual registrant" indicates that fees for large clients are about 11 basis points higher for dual registrants, relative to an average fee of 114 basis points reported in Table 1 Panel C. Firms that accept retail clients charge fees about 35 basis points higher. Column (2) interacts the two dummy variables. Coefficients on each variable are insignificant, indicating no fee differences between dual registrants without retail clients and independent RIAs without retail clients nor between independent RIAs with retail clients and independent RIAs without retail clients. However, the sums of the interaction variables indicate that fees for large clients of dual registrants with retail clients are 50 basis

[26] When sharing this paper with industry participants, several noted that many RIAs charge lower fees than they disclose in Form ADV Part 2. However, it is not clear whether this caveat applies to small retail investors. Further, I can only observe the fees that the firms disclose. Even if most investors do not pay the stated fees, there is no systematic reason to believe that the difference in fee disclosure between dual registrants and independent RIAs should be systematically biased. Still, given these caveats, the fees I disclose should be considered an upper bound on the fees that clients actually pay.

points higher than fees for independent RIAs without retail clients, and that fees for dual registrants with retail clients are 49 basis points higher than fees for dual registrants without retail clients. Column (3) presents regressions for firms that serve retail clients. The dependent variable is the fee charged on assets less than $100,000. The coefficient is 0.89; fees for retail clients are 89 basis points higher for dual registrants than independent RIAs, a 75% difference compared to the average fee of 1.19% for independent RIAs. Results of this section indicate that dual registered firms that accept retail clients appear to charge higher fees to both wealthy and retail clients relative to independent RIAs.

3.4 Disciplinary actions

This section investigates whether dual registrants face more regulatory disciplinary action than independent RIAs. Focusing on the largest 75 firms in each category in Table 1 Panel B, 10% of dual registrants employ a convicted felon compared to 0% of independent RIAs. Dual registrants are more likely to employ an adviser that has: made a false statement to the SEC (21% for dual registrants compared to 1% for independent RIAs), violated SEC statutes (38% compared to 1%), had an SEC order against them (55% compared to 2%), or had a court enjoin an action (14% compared to 0.3%).

Data from Form ADV Part 2 reported in Table 1 Panel C provide significantly more detail. Here, investment advisers report detail covering the last 10 years of disciplinary actions against them by the SEC, FINRA, or other regulators in a narrative format. I review these data and categorize them as described in Table 1 Panel C. Over half the dual registrants report at least one disciplinary action; among these firms the average fine is $60 million dollars in total over 10 years and the average number of disciplinary actions is one per year. Most actions relate to the brokerage side of the business, including misleading investors, overcharging clients for mutual fund or variable annuity products, and improper data reporting or other internal control violations. However, several violations occur on the RIA side of the business. Specifically, 19% of dual-registrants report that their investment adviser representatives (IARs) misled clients, 15% report a conflict of interest, 13% cite lack of proper supervision of IARs, 10% overcharged 12b-1 fees on mutual funds, and 6% overcharged advisory fees. By contrast, among the 75 largest independent RIAs, there is a single disciplinary event (misleading investors) for a single firm. Fees for IAR related dual-registrant incidents average about $7.7 million in total over the 10-year period, with a single fee of $20,000 for one independent RIA over this period.

Table 7 performs Logit regressions. Panel A includes all firms. Dependent variables include dummies for convicted felon, convicted of misdemeanor, false statement to SEC, violate SEC statutes, SEC order against, and court enjoined. Control variables are the same as in Table 3. All regressions indicate a significantly higher likelihood of each disciplinary action for dual registered firms, ranging from false statements to the SEC for which dual registered firms have a 180% higher odds ratio than

independent RIAs; to misdemeanors, for which dual registrants have a 1680% higher odds ratio than independent RIAs. These actions are highly correlated with fund size, with the proportion of individual clients, and whether the firm offers financial planning.

Panel B includes Top 75 firms and also includes variables for whether the firm serves retail clients. Results in Panel B show that being a dual registrant increases the likelihood of having committed all six types of actions. For "felon" this regression cannot be estimated because none of the Top 75 independent RIA employees have a felony conviction. The interaction regressions also provide strong evidence that being a dual registrant that accepts retail clients is associated with a significantly higher likelihood of having a disciplinary action, relative to independent RIAs and to dual registrants that do not accept retail clients. I do not perform regressions for the detailed actions described above from Table 1 Panel C, because only one independent RIA has been subject to any of these actions, making a regression analysis impossible.

Clearly, these results indicate stark differences between the likelihood of a disciplinary action for dual registrants compared to independent RIAs, especially for dual registrants that serve retail clients. A fair criticism of this analysis is that dual-registered advisers are subject to more regulatory oversight than are independent RIAs because dual-registered advisers are regulated by both FINRA and the SEC. The SEC has also recently stated that they will increase their focus on dual registrants. Further, dual registrants manage more assets and have more employees, thereby increasing the chance of fraud or disciplinary action for one or more employees.

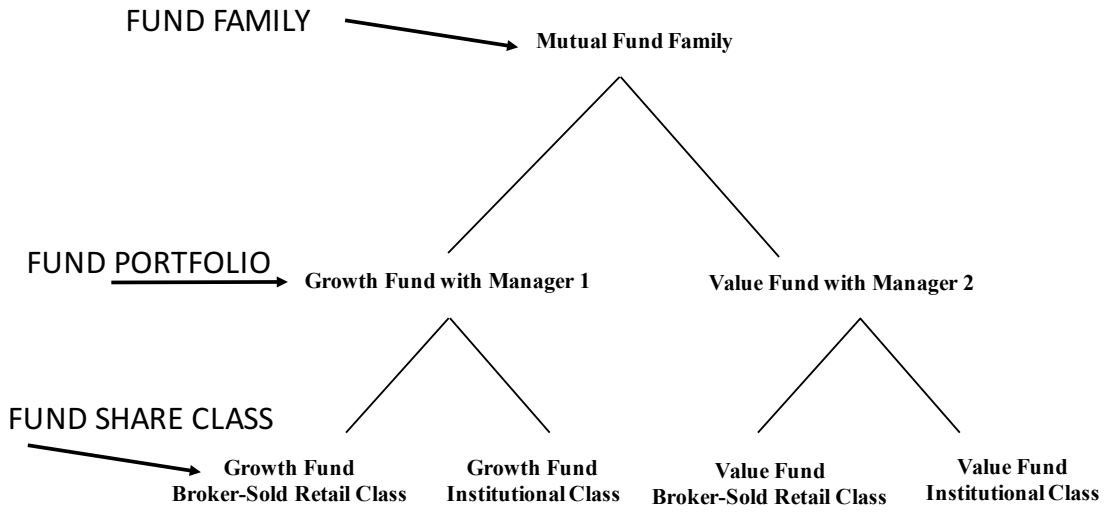
While these critiques are valid, they likely do not explain all the differences I observe. First, the regressions control for firm size. Tests that control for the number of employees produce nearly identical results. Second, employers choose to hire employees with past felonies or misdemeanors, and this decision is separate from future disciplinary actions. Third, Table 1 Panel C shows that dual registrants are more likely to be disciplined for RIA-related violations (not just brokerage violations) than independent RIAs. Fourth, this critique does not explain differences between dual registrants that accept retail investors and those that do not. Finally, my findings are consistent with Dimmock and Gerken (2012) and Egan, Matvos, and Seru (2019). The results of this section indicate a higher incidence of disciplinary actions against dual registrants, especially those that accept retail investors.

3.5 Asset Selection

Because RIA clients pay asset-based fees rather than commissions, a fiduciary's incentive to sell high-commission products should be muted. However, fee structure cannot mitigate every conflict. One conflict that disproportionately affects dual-registered fiduciaries is revenue sharing agreements with broker sold mutual fund families. Based on dual registrants' Form ADV Part 2 disclosures, these

arrangements frequently induce them to suggest the commission-free share classes of funds offered by broker sold families to their fiduciary clients. For example, a dual-registered adviser might sell the Class A share of the MFS Core Equity Fund, which pays a 5.75% one-time commission, to brokerage clients, but offer the commission-free Class I share of this fund to fee-based RIA clients. These two share classes (A and I) have different commission structures and eligibility requirements, but have the exact same underlying portfolio assets and manager. Figure 3 presents a stylized example of a typical mutual fund portfolio distribution structure. A mutual fund family (also known as a management company), offers two mutual fund portfolios (funds), each distributed through two different channels (share classes). In the MFS example, MFS is the fund family, the Core Equity Fund is the portfolio, and Classes A and I are the distribution channels/share classes.

Figure 3: Stylized example of mutual fund distribution



Clearly, classes A and I of the MFS Core Equity Fund are two versions of the exact same fund portfolio. The only differences between the two classes are 1) distribution method and b) eligibility requirements. Brokers earn commissions selling Class A shares, which have a minimum investment of $1,000 and are available to all investors. Class I shares are distributed in two ways. The first is directly from MFS to institutional investors. The second is via investment advisers to fee-based clients. MFS, like most broker sold mutual fund families, waives the Class I minimum requirement for fee-based advisers.[27] A similar structure applies to a fund family that mainly sells shares directly to the public, such as Vanguard. For example, certain Vanguard fund portfolios have a low minimum share class that is sold directly to the public ("Investor" shares) and a higher minimum class that is designed for

[27] While MFS does not impose a minimum investment for Class I, many fund families impose a minimum investment of $1,000,000 for actual institutions that buy Class I shares.

institutions ("Institutional" shares). Of course, Vanguard clients do not pay brokerage commissions in either share class.

As discussed earlier, long-standing relationships between brokers and broker sold mutual fund families incentivize dual-registered RIAs to choose institutional share classes of broker sold mutual fund portfolios. To test the impact that this conflict has on RIA client welfare, I investigate the performance of institutional share classes of funds that also offer a broker sold share class, comparing this performance to mutual funds that are offered by direct-to-consumer fund families.

4. Dual registrants and investor welfare

4.1. Aggregate fund flows

I begin by showing that significant capital flowed into the commission-free institutional share classes of broker sold mutual fund portfolios in the wake of the 2007 FPA ruling. Share class level data is available from the CRSP Mutual Fund Database. Appendix C details my comprehensive review of these data to correctly classify each share class of each mutual fund portfolio into one of four standardized categories: "direct-sold retail" (a low minimum share class distributed directly from the fund family with no commission), "broker sold retail" (a low minimum share class distributed through a broker for a commission), "institutional" (a commission-free share class with restrictions on either minimum investment and investor/adviser eligibility; may have a direct-sold or broker sold counterpart or be an institutional-only (singleton) share class), and "retirement-only" (a share class restricted to retirement plans; may have a direct-sold or broker sold counterpart or be a singleton share class). The sample includes only actively managed equity and balanced (equity and bond) funds. This process results in numerous reclassifications from the existing CRSP data, as discussed in Appendix C.

Using this standardized share class data, I aggregate fund assets and cumulate fund flows at the share class level for 2003-2016 and plot these data in Figures 4 and 5, respectively. Figure 4 shows that while assets in broker sold and direct-sold share classes have leveled off, assets in institutional and retirement share classes have grown. Figure 5 indicates that fund flows to all four classes grew through 2007, but after 2007, the broker sold share class suffered outflows while the institutional share class experienced inflows. This shift in flows almost perfectly tracks the shift in dual-registrant firm revenue and AUM from commission- to fee-based after the 2007 FPA ruling, providing evidence that dual registrants shifted their clients from broker sold to institutional classes.

Institutional share classes of mutual funds are offered by three types of fund families: mostly broker sold (like MFS), mostly direct-sold (like Vanguard), and institutional-only (like GMO). Figure 5 aggregates these three types of families. Figure 6 presents a similar flow graph that disaggregates the

institutional share class into these three types of families: Institutional: Has broker sold counterpart, Institutional: Has direct-sold counterpart, and Institutional: Singleton. To be included in Figure 6, each broker sold share class and each direct-sold share class must also have an institutional share class available. This figure shows that about 65% of institutional flows accrue to institutional share classes of portfolios that also have a broker sold share class, consistent with dual-registered brokers moving client assets out of commission-based brokerage accounts and into fee-based fiduciary accounts. In fact, after 2007, the graph indicates a nearly one-to-one correspondence between outflows from broker sold shares and inflows into institutional share classes of the same underlying fund portfolios.

As final evidence that dual registrants moved clients from broker sold to institutional share classes of the same funds, I hand collect data from mutual fund prospectuses on eligibility restrictions for institutional share classes. I create a dummy variable set to 1 if clients of investment advisers are permitted and zero otherwise. Averaging this variable across institutional share classes by year and across years, I find that 64% of all institutional share classes accept investment advisers. However, this value is 76% for institutional classes of broker sold funds, just 34% for institutional classes of direct-sold funds, and 49% for singleton institutional classes. From the perspective of mutual fund families, it appears that after the 2007 ruling, many broker sold mutual fund families realized that their broker sold assets were in jeopardy, but saw an opportunity for new capital flows into institutional share classes based on their long-standing relationships with dual registrants.

4.2. Share class characteristics

Table 8 presents summary statistics of mutual fund data, and Appendix 1 provides descriptions of key variables. Panel A Column 1 reports 5,470 separate fund portfolios in the sample, with average assets of $742 million. Flows are about $4.8 million per year, with flows as a percent of assets under management (AUM) at 38%, and fund age of the oldest share class of 10 years. Turnover ratio is 93%, and 64% are domestic equity, 12% are balanced, and 24% are foreign equity. These data are similar to recent studies, such as Berk and van Binsbergen (2015).

Panel B compares share classes by distribution channel. Column 1 compares broker sold retail to direct sold retail and finds that broker sold share classes are smaller, with lower dollar flows but higher percent flows and expense ratios. Column 2 compares broker sold to institutional and finds that broker sold are larger, but have far lower dollar and percent flows. Further, broker sold are older, with higher expenses and turnover ratios, and are more likely to be either domestic or balanced funds rather than foreign equity funds. Column 3 compares direct sold retail to institutional and finds that direct sold retail are larger, with worse flows, higher age, higher expenses and turnover ratios, and are more likely to be either domestic or balanced style and less likely to be foreign equity style.

Panel C reports data for the institutional share class, divided into three categories based on whether the fund portfolio also offers a broker sold class, a direct sold class, or neither (singleton portfolio). Comparing share classes that also have a broker sold class to those that also have a direct sold class, those with a broker sold class are older with slightly lower expenses and are more likely to be balanced funds. However, the two classes are similar in age, size, and flows. Comparing institutional share classes that also have a broker sold class to the singleton institutional class, those with a broker sold class are smaller but older, with higher flows, higher turnover, and are far more likely to be domestic or balanced style and less likely to be the foreign equity style. Finally, comparing institutional classes of portfolios that also have a direct sold class to singleton institutional portfolios, those that also have a direct sold class are smaller and younger with higher expenses and are far more likely to be domestic equity style and less likely to be foreign equity style.

4.3 Performance

Despite adviser conflicts of interest, clients likely focus on after-fee performance. Hence, if institutional share classes of broker sold funds have good risk-adjusted performance, then these conflicts may matter less to clients. The next section examines the performance of this share class, with an emphasis on 1) the top revenue sharing fund families, and 2) dual registrant affiliated funds.

For performance, I calculate gross alpha, net alpha, and two other measures, following Berk and van Binsbergen (2015). These authors estimate a manager's skill as the value that his fund extracts from the markets (hereafter *gross value added*), calculated as the gross excess return over a benchmark (hereafter *gross alpha*) multiplied by assets under management.[28] They argue that because investors rationally allocate capital to good past performers, fund size is endogenously related to managerial skill: if investors are rational, the best managers should have the largest funds. Hence, while gross alpha – a return measure – is expected to deteriorate as funds grow larger, as long as gross alpha is not negative, gross value added will be positive and growing in fund size. Berk and van Binsbergen (2015) find that over the period 1977-2011, the average mutual fund has a statistically significant gross value added of about $3.2 million per year, providing evidence for skill among fund managers.

[28] To estimate each fund's benchmark, I use an investment set comprised of 11 Vanguard index funds, including funds that hold non-U.S. stocks as in Berk and van Binsbergen (2015). Funds include: S&P 500 fund (VFINX), extended market index fund (VEXMX), small cap index (NAESX), European stock index (VEURX), Pacific Stock Index (VPACX), value index (VVIAX), Balanced index (VBINX), Emerging markets stock index (VEIEX), Mid-cap index (VIMSX), Small-cap growth index (VISGX), and Small cap value index (VISVX). I require 24 months of returns to estimate coefficients. This a benchmark that was fully investible and available to all mutual fund investors for the whole period. I regress each fund's return on Vanguard return, and use the beta coefficients to estimate benchmark returns each period. I subtract the benchmark return from the gross (net) fund return to calculate gross (net) alpha each month. Results using the Jensen (1968) single factor, the Fama French (1992) three factor, or the Carhart (1997) four factor models are statistically and economically similar and are available on request.

Using a similar approach, I create a performance measure called *net value added*, calculated as a fund's excess net-of-fees return over a benchmark (hereafter "*net alpha*") multiplied by fund size. Net value added measures the dollar value of a fund manager's gross value added that is passed on to investors after fees. While Berk and van Binsbergen (2015) do not explicitly calculate net value added, they do calculate net alpha. Over their sample period, they find that net alpha for the average mutual fund is approximately zero. Similar to gross value added, net alpha must be positive for net value added to be positive. Net value added also incorporates the endogenous impact that flows have on fund size and profitability. A large fund with a modest net alpha can still deliver significant net value added.

Table 9 reports performance data. Column 1 aggregates fund share classes to the portfolio level. At this level, equally-weighted gross annual alpha is about 28 basis points per year, while value-weighted gross annual alpha is much higher at 107 basis points. These results indicate that larger funds have higher returns, consistent with Berk and Green's (2004) theory that investor capital will flow to the largest funds. Equally-weighted net alpha is -99 basis points per year, while valued weighted net alpha is 8 basis points, consistent with differences in gross alpha. Annual gross value added at the portfolio level is $5.76 million, a bit higher than the gross value added reported by Berk and van Binsbergen (2015). By contrast, net value added is -$0.29 million per year, indicating that after expenses and taking fund size into consideration, the average fund does not add value.

Focusing on distribution channel results in Column 2 to 5, equal and value weighted gross and net alphas are worse for broker sold share classes relative to all other channels. Further, value weighted net alpha is negative for broker sold share classes but positive for all other distribution channels. While gross value added for this distribution channel is the second highest, at $3.36 million, net value added is by far the lowest, at -$1.87 million. The broker sold retail channel also has the distinction of being the only share class with negative net value valued. Overall, broker sold share classes have the worst outcomes, while direct sold retail classes and institutional classes have the best outcomes.

Turning to Panel B, many differences between broker sold retail classes and other distribution channels in Columns 1-2 are both economically and statistically significant. By contrast, Column 3, which compares direct sold retail share classes to institutional share classes, indicates more modest differences. While direct sold retail share classes have better equal-weighted gross alphas than institutional share classes, there are no differences among value-weighted gross alphas, nor among equal or value weighted net alphas. Value-weighted net alphas are positive for both channels. Direct sold retail share classes have higher gross value added and net value added.

Panel C compares means for the subsamples of the institutional share class. While all three categories have significantly positive gross alphas, both value and equal weighted, only institutional

portfolios with a direct sold class and singleton institutional portfolios have significantly positive net alphas (value-weighted). Similarly, while gross value added is positive and significant for all three categories, only institutional portfolios with a direct sold class and singleton institutional portfolios have significantly positive net value added. Further, the differences between institutional portfolios with a broker sold class and the other two categories of institutional portfolios are frequently economically and statistically significant. These results complement del Guercio and Reuter (2014) who find that managers of broker sold funds maximize their brokers' incentives rather than investor incentives, because both the broker sold retail class and the institutional classes of broker sold portfolios underperform their counterparts. Since dual-registered brokers prefer institutional portfolios with a broker sold class, my finding that this share class underperforms its counterparts provides evidence that by choosing this share class, dual-registrants do not improve the welfare of their fiduciary retail clients. Hence, it appears that their conflicts of interest impede client welfare.

4.4. Performance by distribution channel, Multi-variate regressions

Table 9 implies that performance varies significantly by fund share class. Table 10 provides a more rigorous test of performance in a multivariate setting, regressing the four performance measures on dummy variables for each distribution channel: broker sold retail and institutional. The missing channel is direct sold retail. Regressions include control variables measured at the distribution channel level: the lagged log of AUM, lagged expense ratio, lagged turnover ratio, lagged log of age, the total number of share classes in the portfolio, the lagged log of the size across all equity-related active portfolios in the fund family, dummy variables for the balanced and foreign equity strategies (domestic equity is the missing strategy), and year dummy variables. Table 10 also reports f-tests for differences in distribution channel coefficients. Since these regressions are pooled across share classes, standard errors are clustered at the year and portfolio level.

Columns (1) and (2) show that the direct sold share class outperforms the broker sold retail and institutional share classes for gross and net alpha.The broker sold retail share class has net alpha that 52 basis points worse than the net alpha for the direct sold retail share class. Some control variables are also significant: share class size is negatively related to alpha while fund family size is positively related. Higher expenses are associated with better gross alpha but worse net alpha, and share class age and the number of total share classes available for the fund portfolio are positively associated with gross and net alphas. Although the institutional share class trails the direct sold retail class, it significantly outperforms the broker sold sold class for both measures as evidenced by the last row of the table which presents t-tests for the equality of the coefficients.

Panel A Column (3) presents results for gross value added which is the dollar value above the benchmark return generated by the manager. The broker sold retail channel underperforms direct sold by about $4.3 million per year. Since the mean gross value added for the full sample is about $2.8 million, this result is highly significant. Gross value added for the institutional share class is also worse than direct sold. Results in Column (4) for net value added yield similar results. As with alpha, the institutional share class trails the direct sold retail class, but significantly outperforms the broker sold sold class for net value added. It does not outperform for gross value added.

Table 10 Panel B disaggregates the institutional channel into three variables: "Institutional; has broker sold," "Institutional; singleton," and "Institutional; has direct sold." For all four performance measures, institutional portfolios with a broker sold class underperform direct sold retail portfolios and institutional portfolios with a direct sold class. These results highlight important variation among institutional funds: those with a broker sold counterpart perform significantly worse than other institutional share classes, despite having similar expense ratios as reported in Table 9. These are the funds that are most likely to be sold by dual registrants.

Panel C adds a dummy variable for whether the fund family is named as a top revenue sharing partner by at least one of the top 25 dual registrants. Appendix B lists the top 10 of these families, but the total list used to create the dummy variable includes over fifty fund families. In the odd-numbered columns, results indicate that funds from families that revenue share underperform for all four performance measures. Further, the coefficient on "institutional; has broker sold retail" is insignificant for three of four measures, indicating revenue sharing appears to subsume share class type.

The even-numbered columns include an interaction between "Institutional; has broker sold retail" and the revenue sharing dummy variable. Almost all the revenue sharing fund families are in the categories of "broker sold retail" and "Institutional; has broker sold retail." I interact the revenue share dummy with the "Institutional; has broker sold retail" dummy to estimate the impact of revenue sharing on retail clients of dual registrants. The penultimate row of the table sums the coefficients on these variables: (revenue share dummy + institutional has broker sold dummy + interaction dummy) to estimate the incremental performance of revenue sharing institutional portfolios with a broker sold class to direct sold retail funds (the omitted dummy variable). I also test whether revenue sharing institutional portfolios with a broker sold class perform differently than institutional share classes of fund portfolios not named by the top 25 dual-registrants as top revenue sharing partners.

For all four performance measures, the sum of the three coefficients is negative and highly significant, indicating that institutional portfolios with a broker sold class from families that engage in the most revenue sharing significantly underperform the direct sold retail class (omitted variable).

Further, institutional portfolios with a broker sold class that engage in the most revenue sharing also significantly underperform institutional portfolios with a broker sold class from families that engage in less revenue sharing, as evidenced by the last row in the table. These differences are highly economically and statistically significant, indicating that clients of conflicted dual-registrants appear to suffer welfare losses related to revenue sharing incentives of dual-registrants to sell these funds.

In the first two columns, revenue sharing funds of either broker sold retail or singleton funds do not underperform direct sold funds. The coefficient on "institutional; has broker sold retail" is also statistically insignificant, indicating that funds in this category that do not engage in significant revenue sharing with top dual registrants do not underperform the direct sold class. In the second two columns, revenue sharing funds of either broker sold retail or singleton institutional funds underperform direct sold funds, as do the institutional funds with a broker sold counterpart relative to funds that do not engage in significant revenue sharing with top dual registrants.

Panel D adds two dummy variables for whether the fund family is affiliated with an RIA. The first is set to one if the fund family is affiliated with a dual registrant and the second is set to one if the fund family is affiliated with an independent RIA. I hand collect these data from Form ADV Part 2. The odd numbered columns indicate that mutual funds affiliated with dual registrants have worse performance than those not affiliated with dual registrants, while mutual funds affiliated with independent RIAs have performance that does not differ from unaffiliated funds.

The even-numbered columns include an interaction between "affiliated with dual-registrant" and "institutional: has broker sold retail." In these regressions, the coefficient on "affiliated with dual-registrant" continues to be negative and significant. Sums of the interaction variables reported at the bottom of the table indicate that institutional portfolios with a broker sold class and that are affiliated with dual-registrants significantly underperform the direct sold retail class. However, the marginal effect of having affiliated funds on the performance of the institutional class of portfolios that also have a broker sold class is statistically insignificant.

These results indicate that after the FPA surprise win in 2007, capital flowed from broker sold classes to institutional classes. Flows went disproportionately to institutional portfolios with a broker sold class, implying that dual registrants moved clients from broker sold to institutional share classes of the same fund portfolios. Institutional portfolios with a broker sold class significantly underperform other types of institutional portfolios and direct sold retail classes. Results are strongest for fund families that revenue share and for funds affiliated with dual registrants. Consistent with prior theory models, my results indicate that mostly *unsophisticated investors* of dual registered RIAs choose the institutional share class of portfolios that are also distributed by brokers.

5. Conclusion

Since 2007, capital has flowed out of broker sold mutual funds and into institutional share classes of the same funds. I link these flows to a surprise victory by the Financial Planning Association (FPA) over the SEC requiring dual registered advisers that charge asset based fees in brokerage accounts to transfer these clients to their fiduciary (RIA) subsidiaries. While fiduciaries are required to act in the best interest of clients, I find that dual registered investment advisers have numerous conflicts of interest including cross-selling of insurance products, simultaneous sponsorship and management of wrap fee programs, revenue sharing with third party mutual fund families, and affiliated mutual funds. Dual registered RIAs appear to charge higher fees than independent RIAs and face significantly more disciplinary action by regulators. Finally, institutional portfolios with a broker sold class underperform direct sold retail classes, institutional portfolios with a direct sold class, and singleton institutional classes, indicating lower investor welfare for clients of dual registrants relative to self-directed investors and independent RIA clients.

These findings have significant policy implications for retail investors. While the surprise FPA win was initially hailed as a victory for independent RIAs, the actual outcome has been strong growth in dual-registrant market share with neither a corresponding reduction in their conflicts of interest or fees nor a corresponding increase in retail client welfare. In fact, the welfare of their retail RIA clients may be worse than the welfare of their retail brokerage clients since self-reported fees for RIA retail clients are higher than the typical 1% fee for a broker sold constant load mutual fund (also known as a C share). Based on each firm's own self-reported data, RIA clients of dual registrants rarely receive personal financial planning services beyond investment allocation and selection advice. Because fewer than 10% of the largest independent RIAs state that they regularly accept retail clients, small investors must choose between a broker, a conflicted dual-registered RIA, or investing on their own.

The most obvious policy implication of my study is that dual registered investment advisers – who are required to act as fiduciaries – often fall short of the spirit of the fiduciary standard. While these advisers mostly meet the letter of the law (frequent disciplinary actions aside), their conflicts, high fees, and poor investment performance imply that they are not serving their clients' best interests. Hence, in my view, the SEC's current focus on requiring commission-based brokers to meet a fiduciary standard misses a key point: that conflicted dual registrants oversee trillions of dollars of retail client assets under management that are already subject to a fiduciary standard. My paper provides compelling evidence that these conflicts harm retail investors.

References

Anagol, Santosh, Shawn Cole, and Shayak Sarkar. 2017. Understanding the Advice of Commissions-Motivated Agents: Evidence from the Indian Life Insurance Market. *Review of Economics and Statistics*. 99(1) 1-15.

Bergstresser, Daniel, Chalmers, John M.R., and Peter Tufano, Peter. 2009. Assessing the Costs and Benefits of Brokers in the Mutual Fund Industry. 2009. *Review of Financial Studies.* 22(10), 4152-4156.

Berk, Jonathan B. and Jules H. van Binsbergen. 2015. Measuring Skill in the Mutual Fund Industry. *Journal of Financial Economics* 118, 1-20.

Berk, Jonathan B. and Richard C. Green. 2004. Mutual Fund Flows and Performance in Rational Markets. *Journal of Political Economy* 112(6), 1269-1295.

Chalmers John and Jonathan Reuter. 2015. Is Conflicted Investment Advice Better than No Advice? Boston College working paper, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1785833

Chen, Joseph, Hong, Harrison G., Huang, Ming, and Jeffrey D. Kubik. Does Find Size Erode Mutual Fund Performance? The Role of Liquidity and Organization. *American Economic Review* 94(5) 1276-1302.

Christofferson, Susan K., Evans Richard B., and David K. Musto. 2013. What do Consumers' Flows Maximize? Evidence from their Brokers' Incentives. *Journal of Finance* 68(1), 201-235.

Cici, Gjergji, Gibson, Scott, and Rabih Moussawi. 2010. Mutual Fund Performance when Parent Firms Simultaneously Manage Hedge Funds. *Journal of Financial Intermediation* 19(2) 169-187.

Del Guercio, Diane and Jonathan Reuter. 2014. Mutual Fund Performance and the Incentive to Generate Alpha. *Journal of Finance* 69(4) 1673-1704.

Dimmock, Stephen G. and William C. Gerken. 2012. Predicting Fraud by Investment Managers. *Journal of Financial Economics*. 105(1) 153-173.

Dumitrescu, Ariadna and Javier Gil-Bazo. 2018. Market Frictions, Investor Sophistication, and Persistence in Mutual Fund Performance. *Journal of Financial Markets* 40, 40-59.

Egan, Mark. 2019. Brokers vs. Retail Investors: Conflicting Interests and Dominated Markets. *Journal of Finance*, forthcoming.

Egan, Mark, Gregor Matvos, and Amit Seru. 2019. The Market for Financial Adviser Misconduct. *Journal of Political Economy*. 127(1) 233-295.

Evans, Richard B. and Ruediger Fahlenbrach. 2009. Institutional Investors and Mutual Fund Governance: Evidence from Retail-Institutional Fund Twins. *Review of Financial Studies* 25(12), 3530-3571.

Ferriera, Miguel A., Pedro Matos, and Pedro Pires. 2018. Asset Management within Commercial Banking Groups: International Evidence. *Journal of Finance*. 73(5) 2181-2227.

Foerster, Stephen, Juhani T. Linnainmaa, Brian T. Melzer, and Alessandro Previtero. 2017. *Journal of Finance*. 72(4) 1441-1482.

Garleanu, Nicolae and Lasse Heje Pedersen. 2018. Efficiently Inefficient Markets for Assets and Asset Management. *Journal of Finance*. 73(4), 1663-1712.

Gennaioli, Nicola, Andrei Shleifer, and Robert Vishny. 2015. Money Doctors. *Journal of Finance* 70(1), 91-114.

Hackethal, Andreas, Michael Haliassos, and Tullio Jappelli. Financial Advisers, A Case of Babysitters? 2012. *Journal of Banking and Finance*. 36(2) 509-524.

Hackethal, Andreas, Roman Inderst, and Steffan Meyer. 2012. Trading on Advice. Working paper. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1701777

Hao, Qing (Grace) and Xuemin (Sterling) Yan. 2012. The Performance of Investment Bank-Affiliated Mutual Funds: Conflicts of Interest or Informational Advantage? *Journal of Financial and Quantitative Analysis*. 537-565.

Hoechle, Daniel, Stefan Ruenzi, Nic Schaub, and Markus Schmid. 2018. Financial Advice and Bank Profits. *Review of Financial Studies*. 31(11) 4447-4492.

Nohel, Tom, Wang Z. Jay, and Lu Zheng. Side-by-Side Management of Mutual Funds and Hedge Funds. *Review of Financial Studies* 23(6), 2342-2373.

Pastor, Lubos, Stambaugh, Robert F., and Lucian A. Taylor. 2015. Scale and Skill in Active Management. *Journal of Financial Economics* 116, 23-45.

Phillips, Blake, Pukthaunthong, Kuntara, and P. Raghevendra Rau. 2018. Size Doesn't Matter: Diseconomies of Scale in the Mutual Fund Industry Revisited. *Journal of Banking and Finance*. 88C. 357-265.

Pool, Sialm, and Stefanescu. 2016. It Pays to Set the Menu: Mutual Fund Investment Options in 401(k) Plans. *Journal of Finance*. 2016. 71(4) 1779-1912.

Schoeff Jr., Mark, (2016). Historical Timeline of Fiduciary Duty for Financial Advice. *Investment News*. https://www.investmentnews.com/article/20160405/FREE/160409960/historical-timeline-of-fiduciary-duty-for-financial-advic

Sirri, Eric and Peter Tufano. 1998. Costly Search and Mutual Fund Flows*, Journal of Finance*, 53(5), 1589-1622.

Von Guadecker, Hans-Martin. 2015. How Does Household Portfolio Diversification Vary with Financial Literacy and Financial Advice? *Journal of Finance*. 70(2) 489-507.

Stoughton, Neal M., Youchang Wu, and Josef Zechner. 2011. Intermediated Investment Management. *Journal of Finance*. 66(3) 947-980.

Table 1: Investment Adviser Firm Means and Medians

Panel A of Table reports means and medians for dual-registrants and independent registered investment advisers (RIAs). These data come from Form ADV Part 1 for the period 2003-2016. The table presents means (medians) calculated across firms by year and then across years. Panel B reports the same data for any firm that appears in the top 75 of firms during any year (top 75 firms), based on assets under management. Panel C reports data for the top 75 firms collected from a manual review of Form ADV Part 2. Appendix 1 presents variable definitions. The table defines dual registered firms as those that report having an affiliated broker or a related party broker. RIA only firms are independent RIAs that have neither an affiliated broker nor a related party broker and do not employ registered representatives (brokers). For each category (dual-registered and RIA only), the table presents results of t-tests for differences in means assuming unequal variance. Statistical significance is indicated with ***, **, and * at the 1%, 5%, and 10% levels, respectively.

Panel A: All Firms 2003-2016

	All		Dual-registered		RIA only		Differences in means: Dual less RIA only
Assets and employees	**Mean**	**Median**	**Mean**	**Median**	**Mean**	**Median**	
Assets under mgmt. (AUM) in US $ millions	$1,739	$142	$4,518	$205	$369	$132	$4,149***
Number of advisory clients	3,621	482	9,788	731	643	406	9,145***
Estimated number of individual clients	2,563	251	7,120	411	355	197	6,765***
Proportion of clients that are individuals	0.58	0.63	0.61	0.63	0.57	0.63	0.04***
Estimated total AUM for individuals (US $ millions)	$560	$54	$1,454	$72	$114	$49	$1,340***
Number of employees	127	5	363	11	9	4	354***
Number of investment adviser reps. (IARs)	68	4	194	5	5	3	189***
Number of registered representatives	84	0	253	5	0	0	NA
Number of clients per IAR	140	97	135	74	142	106	-7
Prop. of employees also ins. agents	0.40	NA	0.77	NA	0.23	NA	0.54***
Firm characteristics							
Dummy: has affiliated insurance co.	0.08	NA	0.18	NA	0.03	NA	0.15***
Dummy: has related party insurance co.	0.23	NA	0.55	NA	0.08	NA	0.47***
Dummy: has either affiliated or related insurance co.	0.14	NA	0.31	NA	0.07	NA	0.24***
Dummy: portfolio mgr. wrap program	0.17	NA	0.29	NA	0.11	NA	0.18***
Dummy: sponsors wrap program	0.11	NA	0.25	NA	0.03	NA	0.22***
Dummy: manages and sponsors a wrap program	0.08	NA	0.19	NA	0.03	NA	0.16***
Dummy: offers financial planning (FP)	0.66	NA	0.73	NA	0.62	NA	0.11***
Dummy: has zero FP clients	0.39	NA	0.33	NA	0.43	NA	-0.10***
Prop. of clients receiving FP	0.12	NA	0.12	NA	0.12	NA	0.00
Disciplinary actions in past 10 years (dummy variable =1 if firm employs at least one), in percent							
Dummy: Convicted felon	0.50	NA	1.40	NA	0.10	NA	1.30***
Dummy: Convicted of misdemeanor	0.70	NA	2.00	NA	0.00	NA	2.00***
Dummy: False statement to SEC/CFTC	1.50	NA	3.60	NA	0.50	NA	3.10***
Dummy: Violate SEC/CFTC statutes	3.50	NA	8.90	NA	0.80	NA	8.10***
Dummy: SEC order against	7.00	NA	17.10	NA	1.90	NA	15.20***
Dummy: Court enjoined	0.90	NA	2.40	NA	0.10	NA	2.30***
Number of observations (firm/year)	35,488		11,795		23,693		NA
Number of unique firms	6,402		2,484		4,382		NA

Table 1: Investment Adviser Firm Means and Medians, continued
Panel B: 75 Largest Firms in each Category

	All		Dual-registered		RIA only		Means: Dual less RIA only
Assets and employees	**Mean**	**Median**	**Mean**	**Median**	**Mean**	**Median**	
Assets under mgmt. (AUM) in US $ millions	$20,850	$3,122	$41,260	$6,706	$2,984	$1,799	$38,276***
Number of advisory clients	43,899	2,697	91,705	14,244	1,914	1,163	89,791***
Estimated number of individual clients	32,149	943	67,641	8,639	854	383	66,787***
Proportion of clients that are individuals	0.50	0.40	0.60	0.63	0.40	0.38	0.20***
Estimated total AUM for individuals (US $ millions)	$7,043	$619	$13,779	1,807	$717	$362	$13,062***
Number of employees	1,488	70	3,084	687	34	23	3,050***
Number of investment adviser reps. (IARs)	797	18	1,672	344	12	9	1,660***
Number of registered representatives	970	0	2,061	537	0	0	2,061***
Number of clients per IAR	119	64	79	33	159	105	-80***
Prop. of employees also insurance agents	0.29	NA	0.73	NA	0.06	NA	0.67***
Firm characteristics							
Dummy: portfolio mgr. wrap program	0.54	NA	0.67	NA	0.42	NA	0.25***
Dummy: sponsors wrap program	0.31	NA	0.61	NA	0.02	NA	0.59***
Dummy: offers financial planning (FP)	0.54	NA	0.68	NA	0.40	NA	0.28***
Dummy: has zero FP clients	0.47	NA	0.33	NA	0.61	NA	-0.28***
Proportion of clients receiving FP	0.04	NA	0.03	NA	0.05	NA	-0.02***
Disciplinary actions in past 10 years (dummy variable =1 if firm employs at least one), in percent							
Dummy: Convicted felon	4.80	NA	10.10	NA	0.00	NA	10.10***
Dummy: Convicted of misdemeanor	6.60	NA	13.70	NA	0.10	NA	13.60***
Dummy: False statement to SEC/CFTC	10.40	NA	20.60	NA	0.60	NA	20.00***
Dummy: Violate SEC/CFTC statutes	18.90	NA	38.30	NA	0.80	NA	37.50***
Dummy: SEC order against	27.20	NA	54.90	NA	2.00	NA	52.90***
Dummy: Court enjoined	6.90	NA	13.80	NA	0.30	NA	13.50***
Number of observations (firm/year)	2,043		958		1,085		NA
Number of unique firms	243		94		149		NA

Table 1: 75 Largest Firms in each Category, continued
Panel C: Form ADV Part 2 Means

	All	Dual-registered	RIA only	Dual less RIA only
Number of firms with ADV Part 2 data	243	94	149	NA
Minimum AUM, fees, and client types				
RIA start date	1991	1990	1992	NA
Dummy: Accept retail clients	0.27	0.55	0.09	0.46***
Minimum investment, all firms (US $)	$1,727,403	$702,228	$2,405,935	-$1,703,707***
Fee for > $1MM AUM: Percent of AUM	1.14%	1.39%	1.02%	0.37%***
Minimum investment if accept retail	$18,561	$21,731	$6,786	$14,945***
Fee for <$100K AUM: Percent of AUM	1.97%	2.19%	1.15%	1.04%***
Revenue sharing dummy variables				
Dummy: Engages in revenue sharing	0.21	0.53	0.01	0.52***
Dummy: Offers limited number of mutual fund families	0.16	0.40	0.00	0.40***
Dummy: Offers only mutual funds that engage in revenue sharing	0.08	0.20	0.00	0.20***
Dummy: Has preferred list of mutual funds	0.11	0.28	0.01	0.27***
Affiliated fund dummy variables				
Dummy: Has affiliated mutual funds	0.41	0.60	0.29	0.31***
Dummy: Affiliated mutual funds subject to reduced due diligence	0.10	0.16	0.02	0.14***
Disciplinary action detail for firms with at least one disciplinary action				
Number ADV Part 2 firms with at least one disciplinary action	49	48	1	NA
Number disciplinary actions in last 10 years	10	10	1	9[a]
Total fines in last 10 years ($)	$58,800,000	$60,000,000	$20,000	$59,980,000[a]
Disciplinary action related to registered representatives with at least one disciplinary action				
Fines associated with registered reps.	$51,202,184	$52,240,954	NA	NA
Dummy: Reg rep has conflict of interest	0.14	0.15	NA	NA
Dummy: Reg rep misled investors	0.61	0.62	NA	NA
Dummy: Reg rep not properly supervised	0.53	0.54	NA	NA
Dummy: Improper data reporting or other internal control violation	0.67	0.69	NA	NA
Dummy: Reg rep overcharged mutual fund or variable annuity fees	0.49	0.50	NA	NA
Dummy: Reg rep traded ahead of clients	0.06	0.06	NA	NA
Dummy: Reg rep market manipulation	0.02	0.02	NA	NA
Dummy: Data hack occurred	0.10	0.10	NA	NA
Disciplinary action related to investment adviser representatives (IAR) with at least one disciplinary action				
Fines associated with IARs	$7,597,816	$7,759,046	$20,000	$7,739,046[a]
Dummy: IAR has conflict of interest	0.14	0.15	0.00	0.15[a]
Dummy: IAR not properly supervised	0.12	0.13	0.00	0.13[a]
Dummy: IAR misled investors	0.20	0.19	1.00	-0.81[a]
Dummy: IAR overcharged advisory fees	0.06	0.06	0.00	0.06[a]
Dummy: IAR overcharged 12b-1 fees	0.10	0.10	0.00	0.10[a]

[a] Cannot calculate t-test since only one RIA only firm has a single disciplinary action.

Table 2: Insurance Affiliations of Dual-Registrants and Independent RIAs

This table reports results of Logit regressions examining insurance affiliations among RIAs. Panel A includes all firms. Column 1 performs a Logit regression in which the dependent variable is a dummy set to 1 if the firm has either an affiliated or related party insurance company and zero otherwise. For Column (1) standard errors are clustered by firm and by year. Column (2) re-estimates the Logit model, adding firm fixed effects. Columns (1) and (2) report odds ratios. Column (3) performs an OLS regression in which the dependent variable is the proportion of RIA employees that licensed to sell insurance. In Column (3), the standard errors are clustered by firm and by year. Column (4) repeats this regression, adding firm fixed effects. For Columns (3) and (4), the dependent variable is available from 2011 forward. Panel B includes only the largest 75 firms, measured each year. If a firm is in the top 75 firms during any year, all years of existence are included. Panel B also includes a variable set to one of the firm accepts retail clients and zero otherwise. All regressions include year dummies. Independent variables include a dummy variable set to 1 if the firm is a dual registrant and 0 if the firm is an independent RIA, the log of firm size, winsorized at the 1% level, the estimated proportion of clients that are individuals, a dummy variable for whether the firm offers financial planning services, and the proportion of clients that receives financial planning services. t-values or z-values are reported below coefficients in parentheses. Statistical significance is indicated with ***, **, or * for the 10%, 5%, and 1% levels, respectively.

Panel A: All Firms

	Dummy if firm has affiliated or related insurance company		**Proportion of employees licensed to sell insurance**	
	Logit: (1)	**Logit: Firm Fixed Effects (2)**	**OLS (3)**	**OLS: Firm Fixed Effects (4)**
Dual-registrant dummy	18.381***	12.007***	0.317***	0.045**
	(26.42)	*(6.30)*	*(35.10)*	*(2.35)*
Log of assets under mgmt. (AUM)	1.045	1.615*	-0.029***	-0.010
	(1.08)	*(1.85)*	*(-10.06)*	*(-1.52)*
Proportion individual clients	3.020***	3.300	0.172***	-0.001
	(7.25)	*(1.53)*	*(13.12)*	*(-0.12)*
Dummy: offers financial planning	4.059***	2.099	0.136***	0.009
	(9.09)	*(1.62)*	*(17.73)*	*(1.08)*
Proportion financial planning clients	0.443***	0.377	-0.107***	0.001
	(-4.18)	*(-1.42)*	*(-6.07)*	*(0.07)*
Number of observations	35,416	8,926	14,549	14,549
Includes time dummies?	Yes	Yes	Yes	Yes
Includes firm fixed effects?	No	Yes	No	Yes
R^2 or pseudo R^2	0.512	NA	0.344	0.269

Table 2: Insurance Affiliations of Dual-Registrants and Independent RIAs, continued
Panel B: Top 75 firm sample

	Dummy if firm has affiliated or related insurance company		Proportion of employees licensed to sell insurance	
	Logit: (1)	**Logit with interaction (2)**	**OLS (3)**	**OLS with interaction (4)**
Dual-registrant dummy	25.308***	26.339***	0.131***	0.033*
	(6.15)	*(6.09)*	*(4.89)*	*(1.80)*
Accepts retail clients dummy	13.484***	14.601***	0.333***	0.057
	(3.52)	*(4.50)*	*(7.93)*	*(1.44)*
Dual-registrant dummy x accepts retail clients dummy		0.847		0.444***
		(-0.13)		*(8.19)*
Log of assets under mgmt. (AUM)	2.540***	2.544***	0.013	0.006
	(4.04)	*(4.09)*	*(1.26)*	*(0.67)*
Proportion individual clients	2.331	2.370	0.131***	0.089*
	(1.15)	*(1.09)*	*(2.76)*	*(1.93)*
Dummy: offers financial planning	11.018***	11.273***	0.090***	0.039**
	(3.03)	*(3.24)*	*(4.35)*	*(2.23)*
Proportion financial planning clients	0.006	0.006	-0.156**	-0.084
	(-1.12)	*(-1.15)*	*(-2.25)*	*(-1.65)*
Number of observations	1,800	1,800	936	936
Includes time dummies?	Yes	Yes	Yes	Yes
Includes firm fixed effects?	No	No	No	No
R^2 or pseudo R^2	0.746	0.746	0.681	0.743
Dual registrants that accept retail clients (dual+accept+interaction)		325.912***		0.534***
		(4.48)		*(14.15)*
Dual registrant that accepts retail clients – Dual registrant that does not accept retail clients (accepts+interaction)		12.378**		0.500***
		(2.04)		*(11.79)*

Table 3: Simultaneous Management and Sponsorship of Wrap Programs

This table reports results of Logit regressions examining simultaneous management and sponsorship of wrap programs. Columns (1) – (2) include all firms. The dependent variable is a dummy set to 1 if the firm simultaneously manages and sponsors a wrap program and zero otherwise. The table reports odds ratios. For Column (1), standard errors are clustered by firm and by year. Column (2) re-estimates the Logit model, adding firm fixed effects. Columns (3) – (4) perform the same analyses for the top 75 sample and add a dummy variable set to 1 if the firm accepts retail clients. Column (4) interacts this variable with the dual registrant dummy. In Columns (3) and (4), standard errors are clustered by firm. All other control variables are as in Table 2. z-values are reported below coefficients in parentheses. Statistical significance is indicated with ***, **, or * for the 10%, 5%, and 1% levels, respectively.

Dependent Variable: Dummy set to 1 if the firm simultaneously manages and sponsors a wrap program

	All Firms		**Top 75 firms**	
	Logit: (1)	**Logit: Firm Fixed Effects (2)**	**Logit: (3)**	**Logit with interaction (4)**
Dummy: Dual registrant	5.392***	1.299	11.827***	8.744***
	(16.97)	*(0.85)*	*(4.68)*	*(2.16)*
Accepts retail clients dummy			9.624***	4.505
			(4.49)	*(1.36)*
Dual-registrant dummy x accepts retail clients dummy				2.414
				(0.76)
Log of assets under mgmt. (AUM)	1.387***	1.311**	1.583**	1.582**
	(8.10)	*(2.49)*	*(2.43)*	*(2.41)*
Proportion individual clients	2.849***	0.825	2.491	2.452
	(5.20)	*(-0.49)*	*(1.25)*	*(1.23)*
Dummy: offers financial planning	1.643***	1.758**	1.497	1.401
	(3.98)	*(2.15)*	*(0.87)*	*(0.72)*
Proportion financial planning clients	0.216***	0.563	1.513	1.606
	(-5.13)	*(-1.22)*	*(0.25)*	*(0.28)*
Number of observations	35,416	2,326	2,038	2,038
Includes time dummies?	Yes	Yes	Yes	Yes
Includes firm fixed effects?	No	Yes	No	No
Pseudo R^2	0.185	NA	0.492	0.493
Dual registrants that accept retail (dual + accepts + interaction)				95.107***
				(6.52)
Dual registrants that accept retail– Dual registrants that do not accept retail (accepts + interaction)				10.881***
				(4.36)

Table 4: Revenue sharing by dual registrants and independent RIAs
Top 75 firms by AUM

This table reports results of Logit regressions examining revenue sharing. In Columns (1) and (2) the dependent variable is a dummy set to 1 if the firm receives revenue sharing payments and zero otherwise. For Columns (3) and (4), the dependent variable is a dummy set to 1 if mutual fund families are ranked into tiers based on their levels of revenue sharing and zero otherwise. The table reports odds ratios. Control variables are the same as in Table 3. Z-values are reported below coefficients in parentheses. Statistical significance is indicated with ***, **, or * for the 10%, 5%, and 1% levels, respectively.

	Dummy: Revenue Sharing?		**Dummy: Funds Ranked into Tiers?**	
	Logit (1)	**Logit with interaction (2)**	**Logit (3)**	**Logit with interaction(4)**
Dummy: Dual registrant	37.968***	14.041**	31.896***	12.937***
	(3.28)	*(2.34)*	*(5.00)*	*(7.52)*
Accepts retail clients dummy	12.318***	0.000***	11.429**	0.000***
	(3.89)	*(11.70)*	*(2.29)*	*(-10.14)*
Dual-registrant dummy x accepts retail clients dummy		615.000***		1142.00***
		(13.04)		*(19.92)*
Log of assets under mgmt. (AUM)	0.908	0.897	0.779	0.778
	(-0.47)	*(-0.49)*	*(-1.27)*	*(-1.27)*
Proportion individual clients	6.164*	5.959	1.921	1.853
	(1.63)	*(1.54)*	*(0.64)*	*(0.60)*
Dummy: offers financial planning	5.784***	5.070**	9.657***	9.130***
	(2.67)	*(2.41)*	*(3.09)*	*(3.03)*
Proportion financial planning clients	0.078	0.076	0.046*	0.046*
	(-1.37)	*(-1.36)*	*(-1.65)*	*(-1.66)*
Number of observations	2,038	2,038	2,038	2,038
Includes time dummies?	No	No	No	No
Includes firm fixed effects?	No	No	No	No
Pseudo R^2	0.666	0.676	0.490	0.493
Dual registrants that accept retail (dual + accepts + interaction)		243.472***		184.196***
		(4.86)		*(4.74)*
Dual registrants that accept retail– Dual registrants that do not accept retail (accepts + interaction)		17.340***		14.239***
		(4.20)		*(2.39)*

Table 5: Affiliated mutual funds by dual registrants and independent RIAs
Top 75 firms by AUM

This table reports results of Logit regressions examining whether firms have affiliated mutual funds. In Columns (1) and (2) the dependent variable is a dummy set to 1 if the firm has affiliated mutual funds and zero otherwise. For Columns (3) and (4), the dependent variable is a dummy set to 1 if affiliated funds are subject to lower due diligence and zero otherwise. The table reports odds ratios. Control variables are the same as in Table 3. z-values are reported below coefficients in parentheses. Statistical significance is indicated with ***, **, or * for the 10%, 5%, and 1% levels, respectively.

	Dummy: Has affiliated funds		**Dummy: Affiliated funds have lower due diligence**	
	Logit (1)	**Logit with interaction (2)**	**Logit (3)**	**Logit with interaction(4)**
Dummy: Dual registrant	4.013***	3.515***	10.040**	8.613**
	(3.98)	*(3.31)*	*(2.39)*	*(2.19)*
Accepts retail clients dummy	0.802	0.417	3.517*	0.000***
	(-0.52)	*(-1.15)*	*(1.89)*	*(-8.13)*
Dual-registrant dummy x accepts retail clients dummy		2.354		619.05***
		(0.98)		*(9.11)*
Log of assets under mgmt. (AUM)	1.482***	1.474***	1.414	1.4145
	(3.30)	*(3.25)*	*(0.89)*	*(0.89)*
Proportion individual clients	2.237	2.147	0.424	0.421
	(1.48)	*(1.41)*	*(-0.62)*	*(-0.63)*
Dummy: offers financial planning	0.396***	0.368***	1.493	1.468
	(-2.63)	*(-2.71)*	*(0.71)*	*(0.67)*
Proportion financial planning clients	0.561	2.148	0.222	0.230
	(-0.38)	*(-0.30)*	*(-0.73)*	*(-0.72)*
Number of observations	2,038	2,038	838	838
Includes time dummies?	No	No	No	No
Includes firm fixed effects?	No	No	No	No
Pseudo R^2	0.157	0.159	0.186	0.187
Dual registrants that accept retail (dual + accepts + interaction)		3.452***		31.249***
		(2.60)		*(3.19)*
Dual registrants that accept retail– Dual registrants that do not accept retail (accepts + interaction)		0.982		3.629*
		(-0.04)		*(1.93)*

Table 6: Fees
Top 75 firms by AUM

This table reports results of OLS regressions examining fees. In Columns (1) and (2) the dependent variable is fees as a percent of assets for clients with over $1 million in assets. For Column (3), the dependent variable is fees as a percent of assets for clients with less than $100,000 in assets. Control variables are the same as in Table 3. t-values are reported below coefficients in parentheses. Statistical significance is indicated with ***, **, or * for the 10%, 5%, and 1% levels, respectively.

	Fees for $1 million clients		**Fees for $100,000 clients**
	OLS (1)	**OLS with interaction (2)**	**OLS (3)**
Dummy: Dual registrant	0.111*	0.012	0.890***
	(1.86)	*(0.21)*	*(5.05)*
Accepts retail clients dummy	0.346***	0.142	
	(4.53)	*(1.28)*	
Dual-registrant dummy x accepts retail clients dummy		0.345***	
		(2.58)	
Log of assets under mgmt. (AUM)	0.036*	0.037*	0.028
	(1.66)	*(1.74)*	*(0.71)*
Proportion individual clients	-0.041	-0.055	0.136
	(-0.43)	*(-0.58)*	*(0.55)*
Dummy: offers financial planning	0.103***	0.062*	0.217
	(2.58)	*(1.67)*	*(1.36)*
Proportion financial planning clients	-0.216	-0.128	0.085
	(-1.33)	*(-0.85)*	*(0.25)*
Number of observations	1,772	1,772	689
Includes time dummies?	No	No	No
Includes firm fixed effects?	No	No	No
R^2	0.354	0.374	0.398
Dual registrants that accept retail (dual + accepts + interaction)		0.499***	
		(6.20)	
Dual registrants that accept retail– Dual registrants that do not accept retail (accepts + interaction)		0.487***	
		(5.62)	

Table 7: Disciplinary actions

This table reports results of Logit regressions examining disciplinary actions against RIAs. Panel A includes all firms. Columns (1) to (6) perform Logit regression in which the dependent variables are dummies set to 1 or zero for: convicted felon, convicted of misdemeanor, false statement to SEC, violate SEC statutes, SEC order against, and court enjoined, respectively. Standard errors are clustered by firm and by year. Panel B includes only the largest 75 firms. If a firm is in the top 75 firms during any year, all years of its existence are included. Panel B repeats the regressions of Panel A adding a variable set to one of the firm accepts retail clients and zero otherwise. All regressions include year dummies. Independent variables include a dummy variable set to 1 if the firm is a dual registrant and 0 if the firm is an independent RIA, the log of firm size, winsorized at the 1% level, the estimated proportion of clients that are individuals, a dummy variable for whether the firm offers financial planning services, and the proportion of clients that receives financial planning services. z-values are reported below coefficients in parentheses. Statistical significance is indicated with ***, **, or * for the 10%, 5%, and 1% levels, respectively.

Panel A: All Firms

	Logit: Felon (1)	**Logit: Misdemeanor (2)**	**Logit: False stmt. To SEC (3)**	**Logit: Violate SEC statutes (4)**	**Logit: SEC order against (5)**	**Logit: Court enjoined (6)**
Dual-registrant dummy	5.141***	17.811***	2.837***	6.363***	6.525***	5.552***
	(3.48)	*(4.48)*	*(4.67)*	*(9.83)*	*(15.48)*	*(4.16)*
Log of assets under mgmt. (AUM)	2.480***	2.648***	2.000***	1.824***	1.730***	2.202***
	(7.93)	*(8.11)*	*(10.38)*	*(13.66)*	*(15.67)*	*(9.79)*
Proportion individual clients	19.57***	58.731***	2.322**	3.398***	6.347***	3.683**
	(5.35)	*(6.13)*	*(2.22)*	*(4.49)*	*(8.70)*	*(2.42)*
Dummy: offers financial planning	4.661***	4.659***	1.874***	1.565***	2.222***	2.392***
	(3.39)	*(2.59)*	*(2.66)*	*(2.61)*	*(5.59)*	*(2.70)*
Proportion financial planning clients	1.983	0.174	0.051**	0.077***	0.331***	0.150*
	(0.79)	*(-1.55)*	*(-2.28)*	*(-3.69)*	*(-3.23)*	*(-1.88)*
Number of observations	35,416	35,416	35,416	35,416	35,416	35,416
Includes time dummies?	Yes	Yes	Yes	Yes	Yes	Yes
Includes firm fixed effects?	No	No	No	No	No	No
Pseudo R^2	0.360	0.473	0.243	0.273	0.261	0.318

Table 7: Disciplinary actions, continued
Panel B: Top 75 firms

	Logit: Felon		Logit: Misdemeanor		Logit: False stmt. to SEC		Logit: Violate SEC statutes		Logit: SEC order against		Logit: Court enjoined	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Dual-registrant dummy	omit	omit	11.509**	9.962**	7.863**	6.611*	11.56***	11.28***	10.25***	5.790***	1.582***	0.588
	omit	omit	*(2.04)*	*(1.94)*	*(2.17)*	*(1.84)*	*(3.82)*	*(3.06)*	*(4.88)*	*(3.11)*	*(5.12)*	*(0.46)*
Accepts retail clients dummy	3.836	3.836	2.007	0.000***	12.75***	8.416	15.95***	15.25**	11.03***	1.440	1.804	-11.49***
	(1.54)	*(1.54)*	*(0.75)*	*(-6.41)*	*(3.35)*	*(1.40)*	*(4.65)*	*(2.56)*	*(4.92)*	*(0.34)*	*(1.46)*	*(-9.17)*
Dual-registrant dummy x accepts retail clients dummy		omit		237***		1.565		1.052		10.542*	-0.690	13.42***
		omit		*(6.62)*		*(0.27)*		*(0.04)*		*(1.86)*	*(-0.71)*	*(8.64)*
Log of assets under mgmt. (AUM)	4.793***	4.793***	4.454***	4.474***	2.411***	2.413***	2.206***	2.207***	2.133***	2.156***	-4.755	1.570***
	(3.48)	*(3.48)*	*(3.58)*	*(3.59)*	*(3.30)*	*(3.31)*	*(4.00*	*(4.01)*	*(4.29)*	*(4.24)*	*(-0.30)*	*(5.14)*
Proportion individual clients	15.062**	15.062**	34.50***	34.78***	2.702	2.729	2.721	2.722	1.497	1.415	1.582***	1.814
	(2.26)	*(2.26)*	*(3.47)*	*(3.43)*	*(1.20)*	*(1.22)*	*(1.26)*	*(1.26)*	*(0.47)*	*(0.39)*	*(5.12)*	*(1.47)*
Dummy: offers financial planning	4.920***	4.920***	2.786	2.714	0.371	0.362	0.492	0.490	1.221	1.026	1.804	-0.762
	(2.85)	*(2.85)*	*(1.29)*	*(1.27)*	*(-1.38)*	*(-1.37)*	*(-1.48)*	*(-1.43)*	*(0.46)*	*(0.06)*	*(1.46)*	*(-0.77)*
Proportion financial planning clients	0.000	0.000	6.244	9.034	11.593	12.293	2.568	2.584	1.942	2.625	-0.690	-4.466
	(-0.83)	*(-0.83)*	*(0.77)*	*(0.79)*	*(1.27)*	*(1.33)*	*(0.71)*	*(0.72)*	*(0.76)*	*(1.11)*	*(-0.71)*	*(-0.27)*
Number of observations	956	956	2,038	2,038	2,038	2,038	2,038	2,038	2,038	2,038	2,038	2,038
Includes time dummies?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Includes firm fixed effects?	No	No	No	No	No	No	No	No	No	No	No	No
Pseudo R^2	0.323	0.323	0.425	0.425	0.369	0.370	0.459	0.459	0.513	0.519	0.389	0.391
Dual registrants that accept retail clients (dual+accept+interaction)		NA		20.635** *(2.15)*		88.15*** *(3.42)*		181.1*** *(5.65)*		87.88*** *(6.99)*		2.518 *(1.63)*
Dual registrant that accepts retail clients – Dual registrant that does not accept retail clients (accepts+interaction)		NA		2.071 *(0.70)*		13.33*** *(3.23)*		16.04*** *(4.33)*		15.18*** *(4.60)*		1.931* *(1.70)*

Table 8: Summary statistics of mutual fund characteristics

Panel A reports summary statistics for mutual fund characteristics, at the fund portfolio and fund portfolio-distribution channel levels. Averages are calculated by year and then across years. AUM is assets under management reported in U.S. millions of dollars. Net $ flow is the dollar flow for the fund is calculated as the fund size at year end less the fund size at the start of the year multiplied by the fund's raw return during the year. Net percent flow is the net dollar flow for the fund scaled by prior year net assets. Fund age is the number of years the oldest share class of the fund has been in existence. Turnover ratio is the minimum of aggregated sales or aggregated purchases of securities, divided by the average net assets of the fund. Domestic equity, balanced, and foreign equity dummy variables are set to 1 if the mutual fund is in that style category, and zero otherwise. Panel B reports differences among selected categories and performs t-tests of differences in means, allowing for unequal variance. Panel C reports results for the Institutional class categorized by whether the portfolio also has another distribution channel. All variables except indicators are winsorized at the 1% and 99% tails.

Panel A: Means

Variables	Aggregated at portfolio level	Broker sold retail	Direct sold retail	Institutional	Retire only
N	5,470	2,838	2,143	3,106	1,613
AUM ($ Million)	742	491	656	351	334
Net dollar flow ($ Million)	4.8	-13.9	-5.5	21.8	15.1
Net percent flow (% AUM)	37.7	89.7	49.1	127.3	186.6
Fund age, years	10	10	10	7	7
Expense ratio (% AUM)	1.3	1.5	1.2	1.0	1.1
Turnover ratio (% AUM)	92.6	92.4	92.7	87.1	89.1
Domestic equity dummy	0.64	0.65	0.69	0.63	0.66
Balanced dummy	0.12	0.13	0.11	0.10	0.11
Foreign equity dummy	0.24	0.22	0.20	0.27	0.23

Panel B: Differences and t-tests

Differences	Broker sold retail – Direct sold retail	Broker sold retail – Institutional	Direct retail – Institutional
AUM ($ Million)	-165***	140***	305***
Net dollar flow ($ Million)	-8.4***	-35.7***	-27.3***
Net percent flow (% AUM)	40.6***	-37.6***	-78.2***
Fund age, years	0.0	3.0***	3.0***
Expense ratio (% AUM)	0.3***	0.5***	0.2***
Turnover ratio (% AUM)	-0.30	5.30**	5.60***
Domestic equity dummy	-0.04***	0.02*	0.06***
Balanced dummy	0.02**	0.03***	0.01*
Foreign equity dummy	0.02**	-0.05***	-0.07***

Table 8: Summary statistics of mutual fund characteristics, continued

Panel C: Institutional funds, means and differences

	Means			Differences		
Variables	**Portfolio also has broker sold class**	**Portfolio also has direct sold class**	**Singleton portfolio**	**Has broker – Has direct**	**Has broker – Singleton**	**Has direct - Singleton**
N	1,706	460	992	NA	NA	NA
AUM ($ Million)	391	384	499	7	-108**	-115**
Net dollar flow ($ Million)	20.7	36.8	24.1	-16.1	-3.4	12.7
Net percent flow (% of AUM)	124.4	108.0	71.0	16.4	53.4***	37
Fund age, years	9	7	8	2***	1***	-1**
Expense ratio (% of AUM)	0.99	1.03	0.97	-0.04***	0.02*	0.06**
Turnover ratio (% of AUM)	83.5	78.1	76.1	5.4	7.4***	2.0
Domestic equity dummy	0.67	0.69	0.59	-0.02	0.08***	0.10***
Balanced dummy	0.11	0.07	0.06	0.04***	0.05***	0.01**
Foreign equity dummy	0.22	0.24	0.36	-0.02	-0.14***	-0.12***

Table 9: Summary statistics of performance measures

Panel A reports summary statistics for annualized performance measures, at both the fund portfolio and fund portfolio-distribution channel levels. Averages are calculated across all years for fund portfolio (fund portfolio-distribution channels), and then cross-sectionally. Gross alpha (annual % EW) is the annualized monthly alpha calculated using the fund's monthly return grossed up by monthly expenses and regressed on monthly returns for eleven Vanguard mutual funds representing different asset classes, equally weighted in the cross-section. Net alpha is the annualized monthly alpha calculated using the fund's monthly return after expenses and regressed on monthly returns for eleven Vanguard mutual funds representing different asset classes, value weighted in the cross-section by assets under management. Gross value added is gross alpha times fund assets under management (in US millions of dollars) in the prior year. Net value added is net alpha times fund assets under management (in US millions of dollars) in the prior year. Panel B reports differences among selected categories, and performs t-tests of differences in means, allowing for unequal variance. Panel C reports results for the institutional class categorized by whether the portfolio also has another distribution channel. For the return and value added measures, Panel C also reports t-tests for whether these variables are statistically different from zero. Significance is reported with ***, **, and * for the 1%, 5%, and 10% levels respectively. All variables except indicators are winsorized.

Panel A: Means

Variables	Aggregated at portfolio level	Broker sold retail	Direct sold retail	Institutional	Retire only
Gross alpha (annual %) EW	0.28	0.19	0.66	0.42	0.56
Gross alpha (annual %) VW	1.07	0.89	1.16	1.09	1.05
Net alpha (annual %) EW	-0.99	-1.34	-0.60	-0.60	-0.58
Net alpha (annual %) VW	0.08	-0.38	0.34	0.27	0.17
Gross value added ($ millions)	5.76	3.36	6.01	2.55	2.53
Net value added ($ millions)	-0.29	-1.87	1.44	0.18	0.15

Panel B: Differences and t-tests

Differences	Broker sold retail – Direct sold retail	Broker sold retail – Institutional	Direct retail – Institutional
Gross alpha (annual %) EW	-0.47***	-0.23***	0.24**
Gross alpha (annual %) VW	-0.27*	-0.20	0.07
Net alpha (annual %) EW	-0.74***	-0.74***	0.00
Net alpha (annual %) VW	-0.72***	-0.65***	0.07
Gross value added ($ millions)	-2.65***	0.81	3.46***
Net value added ($ millions)	-3.31***	-2.05***	1.26***

Table 9: Summary statistics of performance measures, continued

Panel C: Institutional funds, means and differences

	Means			Differences		
Variables	**Portfolio also has broker sold class**	**Portfolio also has direct sold class**	**Singleton portfolio**	**Has broker – Has direct**	**Has broker – Singleton**	**Has direct - Singleton**
Gross alpha (annual %) EW	0.644***	1.213***	0.443***	-0.569***	0.201	0.770***
Gross alpha (annual %) VW	0.741***	1.322***	1.145***	-0.581**	-0.404	0.177***
Net alpha (annual %) EW	-0.345***	0.174	-0.537***	-0.519***	0.192	0.711
Net alpha (annual %) VW	-0.135	0.474**	0.454**	-0.609**	-0.589**	0.02
Gross value added ($ millions)	2.81***	4.13***	4.71***	-1.32	-1.90*	-0.58
Net value added ($ millions)	-0.07	1.48*	1.71*	-1.55*	-1.78*	-0.23

Table 10: Mutual fund performance by distribution channel

Panel A performs OLS regressions mutual fund performance measures on indicator variables representing different fund distribution channels. The regressions are performed at the share class level, aggregating all fund share classes in each fund portfolio for each distribution channel. The missing channel indicator variable is direct-sold retail. The dependent variables include annualized net alpha, annualized gross alpha, net value added, and gross value added. Regressions also include control variables: lagged share class size (log), lagged share class dollar flows, lagged expense ratio, lagged turnover ratio, the lagged log of fund age, the lagged log of the size of the assets under management at the fund family, style dummies, and year dummies. The missing style dummy is domestic equity and the missing year dummy is 2004. Panel B performs similar regressions for the subset of fund portfolios that have an institutional share class. The regressions include a dummy variable for whether the fund portfolio is also offered through the direct sold channel and a dummy for whether the portfolio is only offered through the institutional channel. The missing channel is the institutional share class that also has a direct sold share class. All regressions cluster the standard errors by fund portfolio and by year. The table also reports p-values for tests of differences between coefficients on distribution channel dummies. t-statistics are reported below the coefficients in parentheses. Significance is reported with ***, **, and * for the 1%, 5%, and 10% levels respectively. All variables except indicators are winsorized.

Panel A: All Funds

Dependent variable:	**Annual gross alpha**	**Annual net alpha**	**Gross value added**	**Net value added**
Dist. channel dummies				
Broker sold retail dummy	-0.520***	-0.525***	-4.294***	-4.163***
	(-3.10)	*(-3.13)*	*(-3.79)*	*(-4.30)*
Institutional dummy	-0.189**	-0.183**	-4.694***	-3.084***
	(-2.39)	*(-2.28)*	*(-4.31)*	*(-3.48)*
Control variables				
Lagged log of size	-0.144***	-0.143***	4.538***	0.325
	(-4.98)	*(-4.91)*	*(6.54)*	*(0.51)*
Lagged dollar flows	0.000	0.000	0.001	-0.003
	(-0.26)	*(-0.23)*	*(0.06)*	*(-0.46)*
Lagged expense ratio	0.455	-0.517*	-0.149	-1.401*
	(1.60)	*(-1.85)*	*(-0.14)*	*(-1.89)*
Lagged turnover ratio	-0.001	-0.001	-0.029	-0.020
	(-0.36)	*(-0.28)*	*(-1.05)*	*(-0.85)*
Lagged log of age	0.180**	0.173**	0.786*	0.467
	(2.05)	*(1.97)*	*(1.67)*	*(1.28)*
Lagged log of family size	0.140***	0.147***	0.799***	0.477***
	(4.39)	*(4.61)*	*(4.54)*	*(2.88)*
Foreign equity style dummy	0.312	0.308	3.651**	2.620
	(0.86)	*(0.85)*	*(2.00)*	*(1.59)*
Balanced style dummy	-0.112	-0.112	1.619	0.294
	(-0.36)	*(-0.36)*	*(0.60)*	*(0.14)*
N	57,743	57,743	57,743	57,743
R^2	0.010	0.013	0.045	0.010
Includes year dummies?	Yes	Yes	Yes	Yes
Broker sold = Institutional?	0.020**	0.018**	0.593	0.049**

Table 10: Mutual fund performance by distribution channel, continued
Panel B: All funds, with institutional funds disaggregated

Dependent variable:	Annual gross alpha	Annual net alpha	Gross value added	Net value added
Dist. channel dummies				
Broker sold retail dummy	-0.533***	-0.539***	-4.393***	-4.259***
	(-3.15)	*(-3.19)*	*(-3.83)*	*(-4.30)*
Institutional; has broker sold	-0.271***	-0.268***	-5.484***	-3.812***
	(-2.98)	*(-2.92)*	*(-4.53)*	*(-3.76)*
Institutional; has direct sold	0.326**	0.339**	-2.566**	-1.353*
	(2.41)	*(2.50)*	*(-2.41)*	*(-1.68)*
Institutional; singleton	-0.252*	-0.240*	-3.237**	-1.593
	(-1.83)	*(-1.75)*	*(-2.49)*	*(-1.48)*
Control variables				
Lagged log of size	-0.149***	-0.148***	4.489***	0.280
	(-5.13)	*(-5.07)*	*(6.50)*	*(0.44)*
Lagged dollar flows	0.000	0.000	0.001	-0.003
	(-0.25)	*(-0.22)*	*(0.06)*	*(-0.45)*
Lagged expense ratio	0.455	-0.516*	0.010	-1.250*
	(1.62)	*(-1.88)*	*(0.01)*	*(-1.69)*
Lagged turnover ratio	-0.001	-0.001	-0.026	-0.018
	(-0.34)	*(-0.27)*	*(-0.97)*	*(-0.77)*
Lagged log of age	0.188**	0.181**	0.873*	0.548
	(2.16)	*(2.08)*	*(1.88)*	*(1.51)*
Lagged log of family size	0.147***	0.154***	0.870***	0.543***
	(4.59)	*(4.81)*	*(4.62)*	*(3.07)*
Foreign eq. style dummy	0.311	0.306	3.501**	2.477
	(0.86)	*(0.84)*	*(1.96)*	*(1.54)*
Balanced style dummy	-0.107	-0.107	1.708	0.375
	(-0.34)	*(-0.35)*	*(0.63)*	*(0.17)*
N	57,743	57,743	57,743	57,743
R^2	0.010	0.013	0.045	0.010
Includes year dummies?	Yes	Yes	Yes	Yes
Broker sold = Inst w/broker?	0.09*	0.07**	0.14	0.35
Broker sold = Inst w/direct?	0.00***	0.00***	0.13	0.01***
Broker sold = Inst w/singleton?	0.07*	0.05**	0.37	0.02**
Inst. w/ broker = Inst w/direct?	0.00***	0.00**	0.01***	0.02**
Inst w/ broker = Inst w/singleton?	0.88	0.82	0.02**	0.02**
Inst w/ direct = Inst w/singleton?	0.00***	0.00***	0.58	0.81

Table 10, Mutual fund performance by distribution channel, continued
Panel C: Includes revenue sharing dummy and interaction variable

	Annual gross alpha		Annual net alpha		Gross value added		Net value added	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Revenue share dummy	-0.322**	-0.224	-0.326*	-0.226	-3.723***	-3.718***	-3.658***	-3.964***
	(-2.07)	*(-1.35)*	*(-2.09)*	*(-1.36)*	*(-3.35)*	*(-2.89)*	*(-3.90)*	*(-3.69)*
Dist. channel								
Broker sold retail	-0.374*	-0.429**	-0.378*	-0.434**	-2.556**	-2.559**	-2.455**	-2.283**
	(-1.84)	*(-2.09)*	*(-1.86)*	*(-2.11)*	*(-2.13)*	*(-2.16)*	*(-2.31)*	*(-2.16)*
Institutional; has broker sold retail	-0.082	0.055	-0.077	0.062	-3.301**	-3.294**	-1.667	-2.091*
	(-0.63)	*(0.41)*	*(-0.58)*	*(0.45)*	*(-2.38)*	*(-2.32)*	*(-1.46)*	*(-1.72)*
Inst; has broker x rev. share dummy		-0.299***		-0.303***		-0.015		0.928
		(-2.97)		*(-2.99)*		*(-0.02)*		*(1.15)*
Institutional; has direct	0.334**	0.332**	0.348***	0.346***	-2.466**	-2.466**	-1.254	-1.249
	(2.47)	*(2.46)*	*(2.57)*	*(2.55)*	*(-2.30)*	*(-2.30)*	*(-1.56)*	*(-1.55)*
Institutional; singleton	-0.150	-0.184	-0.137	-0.172	-2.066	-2.067	-0.442	-0.337
	(-1.08)	*(-1.32)*	*(-0.99)*	*(-1.24)*	*(-1.58)*	*(-1.58)*	*(-0.43)*	*(-0.33)*
Control variables								
Lagged log size	-0.153***	-0.155***	-0.151***	-0.153***	4.452***	4.452***	0.244	0.251
	(-5.13)	*(-5.22)*	*(-5.07)*	*(-5.16)*	*(6.47)*	*(6.46)*	*(0.39)*	*(0.40)*
Lagged dollar flows	0.000	0.000	0.000	0.000	0.000	0.000	-0.003	-0.003
	(-0.28)	*(-0.25)*	*(-0.25)*	*(-0.22)*	*(0.05)*	*(0.05)*	*(-0.46)*	*(-0.47)*
Lagged expense ratio	0.479*	0.470*	-0.492*	-0.501*	0.287	0.287	-0.978	-0.949
	(1.73)	*(1.70)*	*(-1.81)*	*(-1.85)*	*(0.27)*	*(0.27)*	*(-1.30)*	*(-1.25)*
Lagged turnover ratio	-0.001	-0.001	-0.001	-0.001	-0.028	-0.028	-0.019	-0.019
	(-0.38)	*(-0.39)*	*(-0.31)*	*(-0.31)*	*(-1.05)*	*(-1.05)*	*(-0.86)*	*(-0.86)*
Lagged log age	0.191**	0.193**	0.184**	0.186**	0.912**	0.912**	0.586	0.580
	(2.18)	*(2.21)*	*(2.11)*	*(2.13)*	*(1.96)*	*(1.97)*	*(1.60)*	*(1.59)*
Lagged log family size	0.172***	0.171***	0.179***	0.178***	1.155***	1.155***	0.823***	0.827***
	(5.25)	*(5.21)*	*(5.47)*	*(5.43)*	*(5.52)*	*(5.48)*	*(4.20)*	*(4.20)*
Foreign equity style	0.315	0.317	0.310	0.312	3.552**	3.552**	2.527	2.521
	(0.87)	*(0.88)*	*(0.86)*	*(0.86)*	*(1.99)*	*(1.98)*	*(1.57)*	*(1.57)*
Balanced style dummy	-0.103	-0.103	-0.103	-0.103	1.753	1.753	0.420	0.420
	(-0.33)	*(-0.33)*	*(-0.33)*	*(-0.33)*	*(0.65)*	*(0.65)*	*(0.19)*	*(0.19)*
N	57,743	57,743	57,743	57,743	57,743	57,743	57,743	57,743
R^2	0.010	0.010	0.013	0.013	0.045	0.045	0.010	0.010
Includes yr. dummies?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Inst broker sold and revenue share (rev +inst broker sold + interaction)		-0.468***		-0.468***		-7.027***		-5.127***
		(-4.29)		*(-4.25)*		*(-5.56)*		*(-4.85)*
Inst broker sold and revenue share – Inst broker sold and not revenue share (rev + interaction)		-0.523***		-0.529***		-3.733***		-3.036***
		(-3.36)		*(-3.39)*		*(-3.72)*		*(-3.50)*

Table 10, Mutual fund performance by distribution channel, continued
Panel D: Includes affiliated fund dummy and interaction variable

	Annual gross alpha		Annual net alpha		Gross value added		Net value added	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Affiliated with dual-registrant	-0.205**	-0.232**	-0.206**	-0.234**	-1.757**	-2.280**	-1.418**	-1.879**
	(-2.01)	*(-2.19)*	*(-2.02)*	*(-2.20)*	*(-2.06)*	*(-2.04)*	*(-2.11)*	*(-2.10)*
Affiliated with independent RIA	0.135	0.136	0.138	0.139	0.350	*0.360*	-0.671	-0.662
	(0.76)	*(0.77)*	*(0.77)*	*(0.78)*	*(0.26)*	*(0.27)*	*(-0.59)*	*(-0.59)*
Dist. channel								
Broker sold retail	-0.509***	-0.506***	-0.515***	-0.512***	-4.190***	-4.135***	-4.097***	-4.049***
	(-2.97)	*(-2.97)*	*(-3.01)*	*(-3.01)*	*(-3.64)*	*(-3.63)*	*(-4.15)*	*(-4.16)*
Institutional; has broker sold retail	-0.247***	-0.263***	-0.244**	-0.260***	-5.272***	-5.580***	-3.637***	-3.908***
	(-2.64)	*(-2.70)*	*(-2.59)*	*(-2.65)*	*(-4.36)*	*(-4.26)*	*(-3.59)*	*(-3.52)*
Inst; has broker x affiliated dummy		0.091		0.093		1.741		1.534
		(0.59)		*(0.61)*		*(1.44)*		*(1.48)*
Institutional; has direct	0.339**	0.343***	0.353***	0.356***	-2.407**	-2.342**	-1.176	-1.119
	(2.54)	*(2.59)*	*(2.63)*	*(2.69)*	*(-2.24)*	*(-2.18)*	*(-1.44)*	*(-1.37)*
Institutional; singleton	-0.245*	-0.244*	-0.234*	-0.232*	-3.197**	-3.172**	-1.576	-1.553
	(-1.79)	*(-1.79)*	*(-1.72)*	*(-1.71)*	*(-2.47)*	*(-2.46)*	*(-1.48)*	*(-1.47)*
Control variables								
Lagged log size	-0.151***	-0.151***	-0.150***	-0.150***	4.475***	4.475***	0.269	0.269
	(-5.13)	*(-5.13)*	*(-5.07)*	*(-5.07)*	*(6.48)*	*(6.48)*	*(0.43)*	*(0.43)*
Lagged dollar flows	0.000	0.000	0.000	0.000	0.001	0.001	-0.003	-0.003
	(-0.24)	*(-0.24)*	*(-0.21)*	*(-0.21)*	*(0.06)*	*(0.06)*	*(-0.45)*	*(-0.45)*
Lagged expense ratio	0.455	0.456	-0.516*	-0.515*	-0.001	0.023	-1.272*	-1.252*
	(1.62)	*(1.62)*	*(-1.87)*	*(-1.86)*	*(0.00)*	*(0.02)*	*(-1.71)*	*(-1.68)*
Lagged turnover ratio	-0.001	-0.001	-0.001	-0.001	-0.026	-0.026	-0.018	-0.018
	(-0.34)	*(-0.34)*	*(-0.26)*	*(-0.27)*	*(-0.96)*	*(-0.97)*	*(-0.77)*	*(-0.78)*
Lagged log age	0.189**	0.189**	0.182**	0.182**	0.878*	0.886*	0.547	0.554
	(2.17)	*(2.17)*	*(2.09)*	*(2.09)*	*(1.89)*	*(1.91)*	*(1.51)*	*(1.52)*
Lagged log family size	0.149***	0.149***	0.156***	0.156***	0.886***	0.890***	0.557***	0.560***
	(4.63)	*(4.62)*	*(4.85)*	*(4.85)*	*(4.64)*	*(4.62)*	*(3.10)*	*(3.09)*
Foreign equity style	0.318	0.318	0.313	0.313	3.553**	3.552**	2.509	2.509
	(0.88)	*(0.88)*	*(0.87)*	*(0.87)*	*(1.99)*	*(1.99)*	*(1.57)*	*(1.57)*
Balanced style dummy	-0.107	-0.108	-0.107	-0.108	1.709	1.695	0.377	0.365
	(-0.34)	*(-0.35)*	*(-0.35)*	*(-0.35)*	*(0.63)*	*(0.62)*	*(0.17)*	*(0.17)*
N	57,743	57,743	57,743	57,743	57,743	57,743	57,743	57,743
R^2	0.011	0.010	0.014	0.013	0.045	0.045	0.010	0.010
Includes yr. dummies?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Inst broker sold and revenue share (affil +inst broker sold + interaction)		-0.404***		-0.401***		-6.120***		-4.254***
		(-2.67)		*(-2.66)*		*(-5.42)*		*(-4.68)*
Inst broker sold and revenue share – Inst broker sold and not revenue share (affil + interaction)		-0.141		-0.140		-0.539		-0.345
		(-0.89)		*(-0.89)*		*(-0.75)*		*(-0.57)*

Figure 1: Regulatory Assets Under Management, in US Dollar Billions
All Dual-Registrants, Top 75 Dual-Registrants, and Independent RIAs

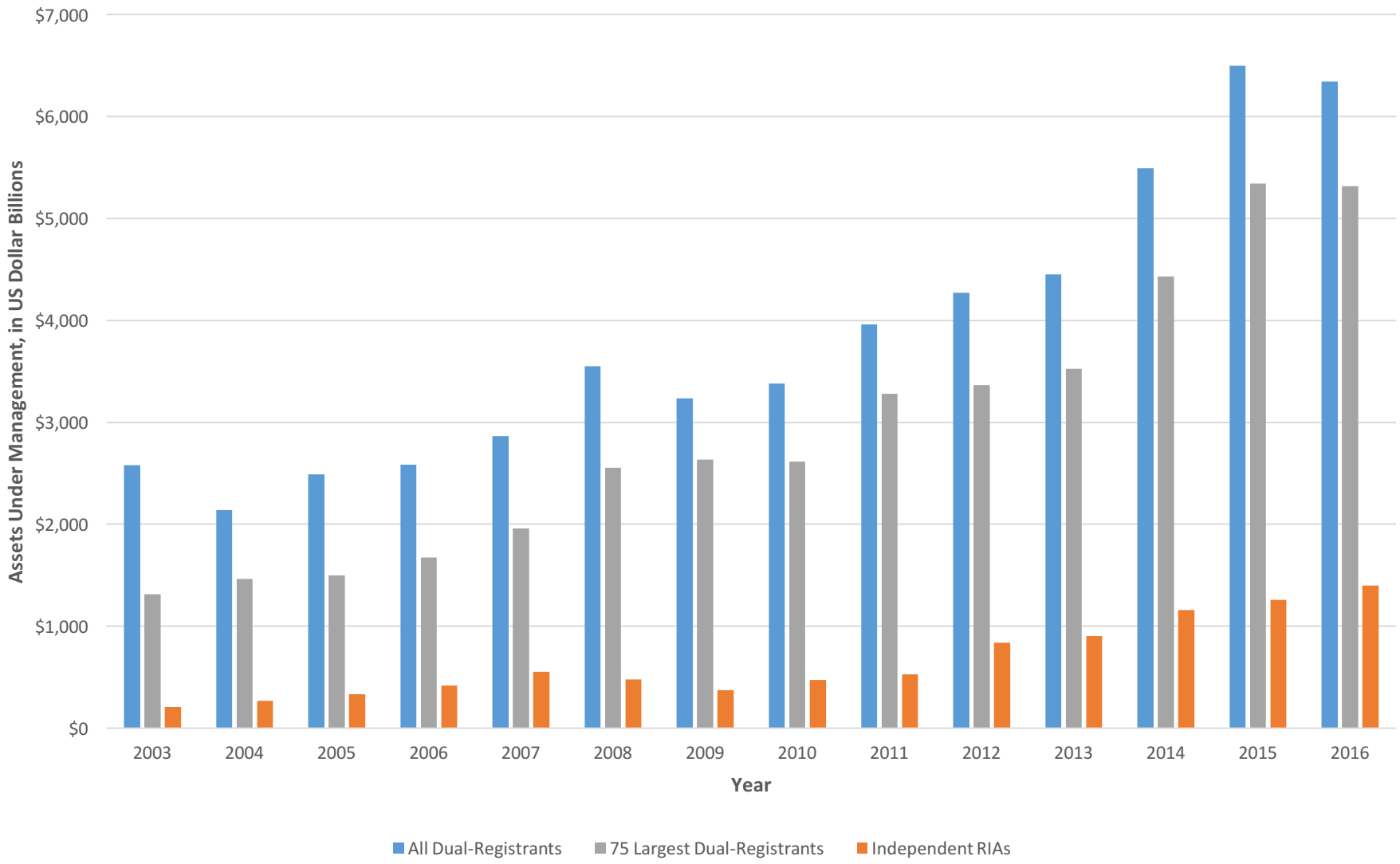


Figure 2:
Commission and Fee Based Revenues in US Dollar Billions, 2007-2016
Based on *Financial Planning* Survey of the Top Independent Broker-Dealers

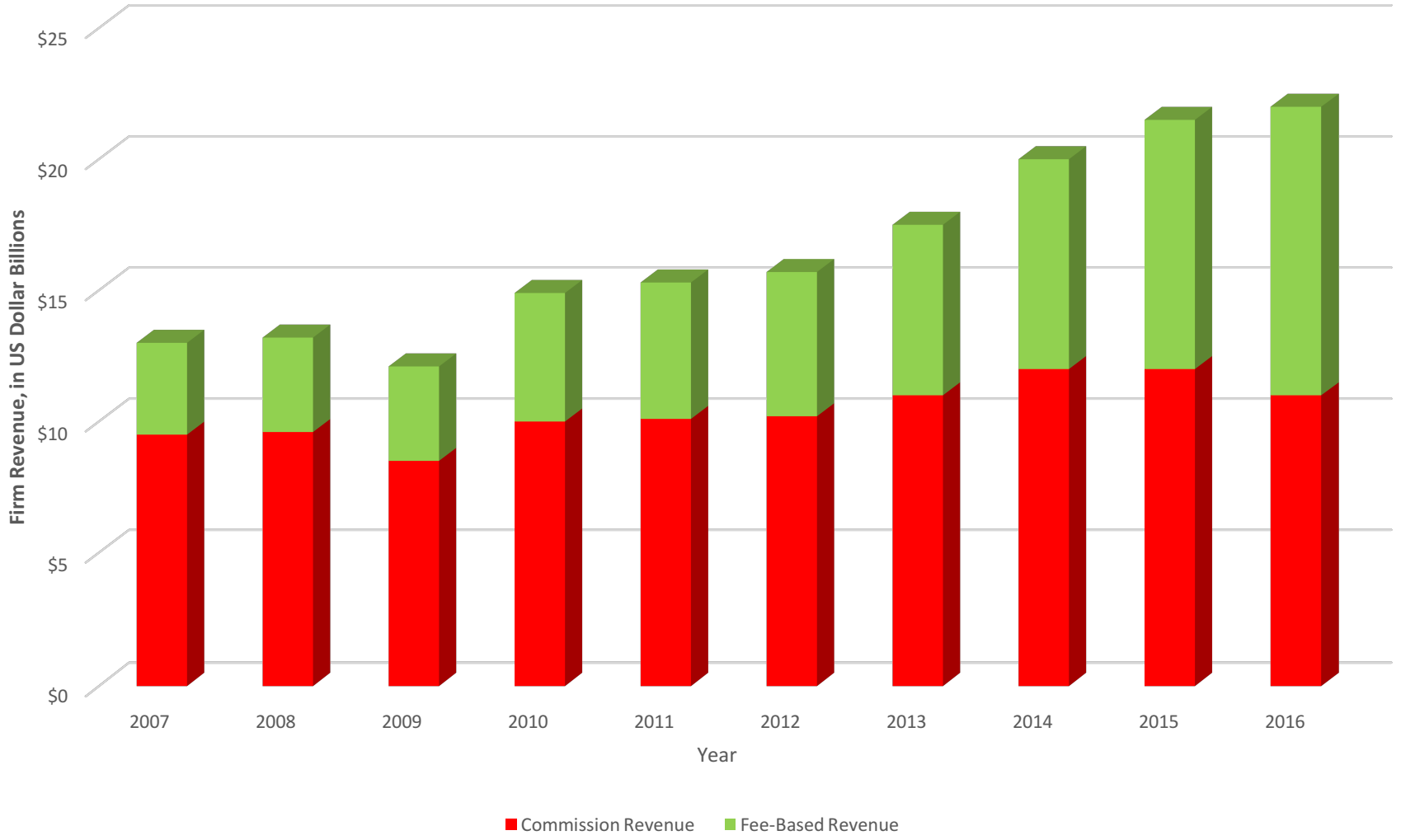


Figure 4: Total Assets by Distribution Category
In US Billions of Dollars, Adjusted for Inflation (Year 0 = 2003)

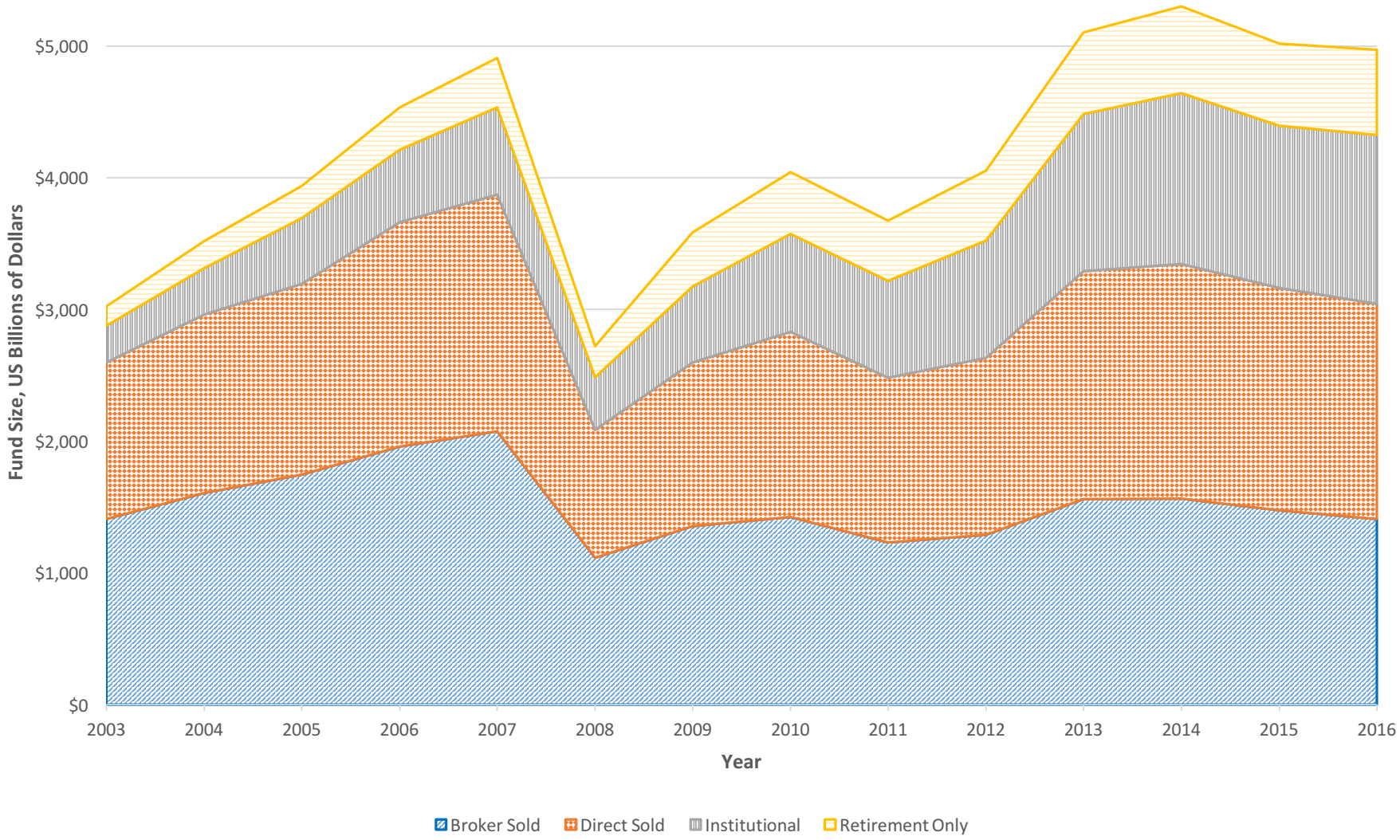


Figure 5: Cumulative mutual fund flows by distribution channel, 2003-2016
In US billions of dollars, adjusted for Inflation (Year 0 = 2003)

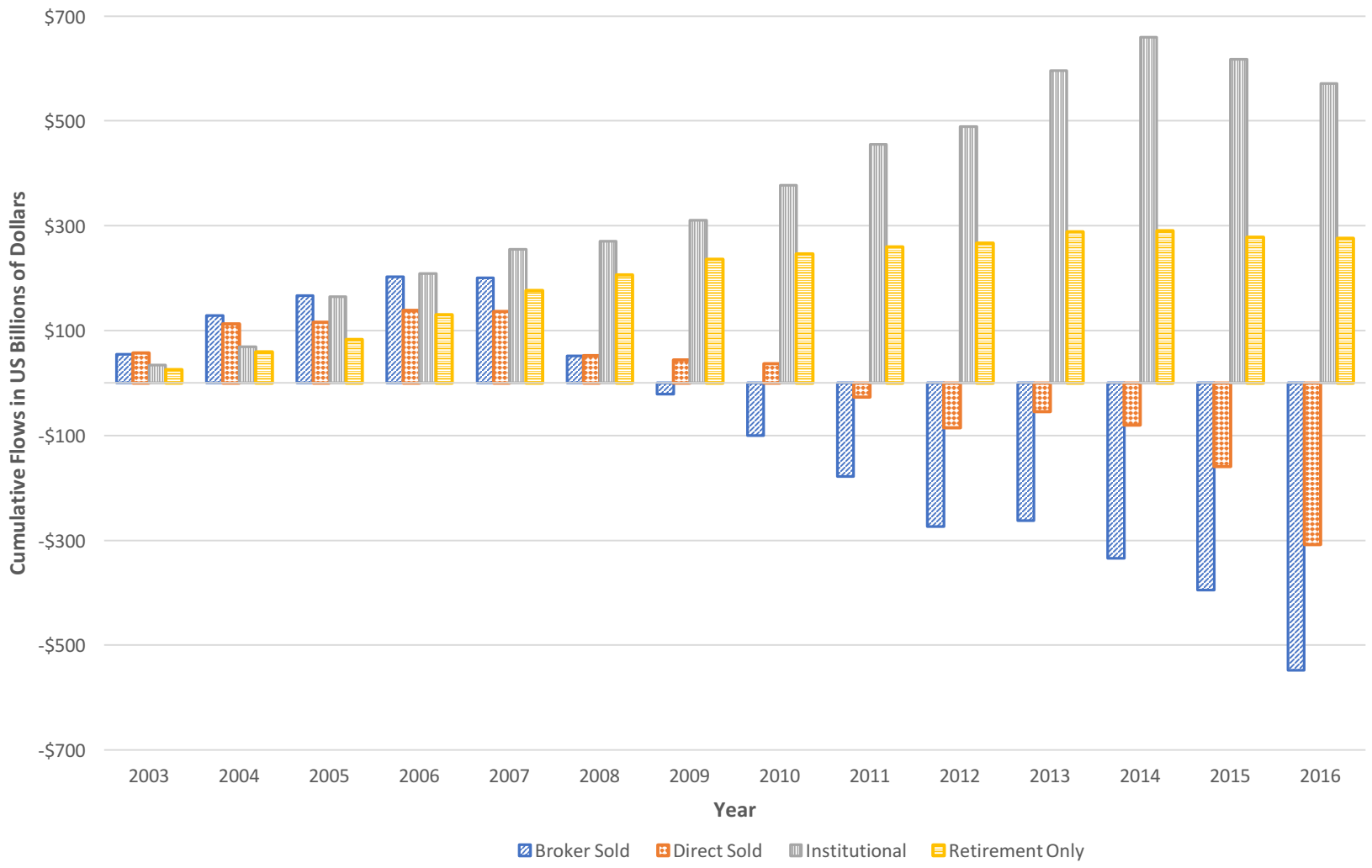
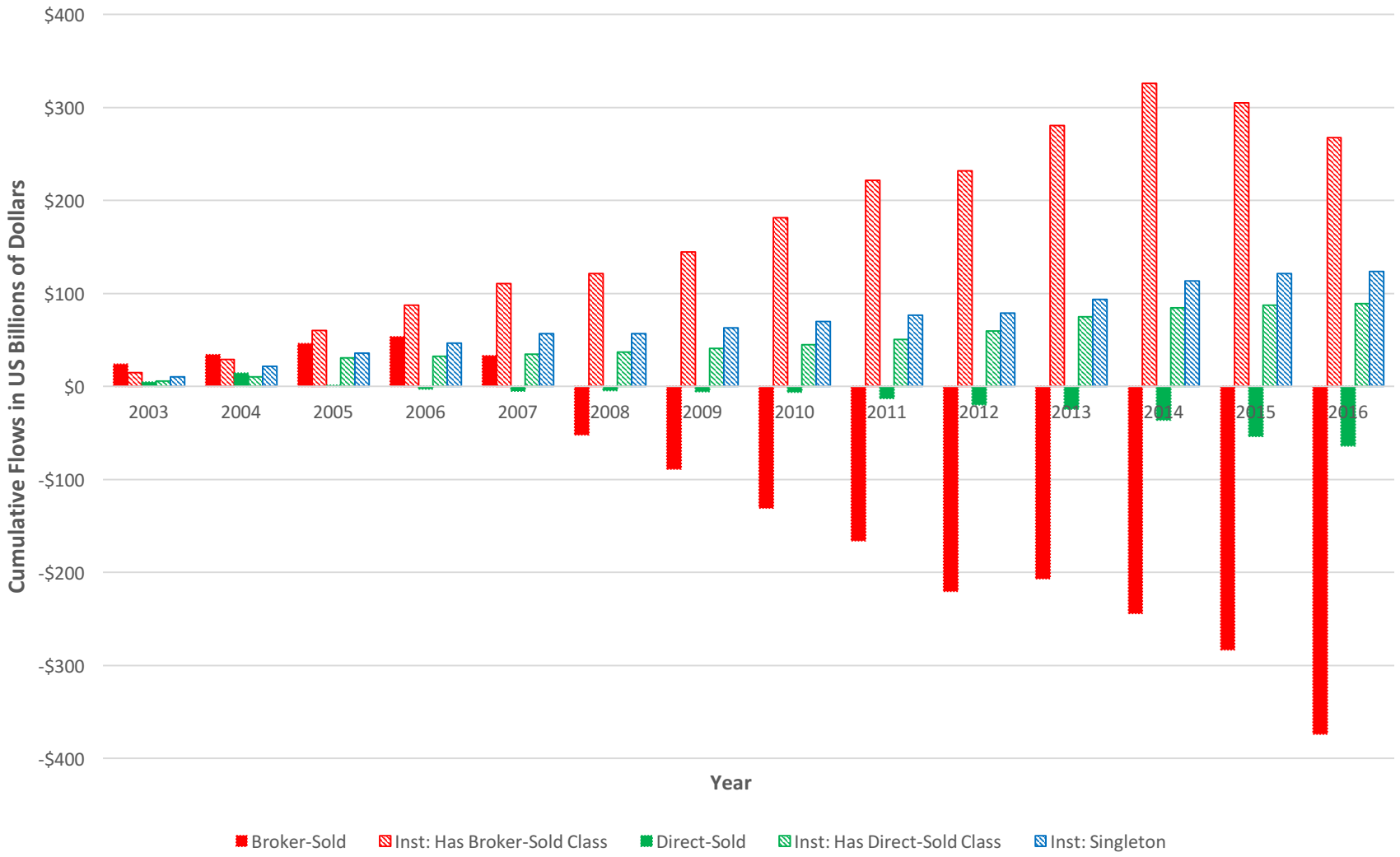


Table 6:
Retail and Institutional Portfolio Pairs: Cumulative Fund Flows, In US $ Billions 2003-2016
Adusted for Inflation (Year 0 = 2003)



Appendix A: Description of variables

Variable name	Description	Data Source
Assets and employees		
Assets under management	Assets under management by RIA	Form ADV
Number of advisory clients	Number of advisory clients	Form ADV
Number individual clients	Estimated based on the midpoint of the stated range of individual clients that are not high net worth clients times the total number of advisor clients	Form ADV
Proportion of clients that are individuals	Estimated using midpoint of stated ranges of individual clients that are not high net worth clients; e.g. (1-10, 11-50)	Form ADV
Estimated total AUM for individuals	Estimated using midpoint of stated ranges of individual clients clients that are not high net worth clients multiplied by assets under management	Form ADV
Number of employees	Number of total employees, excluding clerical, administrative, and support	Form ADV
Number of investment adviser reps. (IARs)	Number of investment adviser representatives (registered with SEC as fiduciaries)	Form ADV
Number of registered representatives	Number of registered representatives (registered with FINRA as brokers)	Form ADV
Prop. of employees also insurance agents	Proportion of insurance agents scaled by total number of employees (available since 2011)	Form ADV
Number of clients per IAR	Total clients scaled by number of investment adviser representatives	Form ADV
Firm characteristics		
Dummy: PM of wrap program	Indicator variable set to 1 if the firm is the portfolio manager of a wrap fee program	Form ADV
Dummy: sponsors wrap program	Indicator variable set to 1 if the firm sponsors a wrap fee program	Form ADV
Dummy: offers financial planning (FP)	Indicator variable set to 1 if the firm provides financial planning services	Form ADV
Dummy: has zero FP clients	Indicator variable set to 1 if the firm has zero financial planning clients	Form ADV
Proportion of clients receiving FP	Proportion of financial planning clients divided by the total number of clients	Form ADV
Disciplinary actions in past 10 years (dummy variable =1 if firm employs at least one), in percent		
Dummy: Convicted felon	Indicator variable set to 1 if the firm has at least one adviser convicted of a felony	Form ADV
Dummy: Convicted of misdemeanor	Indicator variable set to 1 if the firm has at least one adviser convicted of a misdemeanor involving investments	Form ADV
Dummy: False statement to SEC/CFTC	Indicator variable set to 1 if the firm has at least one adviser that has made a false statement or omission	Form ADV
Dummy: Violate SEC/CFTC statutes	Indictor variable set to 1 if the firm has at least one adviser that has been involved in a violation of SEC or CFTC regulations or statutes	Form ADV
Dummy: SEC order against	Indicator variable set to 1 if the SEC or CTFC has entered an order against at least one adviser in connection with investment related activity	Form ADV

Variable name	Description	Data Source
Dummy: Court enjoined	Indicator variable set to 1 if a domestic or foreign court has enjoined at least one adviser in connection with any investment related activity	Form ADV
RIA data from Form ADV Part 2		
RIA start date	Date that the RIA registered with the SEC	Form ADV Part 2
Dummy: Accept retail clients	Indicator set to 1 if the RIA accepts retail clients with assets under $100,000	Form ADV Part 2
Minimum investment, all firms (US $)	Minimum required investment	Form ADV Part 2
Fee for > $1MM AUM: Percent of AUM	Marginal fee as a percent of assets for assets > $1,000,000. This is reported as the marginal fee, not the average fee.	Form ADV Part 2
Minimum investment if accept retail	Minimum required investment for the subset of firms that accept retail investors	Form ADV Part 2
Fee for <$100K AUM: Percent of AUM	Marginal fee as a percent of assets for assets < $100,000. This is reported as the marginal fee, not the average fee.	Form ADV Part 2
Dummy: Engages in revenue sharing	Indicator set to 1 if the firm reports that it participates in revenue sharing	Form ADV Part 2
Dummy: Offers limited number of mutual fund families	Indicator set to 1 if the firm provides access to a limited number of mutual fund families	Form ADV Part 2
Dummy: Offers only mutual funds that engage in revenue sharing	Indicator set to 1 if the firm only provides access to mutual funds that engage in revenue sharing	Form ADV Part 2
Dummy: Has preferred list of mutual funds	Indicator set to 1 if the firm ranks mutual funds on a preferred list, or offers different tiers of funds through advisers	Form ADV Part 2
Dummy: Has affiliated mutual funds	Indicator set to 1 if the firm advises or subadvises a mutual fund	Form ADV Part 2
Dummy: Affiliated mutual funds subject to reduced due diligence	Indicator set to 1 if the firm reports performing less due diligence on affiliated mutual funds relative to third party funds	Form ADV Part 2
Number ADV Part 2 firms with at least one disciplinary action	Number of ADV Part 2 firms that have at least one disciplinary action from the SEC, FINRA, or a state or other regulator	Form ADV Part 2
Number disciplinary actions in last 10 years	Conditional on having at least one disciplinary action, the number of disciplinary actions in the past 10 years	Form ADV Part 2
Total fines in last 10 years ($)	Conditional on having at least one disciplinary action, the total fines related to disciplinary actions in the past 10 years	Form ADV Part 2
Fines associated with registered reps.	Total fines associated with the brokerage arm of the business	Form ADV Part 2
Disciplinary action related to registered representatives		
Dummy: Reg rep has conflict of interest	Indicator variable set to one if the firm was disciplined because a registered representative had a conflict of interest	Form ADV Part 2
Dummy: Reg rep misled investors	Indicator variable set to one if the firm was disciplined because a registered representative misled investors	Form ADV Part 2

Variable name	Description	Data Source
Dummy: Reg rep not properly supervised	Indicator variable set to one if the firm was disciplined because a registered representative was not properly supervised	Form ADV Part 2
Disciplinary action related to registered representatives		
Dummy: Improper data reporting or other internal control violation	Indicator variable set to one if the firm was disciplined because the brokerage side of the business reported improper data or had an internal control violation	Form ADV Part 2
Dummy: Reg rep overcharged mutual fund or variable annuity fees	Indicator variable set to one if the firm was disciplined because a registered representative overcharged clients mutual fund or variable annuity fees	Form ADV Part 2
Dummy: Reg rep traded ahead of clients	Indicator variable set to one if the firm was disciplined because a registered representative traded ahead of clients	Form ADV Part 2
Dummy: Reg rep engaged in arket manipulation	Indicator variable set to one if the firm was disciplined because a registered representative engaged in market manipulation	Form ADV Part 2
Dummy: Data hack occurred	Indicator variable set to one if the firm was disciplined because the firm experienced a data hack	Form ADV Part 2
Disciplinary action related to investment adviser representatives (IAR)		
Fines associated with IARs	Total fines associated with the RIA arm of the business	Form ADV Part 2
Dummy: IAR has conflict of interest	Indicator variable set to 1 if an IAR has a conflict of interest	Form ADV Part 2
Dummy: IAR not properly supervised	Indicator variable set to 1 if the firm did not properly supervise an IAR	Form ADV Part 2
Dummy: IAR misled investors	Indicator variable set to 1 if an IAR misled investors	Form ADV Part 2
Dummy: IAR overcharged advisory fees	Indicator variable set to 1 if an IAR overcharged advisory fees	Form ADV Part 2
Dummy: IAR overcharged 12b-1 fees	Indicator variable set to 1 if an IAR overcharged 12b-1 fees	Form ADV Part 2
Mutual fund data		
AUM ($ Million)	Assets under management in millions	CRSP
Net dollar flow ($ Million)	$AUM_t - (AUM)_{t-1} \times (1+r)$	CRSP
Net percent flow (% of AUM)	Net dollar flow/AUM_{t-1}	CRSP
Fund age, years	Estimated based on fund start date	CRSP
Expense ratio (% of AUM)	Total fund expenses/AUM	CRSP
Turnover ratio (% of AUM)	Minimum (of aggregated sales or aggregated purchases of securities), divided by the average 12-month Total Net Assets of the fund	CRSP
Domestic equity dummy	Dummy set to 1 if firm is domestic equity style	CRSP
Balanced dummy	Dummy set to 1 if firm invests in both stocks and bonds in relatively similar proportions	CRSP
Foreign equity dummy	Dummy set to 1 if firm is foreign equity style	CRSP
Gross alpha (annual %)	Gross of fee return estimated using 11 Vanguard funds as a benchmark and rolling three year regressions	CRSP

Variable name	Description	Data Source
Net alpha (annual %)	Net of fee return estimated using 11 Vanguard funds as a benchmark and rolling three year regressions	CRSP
Gross value added ($ millions)	Gross alpha times fund size	CRSP
Net value added ($ millions)	Net alpha times fund size	CRSP

Appendix B: Revenue sharing families among top 25 broker dealers

Fund family	Times named (total possible = 23)
Oppenheimer	16
Franklin Templeton	15
American Funds	15
AIM/Invesco	13
Lord Abbett	12
Pimco	11
JP Morgan	11
John Hancock	11
MFS	9
Hartford	9

Appendix C
Description of Share Class Categorization Method

Beginning with the CRSP Survivorship Bias Free Mutual Fund Database, I first select all actively-managed equity-based mutual funds for the period 2003-2016. These funds include the styles of domestic equity, foreign equity, and balanced funds (usually allocated approximately equally to stocks and bonds). I clean the data in a manner similar to Berk and van Binsbergen (2015). I drop funds of all other styles, including asset allocation funds that invest in other mutual funds (also known as target date funds or TDFs).

I next classify funds into distribution channels. For consistent channel classification, I use mutual fund prospectus data from the SEC website. I read each prospectus for each fund share class for each year and classify fund share classes as "broker sold retail," "direct sold retail," "institutional," or "retirement only." Broker sold retail funds have low minimum investments, few other restrictions, and brokerage commissions also known as loads, that range from 1% annually to a one-time commission of 5.75%. Direct sold retail funds have low minimum investments, few other restrictions, and brokerage commissions (12b-1 fees) of less than 0.25% per year.

To classify share classes as *institutional*, I create a standardized definition, requiring that the share class be either: a) restricted to certain eligible investors and/or b) have a minimum of at least $100,000. These share classes attract true institutions like pensions and endowments, and are frequently also open to clients of investment advisers and retirement plans. Finally, to classify a share class as "retirement only" the share class must be restricted for sale to retirement plans.

My method significantly enhances the current CRSP approach of classifying share classes as either retail or institutional. My final sample includes 5,470 separate fund portfolios, representing 13,979 different share classes. Of the 5,470 portfolios, 827 have at least one class that is misclassified in CRSP as retail but is actually institutional, for a 15% error rate. Further, 483 portfolios are misclassified as institutional when they should be retail, an error rate of 9%, for a total error rate of 24% in CRSP. In addition to correcting these errors, I create the new share class category of retirement only. Of the 5,470 portfolios, 1,613 have a retirement share class. For the other three share classes, 3,106 portfolios have an institutional class, 2,839 have a broker sold class, and 2,198 have a direct sold class. Within the institutional class, I also collect detail about the types of investors permitted to invest in each share class (when disclosed in sufficient detail), as well as how both the eligible investors and minimum investment requirements change over time for each share class.