

Unbundling the Value of Portfolio Management and Distribution in Retail Mutual Funds: Evidence from Subadvisory Contracts

Diane Del Guercio, Jonathan Reuter, and Paula A. Tkac

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Diane Del Guercio
Lundquist College of Business
1208 University of Oregon
Eugene, OR 97403-1208
541-346-5179
dianedg@uoregon.edu

Jonathan Reuter
Carroll School of Management
Boston College
Chestnut Hill, MA 02467
617-552-2863
reuterj@bc.edu

Paula A. Tkac
Research Department
Federal Reserve Bank of Atlanta
1000 Peachtree St. NE
Atlanta, GA 30309
404-498-8813
paula.tkac@atl.frb.org

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Abstract

We find that mutual fund families sell their funds through a small number of distribution channels, and that some pairs, such as the direct and advice channels, are rarely served simultaneously. These patterns are consistent with investors demanding different bundles of services in different channels, and with it being costly or inherently incompatible for families to serve different clienteles simultaneously. We argue that the relatively common industry practice of subadvising, where a family outsources a fund's portfolio management to an outside firm, is a cost- and incompatibility-minimizing response to barriers to expanding distribution. Indeed, we present evidence that mutual fund families (and separate account managers) prefer to expand distribution into new channels indirectly as subadvisors for other fund families rather than enter these channels directly. When we use negotiated subadvisory fees to estimate the unbundled value of distribution services, we find strong evidence that fund investors value these services—not just performance.

I. Introduction

The mutual fund literature often implicitly assumes that the market for retail mutual funds is fully integrated, such that each investor has equal access to each fund, and that portfolio management is the primary dimension along which funds compete. These assumptions, in turn, underlie numerous puzzles regarding fund industry practices and investor behavior. For example, the proliferation of seemingly identical funds, the large dispersion in fund fees, and the continued demand for actively managed funds despite their underperformance relative to index funds, have all been difficult for researchers to reconcile with investor rationality. In this paper, we challenge the assumptions that give rise to these puzzles. We argue that the market for retail mutual funds is significantly segmented by distribution channels because investors in different channels value different bundles of services. In particular, we argue that many investors attach more value to financial advice or one-stop shopping than the literature assumes.

To provide broad evidence on the extent of market segmentation and the economic value of distribution services, we combine large sample evidence on the distribution practices of mutual fund families with novel evidence from the subadvisory market, whereby families can outsource portfolio management to other asset management firms. We study the characteristics of the firms on both sides of the subadvisory market, including which particular pairs of firms enter contracts, and the fees for portfolio management that they negotiate. By doing so, we uncover a host of evidence consistent with fund families competing for investors primarily with the other families in their distribution channel rather than in an integrated market, and competing on the basis of a wide variety of investor services, including, but in no way limited to, portfolio management.¹

¹ Hortacsu and Syverson (2004) make a related point in their study of price dispersion among homogeneous S&P500 index funds. Specifically, they estimate information and search costs from a structural model of competition in the

Because a family's revenue is a percentage of assets under management, one might expect families to offer their funds for sale through as many distribution channels as possible, where a distribution channel is simply a unique access point to a set of investors. Yet, we find the opposite. Using detailed distribution channel data from Financial Research Corporation from 1996 to 2002, we find that the typical fund family distributes over 90% of their assets through a single distribution channel and rarely expands their distribution into new channels. Moreover, this result is not driven by small families; in 2002 the top 25 largest families distribute an average of 85.8% of their assets through a single channel and 21 of these 25 families have been in their same primary channel since 1996.

We argue that the tendency for families to narrowly distribute their funds is driven by two related phenomena. First, there is substantial heterogeneity among mutual fund investors in terms of the specific services they value, and it is costly for families to simultaneously provide these disparate bundles of services. In the direct distribution channel, do-it-yourself investors are comfortable making their own investment decisions and choose funds primarily based on performance, cost, and convenience. Other investors in the advice distribution channel prefer face-to-face interaction and demand costly personalized service to aid in their financial planning, asset allocation, and implementation of mutual fund purchases. Consistent with these differences in investor priorities, we find that flows in the direct channel are economically and statistically more sensitive to recent fund performance than flows in the advice channel.

The substantially different services demanded across the direct and advice channels suggest that families investing in the infrastructure to support one type of investor services

fund industry and show that the mass entry of novice investors into mutual funds in the late 1990s coincides with a rise in search costs in the load-fund sector of the industry. They interpret the survival of high-fee load funds for a homogeneous product (index funds) as consistent with high-information-cost investors valuing advice services. Elton, Gruber, and Busse (2004) interpret similar evidence as consistent with financial advisors successfully selling overpriced, inferior products to uninformed investors.

cannot easily transfer that competitive advantage to another. To provide a concrete example of the costs involved, we describe Janus' recent transition from distributing primarily through the direct channel to distributing exclusively through a salesforce in the wholesale broker channel. Janus' multi-year effort suggests that success in a new distribution channel requires significant investments in technology, personnel, and infrastructure, as well as patience.

The second driver of the typical family's channel concentration becomes evident when we focus on the families that distribute through more than one channel. We find that certain pairs of distribution channels are notably rare or non-existent, suggesting that these channels are inherently incompatible. For example, we seldom observe a family simultaneously distributing through the direct and advice channels. This is likely due to the fact that brokers compensated through transaction-based fees (loads) would be unwilling to provide costly asset allocation advice and fund recommendations to investors who could then purchase the funds over the internet. Interestingly, Janus closed their direct platform to new investors in July 2009, deliberately choosing not to distribute simultaneously through the direct and wholesale channels, despite having operated in the direct channel for decades.²

We argue that the relatively common industry practice of subadvising is a cost- and incompatibility-minimizing response to barriers to expanding distribution.³ In particular, we argue that it can be better to expand distribution *indirectly* as a subadvisor for other fund families than to enter new channels directly. For example, in 2002 Vanguard outsourced the portfolio management function for its Windsor Fund and US Growth Fund to Alliance Capital. By doing so, portfolio managers employed by Alliance Capital make the stock-picking decisions for these funds, and Alliance collects subadvisory fees. Alliance also expands its retail distribution from

² See Janus' 3/16/09 press release on janus.com.

³ In 2002, 18% of actively managed domestic equity mutual funds are outsourced to a subadvisor, and 38% of fund families participate in the subadvisory market as either a buyer or seller of portfolio management services.

the wholesale channel where it primarily distributes its own brand of funds, to include new investors in Vanguard's direct channel.

At first glance, it may seem odd that Alliance is willing to pick stocks for another fund family that is presumably its competitor. Given our findings on market segmentation, however, this practice is not at all puzzling because Vanguard and Alliance sell through different channels and are not competing for the same investors. Thus, little cannibalization should occur. Subadvising allows Alliance to outsource distribution to Vanguard, alleviating the need to invest in the infrastructure required to provide a new bundle of services. Moreover, subadvising solves the incompatibility problem in that Alliance's salesforce is not in direct competition with the similar, but lower-cost Vanguard funds. The implicit assumption is that investors perceive similar funds marketed under the same family name to be the same product (which is why Alliance could not simultaneously offer the Alliance Growth Fund in the direct channel) but perceive funds marketed under different family names to be different products, allowing both the Alliance and the Vanguard version of the same fund to co-exist.

If our solution to the "why pick stocks for the competition?" puzzle is correct, we should rarely observe subadvisors that distribute their own mutual funds through the same distribution channels as the funds for which they subadvise. Indeed, within a comprehensive sample of 597 subadvisory contracts for actively managed domestic equity funds in 2002, we find that 91% of all family-subadvisor pairs are cases where the primary distribution channels of the family and subadvisor differ, supporting our joint hypothesis that the retail fund market is segmented, and that our data on distribution channel sufficiently captures differences in a family's target clientele. We also find evidence that subadvising leads to meaningful expansion of distribution.

In terms of assets under management, the assets managed outside their primary channel via subadvising account for 18.3% of the total assets managed by the average family.

We find that approximately one-half of subadvisors are separate account firms that primarily manage on behalf of pension funds and endowments. These asset managers cater exclusively to the institutional market—where the typical mandate of a new client is \$84 million (Goyal and Wahal (2008))—and do not offer retail mutual funds. Subadvising allows separate account managers to expand assets under management much more cheaply than entering the retail mutual fund market directly, and to eliminate any diseconomies of scope that might be perceived by their institutional clients.

Finally, by studying the negotiated fee schedules in subadvisory contracts, we are able to extract estimates of the value that the family places on the subadvisor's portfolio management services, relative to the value that the subadvisor places on expanding their retail distribution. Our evidence is consistent with firms in this industry deriving higher value from distribution and advice services relative to portfolio management, and thus indirectly shows that investors place a similarly higher relative value on these services. We cannot speak to whether the value to investors is real or perceived, but we do find that distribution services are valued by both parties to these contracts. However, consistent with our evidence that investors in the direct channel are the most performance-sensitive, we also find that families distributing through the direct channel are willing to pay a fee premium to skilled subadvisors. Overall, we conclude that while competition in the direct channel may be focused on returns, in channels where investors demand advice or one-stop shopping, underperforming funds can thrive by competing on distribution services.

Our paper intersects two small literatures on fund distribution and the practice of subadvising, but we are the first to highlight and analyze the strong connection between the two. Whereas other contemporaneous studies analyze subadvising from the perspective of families outsourcing portfolio management (the demand for subadvising), we focus on the suppliers of subadvising services, which symmetrically can be viewed as outsourcing distribution. Kuhnen (2009) tests whether the social network connections of mutual fund boards influence their decision to approve subadvisory contracts. Chen, Hong, and Kubik (2008), Cashman and Deli (2009), and Duong (2007) provide evidence on the performance of subadvised mutual funds relative to internally-managed funds. Our work is also complementary to two recent papers on fund distribution, both of which focus on the incentives, behavior, and the role of brokers in the fund industry. Using tests based on fund return performance, Bergstresser, Chalmers, and Tufano (2009) fail to find evidence supportive of broker services benefitting fund investors, but concede that some benefits may be unobservable or difficult to measure.⁴ Less directly related to the analysis in this paper, Christoffersen, Evans, and Musto (2009) compare the response of brokers captive to the fund family and wholesale brokers to variation in load-sharing and broker payments.

The paper proceeds as follows. The next section presents evidence on segmentation by distribution channel in the mutual fund industry. Section III describes the underlying drivers of segmentation and Section IV describes the market for subadvisors, as well as their motivation to expand distribution indirectly via subadvising. Section V uses fee data to test for the relative bargaining power between fund families and subadvisors, while Section VI concludes.

⁴ Bergstresser, Chalmers, and Tufano (2009) use the same data source, Financial Research Corporation, to study differences between those funds marketed directly to investors and those sold through a broker. We thank these authors and FRC for providing us with the distribution channel data.

II. Segmentation in distribution channels of retail fund families

From a family's perspective, successfully attracting a new investor to a fund requires that they offer the specific bundle of services demanded by that investor. For investors who are the do-it-yourself type, the demanded bundle simply contains performance, ease of access to online information, and transaction services. Other investors, however, are not comfortable making their own investment decisions and require advice from a financial advisor. These investors demand a different bundle of services consisting of performance, face-to-face interaction, and financial planning advice. Thus, accessing these two investor types requires a family to provide a different bundle of services to each type, or, to distribute their funds in two distinct distribution channels. Conceptually, a distribution channel is an access point to a set of customers that could not be reached via some other distinct channel.⁵ As we describe more fully in the next section, we use the same six retail distribution channels as our data source, Financial Research Corporation: direct, institutional, captive broker, bank, insurance company, and wholesale broker.

We argue that each channel offers a unique bundle of services, and that a family's success in each channel requires a different set of inputs. For example, families successful in the direct channel target investors that respond to a well designed web presence, advertising that reaches individual investors in their daily lives, and innovative products and decision-making tools that add value to a more sophisticated investor.⁶ In contrast, in the captive broker and wholesale broker channels, target investors require costly personalized service in financial

⁵ The distribution channels we describe and analyze are consistent with the descriptions in publicly-traded asset management firms own annual reports. For example, Janus' 2008 10-k filing available on the SEC's EDGAR site states that Janus distributes through the retail intermediary (which we label 'wholesale broker') and institutional channels. "Each distribution channel focuses on specific investor groups and the unique requirements of each group." See also the 10-k filings of Legg Mason, Federated Investors, and T. Rowe Price.

⁶ Fidelity Investments, for example, established a Center for Applied Technology which conducts R&D activity in social networking, virtual environments, data visualization, and behavioral economics and decision theory, to support its long term business strategies for serving investors (see <http://fcap.fidelity.com>).

planning, asset allocation, and fund selection. Thus, mutual fund families active in these channels need to meet the service demands of the financial advisors or brokers, who in turn provide the downstream services that will attract investor flow. These advisor related services involve significant costs for establishing and maintaining a dedicated sales force or developing a technological platform to aid independent advisors in managing their client business.⁷

The insurance and bank channels are intuitively distinct from both the direct and broker/wholesale channels. For some investors, their insurance agent or banker is the preferred financial advisor, which implies that these investors are unlikely to be easily reached via the other distribution channels. Finally, within the retail mutual fund market, the institutional distribution channel represents funds, or share classes of retail funds, that cater to pension funds, 401k and 403b plans, endowments, foundations, corporations, and high net worth individuals (James and Karceski (2006)). These funds often have investment minimums of \$500,000 or more. Industry press reports and academic studies suggest that decision-makers in this channel demand a different bundle of services than in other channels. For example, the institutional channel often has gatekeepers who choose the family and individual funds within the family for the company's 401k menu or platform. These fiduciaries tend to value investment discipline, or strict adherence to the fund's investment style, more than the typical retail investor. Consistent with this, James and Karceski find that tracking error negatively predicts flows among institutional mutual funds with large investment minimums, but not among other fund types.

Because a family's revenue is a percentage of assets under management, it follows that they should distribute their funds through as many channels as is feasible or cost-effective. If

⁷ For example, Janus launched a redesigned website "that reflects our commitment to partner with advisors and help them build their businesses" by "providing smart, relevant and productive information and tools designed to help them better serve their clients" (Janus press release 7/8/2009 referring to the launch of janus.com/advisor). Janus also developed *Janus Labs*, a web portal that "helps [advisors] hone their sales skills in the hope that they will pick Janus products." (*Institutional Investor* June 2007).

there are gains to specialization (or diseconomies of scope) in providing distribution services across channels we would expect to see a range across the spectrum of families, some distributing very broadly and perhaps others more concentrated. Thus, in the next sections we test the null hypothesis that a family's funds are broadly distributed across many distribution channels.

A. *Distribution channel data*

We obtain data on mutual fund distribution channels for 1996 to 2002 from Financial Research Corporation (FRC). FRC assigns each fund share class to one of five distribution codes: *direct*, *institutional*, *captive*, *bank*, and *wholesale*. Because FRC also includes distribution codes used by Lipper, we create two additional distribution codes: *insurance* and *other*. We classify share classes as being in the insurance channel when Lipper indicates that they are sold through an insurance company. The *other* category is reserved for share classes for which the FRC and Lipper classifications differ (e.g., FRC assigns the share class to direct but Lipper assigns it to institutional). We report results for *other* for completeness, but our results are qualitatively similar, and our inferences do not change, if we drop share classes in this category.

We aggregate the assets within each channel across all of a family's share classes and assign each family a distribution channel category according to the channel that contains the highest percentage of family assets. We also compute a Herfindahl index by summing the squared share of TNA distributed through each of the seven channels. Repeating this process using only the actively managed domestic equity (ADE) fund assets, we obtain the family's primary channel for ADE assets and the corresponding Herfindahl index. We have distribution channel data for 524 of the 547 families in the mutual fund industry in 2002, and for 452 of the

473 families that offer at least one actively managed domestic equity fund. In tests that require distribution channel at the fund level, we aggregate the assets within each channel across all of the fund's share classes and assign each fund a distribution channel category when at least 75% of its assets are sold through that channel.

We obtain TNA data from the CRSP mutual fund database, along with most other fund and family-level variables, such as the management firm codes to aggregate funds into families. To classify fund investment styles, however, we obtain data from Morningstar, which puts funds into one of nine investment style categories (e.g., large-cap value or small-cap growth). We prefer the Morningstar categories because they better match the categories that institutional investors use to choose and evaluate portfolio managers.

B. *Evidence on segmentation by distribution channel in the retail fund industry*

Table I contains summary statistics at the fund family level on our two measures of concentration within distribution channel. For each of the seven distribution channels, we report the number of families, the aggregate industry ADE assets distributed through that channel, and the top three families ranked by ADE assets. The direct channel has the largest number of families (169) and the largest ADE assets under management (\$632.9 billion), representing 48.1% of industry ADE assets. This channel also contains the families familiar to most investors, such as Fidelity, Vanguard, and Janus. The wholesale broker channel is another large channel, with 76 families and \$418.3 billion, representing 31.8% of industry ADE assets. Some of the largest families in the wholesale channel are also well-known in the industry: American Funds, Putnam, and AIM/Invesco. At the other extreme, the bank and insurance channels have only 23 and 16 families respectively, and a combined total of only \$34.3 billion in ADE assets.

Whether measured by the percentage distributed through the largest channel measure or the Herfindahl index, channel concentration is quite high. The average percentages of family ADE assets within one primary channel range from 86.2% to 96.5% across channels, while the Herfindahl index ranges from 0.800 to 0.947. The last two columns contain the analogous statistics using total family assets in all asset classes. The two sets of numbers are qualitatively similar, suggesting that our inferences based on actively managed domestic equity (ADE) assets will likely generalize to other asset classes. We focus exclusively on ADE assets in the remainder of the paper.

Comparing the last two rows of Table I, the very high average and median concentration of assets by distribution channel is not driven by high concentration among many small families in the industry. While the average ADE assets in a single distribution channel across all 452 families in the industry in 2002 is 92.6%, the average across the 25 largest families ranked by ADE assets is 85.8%. In untabulated analysis, we confirm that this pattern is not unique to 2002. We find that the average analogous to the total row in Table I ranges from 92.6% to 97.0% in the years 1996 to 2002.

We also find that a family's primary distribution channel is highly persistent over time. For example, 92.2% of families in 2002 are in the same primary distribution channel as they were in 2000, and 89.2% are in the same primary distribution channel as in 1996 (of families existing in both time periods). Although neither study examines family-level concentration by distribution channel, Christoffersen, Evans, and Musto (2009) report a high degree of persistence in distribution channel at the fund level, while Bergstresser, Chalmers, and Tufano (2009) report persistence at the share class level.

In Table II we examine the incidence of families operating in multiple channels simultaneously. For each of the seven primary distribution channels, in Panel A we report the number of families that simultaneously distribute through a particular secondary distribution channel. In Panel B, we report the average percentage of family ADE assets distributed through the secondary channel. Consistent with the findings in Table I, the last two columns indicate that 59.1% of families distribute 100% of their assets through their primary channel. Of the families operating in two channels, we find that it is most common for one of those channels to be institutional. In contrast, we find that it is rare for a family simultaneously to distribute their funds through direct and one of the advice channels (captive, bank, insurance, or wholesale). Moreover, we observe no cases of a family distributing through both the captive broker and wholesale broker channels. In untabulated robustness tests, we repeat the analysis in Tables I and II for 2002 using distribution channel codes from the Investment Company Institute and find very similar patterns, including an average percentage of 94.5% of family ADE assets distributed through its primary channel.⁸

In sum, the norm in the industry over this period is for a fund family to distribute their funds through a single distribution channel. Families rarely switch their primary distribution channel, and show no tendency toward materially increasing their assets under management by entering new channels.

III. What drives product market segmentation?

To reconcile a family's incentive to increase assets under management with a tendency to sell its funds through a single or narrow set of channels, we argue that it is costly to operate in

⁸ We thank Brian Reid for providing the 2002 ICI distribution codes for comparison purposes. Because we have more comprehensive data for more years from FRC, we only use the ICI data as a robustness check.

multiple channels, especially when those channels provide investors with differing bundles of services. To support the underlying hypothesis that different channels serve different investor clienteles, we first document across-channel differences in the sensitivity of flows to returns.

A. Evidence on differences in the determinants of net flows across distribution channels

If investor preferences over the services that come bundled in a fund purchase differ across distribution channels, the weight that investors place on fund returns also likely differs. For example, investors in the direct channel might focus solely on after-expense returns, while investors in the bank channel might focus more on asset allocation or the convenience of one-stop banking and investment services and less on the performance of individual funds.⁹ In short, if different channels serve investor clienteles that put different weights on fund returns, we should expect to find systematic differences across channels in the sensitivity of fund flows to returns.

In Table III, we report the flow-performance relation in each of the seven distribution channels, using variables standard in this literature including those intended to capture potential convexities in the relation.¹⁰ The sample is limited to actively-managed domestic equity funds between January 1996 and December 2002, the period for which we possess distribution channel data. The dependent variable is the monthly net flow of fund i in month t . We use flows at a monthly frequency to highlight differences across clienteles in the response to short-term

⁹ According to a 2006 Investment Company Institute survey of mutual fund investors, respondents who purchase their fund through a financial advisor most commonly do so because they want help with asset allocation and because they “want a financial professional to explain various investment options.” Among respondents who report never using a financial advisor, the top reasons are because “they want to be in control of own investments” and because they “have access to all the resources needed to invest on own.” (*ICI Research Fundamentals* April 2007)

¹⁰ We do not review the large literature on the fund flow-performance relation. However, papers that have specifically focused on the flow-performance relation within or across particular clienteles include Bergstresser, Chalmers, and Tufano (2009) (direct vs. brokered), Christoffersen, Evans, and Musto (2009) (captive broker vs. wholesale broker), James and Karceski (2006) (institutional and bank), Chen, Yao, and Yu (2007) (insurance), and Del Guercio and Tkac (2002) (separate account).

performance changes. The independent variables of interest are fund i 's monthly net flow in month $t-1$ (which captures the effect of longer-term performance), fund i 's monthly net return in month $t-1$, and dummy variables that indicate whether fund i 's net return in month $t-1$ was in either the top 20% or the bottom 20% of funds with the same investment style. Other fund-level control variables include a dummy variable indicating whether fund i charges a sales load, fund i 's lagged expense ratio and 12b-1 fee, the natural logarithm of the fund's TNA, the natural logarithm of the family's TNA, and the fund's age. In addition, we include monthly fixed effects to control for shocks to aggregate demand within each Morningstar investment style.

To allow for differences across distribution channels, each of the independent variables and fixed effects is interacted with channel dummy variables. In other words, although we estimate a single pooled regression, the coefficients in Table III are identical to those obtained by estimating a separate regression for each distribution channel. To allow for the possibility that flows are correlated within each family, we cluster standard errors on fund family. For brevity, we do not report the coefficients on the control variables in the table.

Looking across the seven columns, we find that flow-performance relations differ across distribution channels. With respect to the estimated coefficients on lagged monthly net flows, we find that monthly net flows are positively auto-correlated in each of the channels except *bank*, and can reject the hypothesis that these coefficients are equal across channels at the 1% level. More importantly, for both *direct* and *wholesale*, the flow-performance relation is highly nonlinear, with significant inflows into the top 20% of funds and outflows from the bottom 20%, but little sensitivity to intermediate levels of returns. Consistent with our prior belief, investors in the direct channel are the most sensitive to returns; net flows into the top performing funds and out of the bottom performing funds are both approximately three times larger in the direct

than in the wholesale channel. We can reject the hypotheses that the coefficients on the top performing and bottom performing dummy variables are equal in the direct and wholesale channels with p-values of 0.020 and 0.083, respectively. We also estimate a specification comparing the direct channel to all others; we can reject the hypotheses that the coefficients on the top performing and bottom performing dummy variables are equal in the direct versus all other channels with p-values of 0.003 and 0.001, respectively.

In contrast, for the bank, captive, and other channels, the relation between monthly flows and lagged monthly returns is approximately linear. The same appears to be true for the insurance channel, although the p-value associated with lagged monthly returns is only 0.132. For the institutional channel, flows also increase linearly in returns, but with the perverse exception that funds earning the lowest returns receive additional flows. We have no explanation for this result.

Although Table III only reports the estimated coefficients from one specification, we note that the flow-performance relations described above are qualitatively unchanged when we constrain the coefficients on the fund-level controls to be equal across channels, exclude the fund-level controls entirely, omit lagged flows, define lagged net return percentiles based on month-style-channel (instead of month-style), or interact lagged net returns with a dummy variable indicating when they are positive.

Overall we conclude that there are meaningful differences in the flow-performance relation across channels. In particular, investors in the direct channel appear to be the most vigilant in rewarding recent good performers with additional flow and punishing recent poor performers with outflows. The wholesale channel has a similar pattern, but is much smaller in magnitude. These results suggest that from the perspective of fund families, the importance of fund

performance in asset gathering and retention varies substantially depending on their primary distribution channel. Families in the direct channel have the most to gain by attracting and retaining skilled portfolio managers, whereas it may be more important for families in other channels to invest in their broker and advisor networks.¹¹

B. Anecdotal evidence on the cost of entering new distribution channels and inherent incompatibilities across channels

We have argued that simultaneously providing different bundles of services to investors is costly for a family, both because it requires a different set of inputs and infrastructure to produce, and because it may be strategically impossible to implement. In this section, we provide anecdotal evidence consistent with these costs.

In 2002, Janus was among the largest families distributing funds through the direct channel. However, when Janus appointed a new CEO, Gary Black, in January 2006, it began in earnest its conversion from direct to wholesale distribution. According to a cover story in the June 2007 issue of *Institutional Investor*, “Black’s diagnosis [of Janus’ flagging sales] was simple: Janus was still too beholden to do-it-yourself individual investors despite a *four-year effort* to build a third party sales channel. (emphasis added)” In addition to “spending millions to build from scratch a new distribution platform that targets brokers, financial advisers and other third-party sales channels,” Black recruited Janus’ new retail sales chief from Van Kampen funds, who in turn “recruited a battalion of 45 well-paid wholesalers,” “replicated the same aggressive sales culture [as Van Kampen], and created web-based portals to serve brokers buying funds.” Moreover, Janus changed its advertising strategy. It “plans to spend more than \$10

¹¹ For example, Fred Alger funds CEO, Daniel Chung, complained that Alger’s 45 years experience in growth investing and strong portfolio management reputation often does not translate into sales. He stated that he hears from many financial advisors that “recognize Alger as a strong shop, but do not invest with Alger because wholesalers are not visiting.” (*Fund Action*, July 21, 2008).

million on ads this year in financial trade publications...In addition, ads in newsstand magazines and newspapers will tout Janus funds—but urge investors to call their advisors.” Janus’ experience suggests that success in a new distribution channel requires significant technology, personnel, and infrastructure investments. In the words of Gary Black, “it takes time to build a business.”

While high start-up costs may discourage families from entering new distribution channels, it seems implausible that this is the sole driver of the channel concentration we observe. In particular, when families do operate in multiple channels, some pairs of distribution channels are notably rare or non-existent, suggesting that these channels are inherently incompatible. For example, we rarely observe a family distributing through the direct and advice channels simultaneously. This makes intuitive sense because otherwise what would prevent an investor from consuming costly services from a financial advisor, such as devising an asset allocation plan and list of recommended funds, and then implementing the transactions over the internet? Interestingly, Janus closed their direct platform to new investors in July 2009 despite having operated in the direct channel for decades.¹²

Similarly, we do not observe a single family that simultaneously distributes its funds through both captive and wholesale brokers. Captive brokers sell only the family’s funds, whereas wholesale brokers operate under a more open architecture system, selling products from a variety of families to their clients. We conjecture that captive brokers rely on having an exclusive product to sell, and would find it difficult to compete if their product were also available via another channel.¹³

¹² See Janus’ 3/16/09 press release on janus.com.

¹³ One firm that offers both is Waddell and Reed, a long-time captive channel firm. In 2002, they acquired another fund family that distributed in the wholesale channel, Ivy Funds. The same firm owns both groups of funds, but distributes Ivy funds through wholesale and exclusively distributes Waddell and Reed funds through the captive

IV. The market for subadvisors: expanding retail fund distribution indirectly

In this section, we provide background on the subadvisory market, through which asset management firms can provide portfolio management services to retail fund families. Because subadvisory contracts are voluntary, both sides should expect to benefit. From the fund family's perspective, if the subadvisor can manage the portfolio more cheaply than the family can manage the same portfolio internally, it is better for the family to buy than to make. From the subadvisor's perspective, subadvising is an opportunity to gain access to new retail distribution channels that would be very costly to develop independently, or, to overcome incompatibilities inherent in simultaneously distributing through multiple channels. In short, subadvising allows a firm to overcome barriers to expanding distribution by entering new channels *indirectly* via subadvising.¹⁴

An intuitively appealing example of the cost-effectiveness of entering a distribution channel indirectly, rather than directly, is the case of separate account management firms that cater to the needs of purely institutional clients, such as pension funds and endowments. The trend over the last two decades whereby corporations switched from defined-benefit to defined-contribution plans resulted in the migration of retirement assets away from separate accounts and toward mutual funds. Participating in the subadvisory market allows these firms to regain lost market share without the high fixed-costs of developing the regulatory infrastructure and services necessary for success in the retail channels.¹⁵ For example, some of the services that are

channel (Waddell and Reed 2008 10-k). Thus, the captive brokers are not directly competing with the wholesale brokers. Notably, the firm decided to keep both the Ivy and Waddell and Reed monikers, effectively marketing them as separate families (and they appear as separate families on the CRSP mutual fund database).

¹⁴ Conceivably a family could increase their distribution by joining a fund supermarket. However, according to statistics from the Investment Company Institute, only 6% of industry assets are purchased through a discount broker or fund supermarket (*Research Fundamentals* September 2008).

¹⁵ *Institutional Investor's* September 2008 issue reported on the difficulties a purely institutional firm, Old Mutual, faced in entering the retail fund market. They invested \$35 million in a retail distribution arm in 2006 but are now

standard in retail, such as providing daily NAV pricing and individual recordkeeping to a large number of small investors, are outside the realm of the services that separate account managers typically offer to their institutional clients.

Further, potential inherent incompatibilities arise in serving the institutional and retail channels simultaneously as well. For example, both T. Rowe Price and Fidelity have reportedly faced difficulties in overcoming the stigma of being “a mutual fund company first and a company that works for institutions second.”¹⁶ “If you’re handling the \$1000 accounts of the masses, the unspoken assumption goes, how can you possibly meet the demands of a sophisticated institution? That assumption is shared, too, by many investment consultants, pensiondom’s gatekeepers”¹⁷ In fact, to address the perception that Fidelity is ill-equipped to cater to the needs of sophisticated fiduciary clients, they created a new subsidiary exclusively dedicated to managing institutional money, with a separate location, Rhode Island, and separate name, Pyramis. Thus, whether the incompatibilities are real or perceived, Fidelity went to great expense to structure their operations to overcome them. We argue that an additional way to overcome them is for separate account firms to distribute to retail investors indirectly through subadvising.

A. *Data on subadvisory contracts*

Our data on subadvisory relationships in 2002 are hand-collected from filings available on the SEC’s EDGAR database. Specifically, we conduct text searches of all N-30D filings for variants of the word ‘subadvisor’ or subadvisory’ to identify the relevant filings. Within these, we identify the names of all funds in that filing that outsource the portfolio management to an

being forced to scale back their retail expansion plan and “put our emphasis back into the institutional world again.” (“OMAM Rethinks”)

¹⁶ Quoted from *Institutional Investor*’s July 2008 issue (“Fidelity Gets Serious”).

¹⁷ Quoted from *Institutional Investor*’s May 2005 issue (“The Price of Success”).

outside subadvisory firm. In some cases, the filing will identify that a subadvisor manages the portfolio, but also discloses that the subadvisor is an affiliate of the family, typically indicating that the subadvisory firm is legally a subsidiary, or has a common owner. Because the affiliated subadvisory agreements do not reflect the same economic decision or market forces described above, we focus our analysis on the sample of unaffiliated subadvisors. For the sub-sample of actively managed domestic equity funds managed by an unaffiliated subadvisor, we collect the subadvisory and advisory firm names and addresses from the Statement of Additional Information (485BPOS filings).

The list of subadvised funds is then linked with the CRSP Survivorship-bias free mutual fund database. Any fund that we do not identify as being subadvised is assumed to be managed in-house by employees of the family, such that we assign all funds in the CRSP mutual fund universe to one of three categories according to who manages the fund: subadvised, subadvised by an affiliate of the fund family, and in-house. Of all actively managed domestic equity funds in CRSP in 2002, 17.8% are subadvised, 8.6% are subadvised by an affiliate, and 73.6% are managed in-house.

Finally, we use the Mobius *M-Search* database to obtain assets under management and investment product information on separate account managers, and use their management codes to aggregate products to the firm level.

B. Participants in the subadvisory market

Table IV contains summary statistics describing the participants in the subadvisory market including family size and measures of the extent of their participation. We also list the top five firms in each category ranked by their assets under management in actively managed domestic equity portfolios. The first row of Table IV contains the fund families that outsource

portfolio management to outside firms. These families are the buyers of subadvisory services, and include some familiar names, such as Vanguard and American Express. Buyer families are relatively large with \$9.4 billion under management on average, although the median buyer has only \$1.6 billion under management. The average percentage of ADE funds outsourced by these families is substantial, with a mean of 62.5% and a median of 60%.

The next row of Table IV contains the fund families that outsource distribution to outside firms. These families are the sellers of subadvisory services, and include families like Fidelity, Janus, and T. Rowe Price. These firms are somewhat larger than the buyers of subadvisory services in terms of family assets under management, with a mean of \$16.8 billion and a median of \$2.6 billion. These families manage an average of 3.5 funds (median 2 funds) for other families. Although it is relatively rare, we do find that 13 families both buy and sell subadvisory services, and these families are included in both rows one and two. Their presence is seen in the non-zero entries in the last two columns of Table IV; buyers on average manage 0.4 funds on behalf of other families, and sellers on average outsource the portfolio management of 3% of their ADE funds.

The final row of Table IV contains statistics for the 130 separate account subadvisors who do not have any retail funds of their own. These firms, such as Capital Guardian Trust or Faye Sarofim, often have established reputations in the institutional market, but are unfamiliar to retail investors.¹⁸ The summary statistics on firm size in terms of assets under management and number of products offered shows that, among subadvisors, the retail families in row 2 and

¹⁸ In some cases, these firms are owned by a parent with a retail distribution network. For example, Capital Guardian Trust has common ownership with Capital Group, which also distributes the American Funds to retail investors. We use the entity specifically named in the subadvisory contract. If the firm markets their institutional arm as completely separate from their retail arm, we do not include those firms among the fund families with retail distribution.

the separate account firms in row 3 are comparable in terms of both size and the number of funds for which they subadvise.

C. Family-Subadvisor pairings: Do subadvisors pick stocks for 'the competition'?

For separate account managers, entering the retail mutual fund marketplace via subadvising is an intuitively appealing strategy. Because separate account managers target institutional clients, there is little potential that subadvising will cannibalize demand for their other portfolio management services. However, only 50.3% of the subadvisor relationships that we observe involve separate account managers. The other relationships involve mutual fund families buying portfolio management services from other mutual fund families, a fact that raises a puzzle. Why would a mutual fund family with existing retail distribution choose to pick stocks for their competitors?

Our earlier evidence on market segmentation suggests a simple solution to this puzzle because it implies that families in different distribution channels do not directly compete for the same investors. Thus, little cannibalization should occur when a family in one distribution channel provides portfolio management services to a family in a *different* distribution channel. Overall, we predict that we should rarely observe subadvisors that distribute their own assets through the same distribution channels as the funds for which they subadvise. We test this prediction below.

Within the universe of ADE mutual funds in 2002, we observe 597 fund-subadvisor pairs. Because 84 funds hire multiple subadvisors to manage their assets, there are more fund-subadvisor pairs (597) than subadvised funds (369). Panel A of Table V contains a cross-tabulation of the 549 fund-subadvisor pairings for which we possess data on distribution; panel B contains the same cross-tabulation for the 252 funds that hire a single subadvisor. The

distribution channel of the family is defined at the fund level to be the channel of the subadvised mutual fund, while the distribution channel of the subadvisor is defined at the firm level using their ADE assets.

Under the assumption that firms in the same distribution channel are the closest competitors, we expect to find no pairings in the same distribution channel (i.e., no observations along the diagonal). Panel A of Table V shows this to generally be the case. Only 47 (8.6%) of the 549 relationships involve funds and subadvisors in the same distribution channel. The clear outlier is the institutional channel, where only 57.1% of the 49 subadvisors who distribute funds in the institutional channel pair with families outside of this channel. This result may constitute evidence against our hypothesis of market segmentation, but it may also point to further segmentation within the institutional channel. For example, families may be able to directly serve the 401k plans of some corporations while indirectly serving the 401k plans of other corporations via subadvising. Alternatively, families in the institutional channel are disproportionately likely to hire multiple subadvisors for a single fund, thereby differentiating the subadvised fund (with multiple subadvisors) from the individual subadvisor's own offerings. In Panel B of Table V, when we restrict the sample to funds with a single subadvisor, we find that all but one of the 13 subadvisors that distribute funds in the institutional channel pair with families outside of the institutional channel. This suggests that a multiple-subadvisor mutual fund, where the subadvisor is only one among several portfolio managers, is a sufficiently different product from the subadvisor's own fund to not be directly competing.

To formally test whether we observe fewer pairs along the diagonal in Table V than we would expect by chance, we begin by testing the null hypothesis that each subadvised fund is equally likely to pair with a subadvisor from the eight possible channels. This test implicitly

assumes that the supply of subadvisors is competitive, such that firms from each channel are equally available to subadvise. For example, if each of the 82 subadvised funds in the direct channel has an equal chance to pair with one of the eight subadvisor channels, then we should observe 10.25 funds (82 divided by 8) in each cell across the first row of Table V Panel A.

Applying this same rule to each row of the table, we compute the sum of the expected number of pairs on the diagonal cells, and the sum of the expected number of pairs on off-diagonal cells.

In Panel A, the actual number of diagonal elements is 47 and the expected number of diagonal elements under the null is 68.6; in Panel B, the actual number is 18 and the expected number is 31.5. In both cases, we can reject the null hypothesis at the 1% level (based on a Chi-square test with one degree of freedom), suggesting that funds prefer to pair with subadvisors outside their own channel. We do note, however, that our ability to reject the null hypothesis is driven by the fact that one-half of subadvisors come from the separate account channel, versus the one in eight expected under the null.

More generally, when we incorporate data on the observed relative supply of subadvisors coming from each channel, we cannot reject the null that subadvisors are less likely to subadvise for funds in their own channel than for funds in other channels.¹⁹ The important exception is that subadvisors from the direct channel are significantly less likely to pair with funds in the direct channel. Here, the actual number of pairs (7) is significantly different, at the 1% level, from the expected number of pairs (17). An interesting related result in Panel B is that subadvised funds in the direct channel are disproportionately more likely to hire separate account managers. In particular, 82.2% of the 54 single-subadvisor funds in the direct channel hire a separate account

¹⁹ To determine the relative supply of subadvisors from each channel, we compare the observed number of subadvisors that come from each channel, excluding those on the diagonal. However, inferences are similar when we include the number of subadvisors within the diagonal elements or focus on the number of firms that operate in each channel (regardless of whether they serve as a subadvisor).

manager, versus 41.4% of the other 198 single-subadvisor funds (a difference that is significant at the 1% level).

To the extent that direct channel investors are the most return- and price-sensitive, they may also be the most willing to track down the information that a similar fund is available elsewhere. Thus, it makes sense that families in the direct channel would most strongly avoid subadvisors in their same channel in favor of separate account managers, whose funds are not available to retail investors. In contrast, subadvised funds in the captive and insurance channels are significantly less likely to hire separate account managers. This is also sensible in that a subadvisor's retail reputation and name recognition is more likely to resonate with the clientele in these channels, who are also unlikely to seek out the subadvisor's own brand of funds on their own.

Overall, we believe that the patterns in Table V are consistent with our claim that subadvising allows a family to expand assets under management by reaching new investors, while eliminating the costs of producing disparate bundles of services and avoiding the inherent incompatibilities associated with simultaneously trying to serve investors in the direct, captive, and wholesale channels. Our claim that subadvising solves incompatibility problems implicitly assumes that investors perceive similar funds marketed under the same family name to be the same product, but perceive funds marketed under different family names to be different products. For example, since Oppenheimer Capital offers the Oppenheimer Quest Value Fund in the wholesale channel we argue that it would be incompatible for them to also offer a lower cost Oppenheimer Value Fund in the direct channel. Instead, Oppenheimer subadvises the Preferred Value Fund for the Preferred family, which is sold in the direct channel. Although both funds invest in large-cap value stocks and have a monthly return correlation of 0.96, we assume—and

our evidence is consistent with the hypothesis—that investors are unlikely to perceive them to be the same product. Similarly, the correlation in the monthly returns of the IDEX T. Rowe Price Small Cap Fund and the T. Rowe Price Diversified Small Cap Growth Fund is in excess of 0.999. Yet, the fact that IDEX puts T. Rowe Price in the name of a fund distributed through the insurance channel implies that IDEX’s target investors are unlikely to seek out the lower cost version available directly from T. Rowe Price.

Finally, we examine the economic significance of a subadvisor’s increase in assets under management and expansion into new distribution channels. By definition, all of the assets subadvised by separate account managers reflect increases in their retail distribution. When we focus on the 86 subadvisory firms that already have their own retail distribution, we find that the average Herfindahl distribution channel index falls from 0.817 to 0.691 (the median falls from 0.858 to 0.724) when we account for the distribution channels that these families reach indirectly via subadvising.²⁰ Similarly, the average number of distribution channels they sell through increases from 2.29 to 3.73 (the median increases from 2 to 4). In each case, the difference in means or medians is statistically significant at the 1% level. In terms of assets under management, the assets managed in new channels via subadvising account for 18.3% of the total assets managed by the average firm; for the median firm, the fraction is 5.8%, which is smaller, but still economically significant.

To summarize, the large sample evidence from the subadvisory market both corroborates our earlier findings of product market segmentation and confirms that our distribution channel data captures meaningful distinctions in these segments. Thus, it is not puzzling to observe subadvisors that seemingly ‘pick stocks for the competition’ because they are only willing to

²⁰ To compute a Herfindahl that accounts for subadvising, we add the TNA in the distribution channels for which they subadvise to the TNA in their own retail channel.

subadvise for funds outside their primary distribution channel, which is not truly ‘the competition’. Through subadvising, families can outsource distribution services to other firms, eliminating the need to invest in the provision of entirely new services, such as advice or direct-to-investor advertising. In the next section, we measure the value of these distribution services by examining subadvisory and management fees.

V. The value of portfolio management versus fund distribution: Evidence from subadvisory fees

To shed light on the relative value of fund distribution and portfolio management services, we study the fees that families pay to their subadvisors. If skilled portfolio management is the scarce resource in the mutual fund industry, we expect subadvisors to receive the surplus generated through their relationships with fund families. However, if skill in distribution and portfolio management are both scarce resources, we expect the level of subadvisory fees within each relationship to reflect the relative importance of these services.

The SEC requires mutual funds to disclose pertinent details of the contract between the family and the subadvisor, including portfolio management fees. We hand-collect subadvisory fees from the Statement of Additional Information within the 485BPOS filing. This fee is defined as the dollar management fee paid to the subadvisor in fiscal year 2002 divided by fund average TNA in 2002. We obtain the management fee, defined as the dollar management fee paid by fund investors in fiscal-year 2002 divided by fund average TNA in 2002, from CRSP. This data originally comes from the Statement of Operations in the 485BPOS SEC filings, and both subadvisory and management fees are based on the fee schedule and therefore gross of any potential fee waivers. Fund investors pay no explicit fees to the subadvisor for their portfolio

management services. Rather, the fund family pays the subadvisory firm out of its management fee and therefore reduces dollar for dollar any fee revenue retained by the family.

In Table VI, we summarize the subadvisory fees paid from fund families to subadvisors, as well as the management fees paid from fund investors to fund families. The sample consists of the 249 relationships between a family and single subadvisor for which we observe the subadvisory fee schedule, as well as the size, investment style, management fee, and distribution channel of the subadvised fund.²¹ Across the full sample, the median management fee is 80 basis points and the median subadvisory fee is 40 basis points. In addition, although the management fee is widely viewed as reflecting the price of portfolio management, only half of the management fee collected by the median fund in our sample is used to pay the subadvisor for portfolio management.

Looking across the nine investment styles, we see that subadvisor fees tend to be higher for small cap funds than for large cap funds. Also, within the mid-cap and small-cap styles, subadvisor fees tend to be higher for value funds than for growth funds. Both of these patterns are plausibly related to differences in the cost associated with different investment strategies. Deli (2002) finds similar patterns when he compares the management fees of funds in different asset classes. Importantly, we observe significant variation in the subadvisory fees paid within each investment style.

To explain within style variation in subadvisory fees, we use the hedonic pricing model introduced in Harding, Rosenthal and Sirmans (2003).²² In a traditional hedonic pricing model, there is no role for bargaining power because the markets for underlying goods and services are

²¹ In 152 of the 249 relationships, the subadvisory fee declines with assets under management, and we calculate the level of the fee using the size of the subadvised fund at the end of 2002. In the other 97 relationships, the subadvisory fee schedule is flat.

²² Harding, Rosenthal and Sirmans (2003) introduce bargaining power into a hedonic pricing framework in an analysis of housing prices in the residential real estate market.

assumed to be perfectly competitive. However, Harding et al. argue that as goods become more heterogeneous and markets for these goods become thinner, we should expect prices to reflect the relative bargaining powers of buyers and sellers. Because subadvisory contracts are heterogeneous and trade in thin markets, we model the subadvisory fees paid for portfolio management services as:

$$\mathbf{SF}_{ijk} = \mathbf{s} \mathbf{C}_{ijk} + \mathbf{b} \mathbf{D}_{ijk} + \mathbf{e}_{ijk}$$

where \mathbf{SF}_{ijk} is the subadvisory fee paid from advisor i to subadvisor j for fund k , \mathbf{C}_{ijk} is a vector of contract characteristics, \mathbf{D}_{ijk} is a vector of advisor characteristics, subadvisor characteristics, and interaction terms, and \mathbf{e}_{ijk} is a standard error term. As in traditional hedonic pricing models, the estimated coefficients on contract characteristics are estimates of the implicit market prices for the underlying services. In our setting, these correspond to the implicit market prices for managing different types of portfolios, independent of the identities of the firms involved. In contrast, the estimated coefficients on advisor and subadvisor characteristics capture deviations from the subadvisory fees that we would expect based on contract characteristics alone, allowing us to test hypotheses related to the relative values of distribution and portfolio management.

Table VII presents regressions of subadvisor fees on contract and firm characteristics. In each regression, we control for three characteristics of the fund for which portfolio management is being contracted. First, because fees (measured as a percentage of total net assets) tend to decline with the assets under management, we include the natural logarithm of the total net assets of the subadvised fund.²³ Second, to control for the different costs associated with different investment styles, we include a separate fixed effect for each investment style (except large-cap blend, the omitted category). Third, to control for any differences in the average costs and

²³ Because we restrict attention to funds with a single subadvisor, the size of the fund and the size of the portfolio managed by the subadvisor are identical. When funds hire multiple subadvisors, the level of assets that are allocated to each subadvisor is seldom disclosed.

benefits associated with subadvising the average fund within a distribution channel, we include a separate fixed effect for each channel (except the omitted category *other*).

Each of the remaining variables is a proxy for the bargaining power that the fund family or subadvisor brings to the relationship. Because subadvisors may charge lower fees in the hopes of managing additional assets, the bargaining power of the fund family should increase in the total number of dollars that it manages. In addition, because the decline of defined benefit retirement plans reduced the demand for separate account managers, fund family bargaining power may be higher when contracting with separate account managers. Therefore, to identify relationships in which fund families have more bargaining power, we include the natural logarithm of the total net assets managed by the family, and a dummy variable that indicates when the family contracts with a separate account manager.

On the other hand, subadvisors that are more skilled portfolio managers—or that enjoy a better reputation with mutual fund investors—should enjoy greater bargaining power with families. Starks and Yates (2008) find evidence consistent with fund family reputation influencing investors' decisions about which funds to invest in. Specifically, studying a discount brokerage supermarket where investors can easily choose funds from any family, they find that investors display a strong tendency to cluster their choices within a single family. Thus, families with name recognition and a strong reputation with retail investors have valuable distribution channels.

Because skill is notoriously difficult to measure, and because we lack return histories for separate account managers, we include two binary proxies for skill or reputation. The first is a dummy variable that indicates whether the subadvisor's name appears in the fund name. For example, two funds in the IDEX and ASAF families include the IDEX Janus Growth Fund and

ASAF Goldman Sachs Mid-cap Growth Fund. The IDEX Janus Growth & Income Fund clearly identifies Janus as the subadvisor. The fact that IDEX includes Janus in the fund name is an indication either that IDEX believes Janus to be skilled at portfolio management or that IDEX expects the reputation that Janus established in the direct channel will appeal to investors in the insurance channel.

Our second proxy for perceived quality or skill is a dummy variable that indicates whether the subadvisor specializes in the same Morningstar investment style as the subadvised fund. Siggelkow (2003) compares the fund performance of families that specialize in few Morningstar investment styles versus those with broader offerings across many styles, and finds that the funds from more specialized families perform better on average. He argues that different styles of investment (e.g., growth vs. value) draw on different research and execution techniques and investment practices, resulting in distinct cultures that do not adapt well to alternative approaches, ultimately resulting in the deterioration in fund performance as the family offers more styles of funds.²⁴ Based on this logic and Siggelkow's findings, families may perceive that subadvisors that specialize in managing assets in a particular style are likely to deliver higher future returns in a fund of that style.

For each subadvisor, we define their investment specialty as the Morningstar category in which they internally manage the most assets (within its separate accounts or mutual fund family), using the same nine-style categories as before. We are able to identify a subadvisor specialty in 226 of the 249 relationships for which we possess fee data (we lack asset data for 23 separate account firms). In 90 (39.8%) of these relationships, the subadvisor's specialty matches

²⁴ For example, he relates a story of a Director of Investments at a mutual fund firm who had managed large cap funds her entire career, but was newly assigned to oversee the management of the firm's small cap fund. Unfamiliar with the research requirements for successful small cap investing (including road trips to visit specific firms), she cut their travel budget and subsequently watched the funds' performance decline.

the investment style of the subadvised fund. In fact, in this subset of 90 funds, the average subadvisor has 74% of their ADE assets in the specialty style. Regarding our other skill proxy, fund names include subadvisor names in 59 (26.1%) of the 226 relationships for which we can calculate both measures of skill. Interestingly, the correlation between our two proxies for skill is only 0.026, which is statistically indistinguishable from zero.

Given our evidence that investors in the direct channel are the most sensitive to returns, skilled subadvisors should enjoy differentially more bargaining power when negotiating with advisors in the direct channel. To test this prediction, we interact each proxy for skill with a dummy variable indicating whether the advisor is in the direct channel. Because investors in the wholesale channel exhibit some sensitivity to returns, we also interact each proxy for skill with a dummy variable indicating whether the advisor is in the wholesale channel.

Finally, we include the management fee of the subadvised fund, which is a proxy for the market power that the fund commands in the retail marketplace. After controlling for the other determinants of subadvisory fees, the coefficient on the management fee variable reveals how an additional basis point of management fee is split between the family providing distribution and the subadvisor providing portfolio management. An estimated coefficient of more than 0.5 suggests that the subadvisor has relatively more bargaining power, which is what we would expect if portfolio management is the service most valued by fund investors. On the other hand, an estimated coefficient of less than 0.5 suggests that the family has relatively more bargaining power, which is what we would expect if distribution is more highly valued than portfolio management. We test the estimated coefficient against a null of 0.5, which corresponds to the case in which the relative bargaining powers of the family and subadvisor are equal, allowing them to split incremental revenues equally.

We estimate four regressions. The first specification includes only management fee and the three contract characteristics. The remaining specifications include other proxies for bargaining power, including one or both of the proxies for skill. Because many of the explanatory variables vary at the level of the advisor or subadvisor (rather than the level of the relationship), standard errors are clustered on both advisor and subadvisor.²⁵

We have two main findings. First, the estimated coefficient on the management fee ranges from 0.377 to 0.393. The fact that these coefficients are much less than 0.5 argues against the idea that portfolio management is the sole scarce resource. Moreover, when we include both proxies for skill in the fee regression, we can reject the hypothesis that the estimated coefficient on management fee equals 0.5 (p-value of 0.051). In other words, not only is portfolio management not the sole scarce resource, we find some evidence that it is valued less than distribution. Second, families in the *direct* channel pay a significant premium for skill (or reputation) relative to families in most other channels. When the subadvisor name appears in the fund name, the premium ranges from 11.2 to 13.6 basis points. When the advisor hires a specialist, the premium ranges from 9.5 to 10.7 basis points. These findings reinforce the idea that returns matter most to investors in the direct channel. The evidence that advisors in the wholesale channel pay a premium for skill, however, is mixed.

With respect to the other proxies for bargaining power, there is little evidence that subadvisor fees are lower when families have more dollars under management, or when they hire separate accounts as subadvisors. However, we do find that larger subadvised funds pay slightly lower subadvisory fees. With respect to the investment style fixed effects, the patterns are similar to those in Table VI. Namely, families pay the most for small-cap value, small-cap

²⁵ We thank Mitchell Petersen for providing code that clusters standard errors along two dimensions on his webpage, http://www.kellogg.northwestern.edu/faculty/petersen/htm/papers/se/se_programming.htm.

growth, and mid-cap value. Finally, while few of the distribution channel fixed effects are statistically significant from zero, we find evidence that subadvisors receive between 5 and 9 basis points less in the wholesale channel, but between 6 and 7 basis points more in the captive channel.

VI. Summary and Implications for Future Research

Although the mutual fund literature often implicitly assumes that every fund competes with every other fund, we find that the typical family distributes its funds through a single channel. This pattern suggests that families primarily compete with the other families in their distribution channel. In addition, we find that when families distribute their funds through more than one channel, it is rare for them to participate both in direct and any of the broker-sold channels (wholesale, captive, bank, insurance), or in wholesale and any of the captive broker-sold channels (captive, bank, insurance). To rationalize these patterns, we argue that funds are bundles of services—including portfolio management, record-keeping, information, advice, and access to complementary financial products—and that it is costly for a single family to offer the different bundles required by investors who self-select into different channels. We also argue—and provide anecdotal evidence based on Janus’ conversion from direct to wholesale—that some pairs of channels may be inherently incompatible in the sense that brokers are unwilling or unable to sell funds that investors will perceive to be available more cheaply in other channels.

To provide support for the hypothesis that investors in different channels value services differently, we document that the flow-performance relation varies significantly across channels. In particular, we find that investors in the direct channel, who tend to be do-it-yourself investors, are the most likely to reward funds when lagged returns are high and punish them when lagged

returns are low. We find similar, but attenuated, behavior in the wholesale channel, but distinctly less responsive flows in the other intermediated channels. We use these estimated differences to generate predictions about which distribution channels contain the families that should be most willing to pay for skilled portfolio managers.

To shed additional light on the underlying causes of market segmentation, we study subadvisory contracts. We find that approximately half of all subadvisors manage their own brand of mutual funds, but that the vast majority of these families do not distribute their funds through the same channel as the subadvised fund. In addition, we find that the assets managed in new distribution channels via subadvising are economically meaningful. In other words, whereas the (small) existing literature on subadvising focuses on how families benefit from outsourcing portfolio management, we focus on how subadvisors with their own retail funds benefit from outsourcing distribution.

Finally, when we study the determinants of subadvisory fees, we find that subadvisors earn less than half of each incremental basis point in management fees, implying that the lion's share of incremental fees goes to the distributor (fund family). This finding constitutes novel evidence that portfolio management is not the sole scarce resource in the mutual fund industry. We also find that our proxies for skilled portfolio managers are associated with higher subadvisory fees, but primarily in the direct channel, where investors plausibly place the greatest weight on fund returns. This last finding suggests that while families in broker-sold channels need to make costly investments in their broker networks, families in the direct channel need to make costly investments in skilled managers to retain and grow assets.

Our findings have several implications for the study of mutual funds. First, to the extent that funds primarily compete with the other funds in the same distribution channel, conditioning

on the distribution channels of entrants and incumbents should sharpen tests of the impact of competition on flows, performance, and fees (such as Wahal and Wang (2008)). Second, to the extent that investors in the direct channel place the greatest weight on performance, funds in the direct channel will invest the most in skill. Consequently, more powerful tests for skilled fund managers should focus primarily on funds in the direct channel.

Third, our findings on market segmentation provide a new lens through which to view various anomalous empirical regularities, such as the ‘puzzle of active management’ (Gruber (1996)). Namely, that an investor’s decision problem is not independent of the channel in which they participate. Within the direct and institutional channels, where investors are likely the most sensitive to returns and most knowledgeable about fees, the index funds offered by families like Vanguard and Fidelity are large and inexpensive, and index funds have market shares of 15.4% and 31.5%, respectively. In contrast, within broker-sold channels, index funds are significantly smaller and more expensive, and have very low market shares. Within these advice channels, the benefits of index funds over actively-managed funds are greatly diminished, making it easier for brokers to justify active management. Thus, the revealed preference for actively managed funds within advice channels—regardless of whether investors self-select into these channels or are captured by them—becomes less puzzling contingent upon their investment choice set.

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Table I. Segmentation by distribution channel for families distributing retail mutual funds

The numbers in this table are computed at the family level. Families are placed in one of seven distribution channels based on the maximum percentage of actively managed domestic equity assets under management distributed through a particular channel according to 2002 data from the Financial Research Corporation (FRC). We compute the Herfindahl index for each family by summing the squared share of TNA distributed through each of the seven FRC distribution channel categories (TNA of missing distribution channel data is ignored). The last two columns compute the mean percent of family assets distributed through each channel and mean Herfindahl index using family TNA in all asset classes. The table does not include the twenty families that were dropped due to missing distribution channel data, representing an aggregate of \$300 million in assets.

Distribution Channel:	Number of families in channel	Aggregate ADE assets in channel (\$Billions)	Top three families in this channel ranked by ADE assets under management	% of family ADE assets in primary channel				Mean Herfindahl Index (ADE assets)	Mean % of family assets in primary channel	Mean Herfindahl Index (all assets)
				Mean	25 th percentile	Median	75 th percentile			
Direct:	169	\$632.9	Fidelity Vanguard Janus	96.5%	99.7%	100%	100%	0.947	94.8%	0.924
Institutional:	74	\$99.8	SEI Investments Dimensional Fund Advisors Banc One	86.2%	75.0%	92.2%	100%	0.800	85.7%	0.786
Captive:	17	\$88.7	American Express Morgan Stanley Smith Barney	90.3%	82.8%	96.9%	100%	0.846	86.6%	0.797
Bank:	23	\$13.8	ABN AMRO US Trust of NY Northern Trust	89.8%	79.2%	100%	100%	0.861	86.9%	0.813
Insurance:	16	\$20.4	Thrivent Eclipse (NYLife) State Street	94.2%	90.5%	98.4%	100%	0.900	87.5%	0.810
Wholesale:	76	\$418.3	American Funds Putnam AIM	91.1%	87.4%	100%	100%	0.871	89.6%	0.851
Other:	77	\$40.5	General Electric Gabelli Asset Mgmt Goldman Sachs	92.8%	96.5%	100%	100%	0.907	90.3%	0.870
Total:	452	\$1,314.5	Fidelity American Funds Vanguard	92.6%	90.5%	100%	100%	0.894	90.7%	0.866
Top 25 largest:	25	\$942.6	Same as above	85.8%	75.6%	94.1%	97.8%	0.793	84.5%	0.777

Table II. Primary and Secondary Distribution Channels in 2002

Panel A. Number of Primary-Secondary Distribution Channel Pairs

The sample below includes the 452 families for which we have distribution channel data in 2002. The primary distribution channel is the channel through which the family distributes the largest percentage of actively managed domestic equity assets, and the secondary channel is the next largest percentage for each family. The column None indicates that the family distributes 100% of ADE assets through a single channel.

Primary Distribution channel of fund family	Secondary Distribution channel of fund family								Total
	Direct	Institutional	Captive	Bank	Insurance	Wholesale	Other	None (%)	
Direct	---	14	0	1	0	2	27	125 (74.0%)	169
Institutional	3	---	1	21	0	7	19	23 (31.1%)	74
Captive	0	7	---	0	0	0	4	6 (35.3%)	17
Bank	0	4	1	---	0	0	6	12 (52.2%)	23
Insurance	0	4	0	0	---	0	6	6 (37.5%)	16
Wholesale	5	14	0	0	1	---	17	39 (51.3%)	76
Other	6	6	1	1	1	6	---	56 (72.7%)	77
Total	14	49	3	23	2	15	79	267 (59.1%)	452

Panel B. Average fraction of Family ADE Total Net Assets in the Secondary Distribution Channel (for families in that cell in Panel A)

Primary Distribution channel of fund family	Secondary Distribution channel of fund family						
	Direct	Institutional	Captive	Bank	Insurance	Wholesale	Other
Direct	---	15.9%	0	5.3%	0	6.2%	10.6%
Institutional	23.6%	---	12.2%	14.4%	0	25.5%	19.6%
Captive	0	16.0%	---	0	0	0	7.8%
Bank	0	28.6%	11.4%	---	0	0	16.5%
Insurance	0	7.4%	0	0	---	0	8.3%
Wholesale	32.0%	8.9%	0	0	14.0%	---	15.3%
Other	10.5%	23.1%	9.9%	42.8%	3.5%	30.5%	---

Table III. Monthly Flow-Performance Sensitivity Across Distribution Channels, 1996-2002

This table reports regressions where the dependent variable is monthly net percentage fund flow, using the standard definition of the growth in TNA less capital appreciation. The unit of observation is fund *i* in month *t*. All regressions include channel-by-style-by-month fixed effects and the following fund-level control variables, which are also interacted with channel: lagged no-load fund dummy, lagged expense ratio, lagged 12b-1 fee, lagged log of fund TNA, lagged log of family TNA, and current fund age measured in years. We also include dummy variables that indicate whether fund *i*'s net return in month *t*-1 was in either the top or bottom 20% of funds within the same Morningstar investment style (but across channels). The sample size equals 115,918 observations. Standard errors are clustered on fund family. P-values are reported in parentheses.

	Direct	Institutional	Captive	Bank	Insurance	Wholesale	Other
Net flow (t-1)	0.222***	0.182***	0.248***	0.022	0.268***	0.313***	0.259***
* Channel dummies	(0.000)	(0.000)	(0.000)	(0.674)	(0.001)	(0.000)	(0.000)
Net return (t-1) in Top 20%	1.339***	0.135	-0.274	-0.038	0.137	0.393**	0.307
* Channel dummies	(0.000)	(0.521)	(0.208)	(0.934)	(0.560)	(0.020)	(0.231)
Net return (t-1)	-0.047	0.185***	0.176***	0.164*	0.092	0.050	0.112*
* Channel dummies	(0.586)	(0.000)	(0.000)	(0.076)	(0.132)	(0.189)	(0.052)
Net return (t-1) in Bottom 20%	-0.839***	0.489**	0.189	-0.305	-0.051	-0.328**	-0.293
* Channel dummies	(0.000)	(0.018)	(0.246)	(0.281)	(0.798)	(0.048)	(0.205)
H ₀ : Coefficient on lagged net flows are equal across channels			0.001***				
H ₀ : Coefficient on lagged net return are equal across channels			0.069*				
H ₀ : Coefficient on top 20% dummies are equal across channels			0.013**				
H ₀ : Coefficient on bottom 20% dummies are equal across channels			0.000***				

Table IV. Subadvisory market participants by outsourcing distribution versus portfolio management function (active domestic equity (ADE) mutual funds in 2002)

At the level of the asset management firm, or family, we compute summary statistics for all firms that either participate as a buyer or seller of retail mutual fund subadvisory services. Firms are grouped below into three categories: families who outsource portfolio management (buy subadvisory services), families that outsource some retail distribution (sell subadvisory services to other families), and separate account managers that outsource 100% of their retail distribution. The first two categories are not mutually exclusive, as there are 13 advisors who both buy and sell subadvisory services. We obtain data on assets under management and number of funds (separate account products) from the CRSP Survivor-bias-free mutual fund database for families and from the Mobius M-search database for separate account managers.

	N	Top five largest firms (families) in this category ranked by ADE assets under management	Average (median) family TNA in ADE funds (\$billions)	Average (median) family TNA (\$billions)	Average (median) number of ADE funds in family	Average (median) number of funds in family	Average (median)% of ADE funds outsourced to subadvisors	Average (median) number of ADE funds serve as subadvisor for others
Mutual fund families that outsource portfolio management: Buy subadvisory services	106	Vanguard AIM American Express Morgan Stanley Oppenheimer	3.1 (0.68)	9.4 (1.6)	8.1 (5)	21.2 (11.5)	62.5 (60)	0.4 (0)
Mutual fund families (subadvisors) that outsource some retail fund distribution: Sell subadvisory services	86	Fidelity Janus Putnam T Rowe Price American Century	8.8 (1.6)	16.8 (2.6)	9.4 (6)	25.2 (11.5)	3.0 (0)	3.5 (2)
Separate account managers that outsource all retail fund distribution: Sell subadvisory services	130	Wellington Management Jennison Associates Dresdner RCM Global Capital Guardian Trust Fayez Sarofim	5.8 (2.2)	9.9 (2.9)	3.4 (2)	5.6 (4)	0	2.2 (1)

Table V. Distribution Channels of Buyers and Sellers of Subadvisory Services

Panel A. All fund-subadvisor pairs in 2002

The sample below includes 549 subadvised fund-subadvisor pairs for which we have distribution channel data. The distribution channel of the subadvised fund is defined at the fund level. We aggregate the assets within each channel across all of a fund's share classes and assign each fund a distribution channel category when at least 75% of its assets are sold through that channel. Otherwise, we treat the distribution channel as missing. The subadvisor's distribution channel is defined as the channel that has the largest percentage of family ADE TNA distributed through it. The categories direct, institutional, captive, bank, insurance, wholesale, and other represents distribution channels within the mutual fund universe. Separate account subadvisory firms are defined as firms that do not have in-house retail fund distribution. There are 23 fund-subadvisor pairs with missing distribution channel data, and 25 pairs set to missing due to less than 75% of fund assets in one channel.

Distribution channel of subadvisory firm (seller of subadvisory services)									
Distribution channel of subadvised fund	Direct	Institutional	Captive	Bank	Insurance	Wholesale	Other	Separate Account	Total
Direct	7	4	1	0	0	8	0	62	82
Institutional	30	21	3	0	0	16	13	98	181
Captive	11	10	2	1	0	12	7	18	61
Bank	2	2	0	0	0	5	1	8	18
Insurance	20	4	3	0	1	2	7	15	52
Wholesale	19	4	2	0	1	12	5	37	80
Other	13	4	3	0	1	12	4	38	75
Total	102	49	14	1	3	67	37	276	549
Total (%)	18.6%	8.9%	2.6%	0.2%	0.5%	12.2%	6.7%	50.3%	100%
% of sellers subadvising a fund in channel different than their own	93.1%	57.1%	85.7%	100%	66.7%	82.1%	89.2%	100%	91.4%

Table V. Distribution Channels of Buyers and Sellers of Subadvisory Services (continued)

Panel B. Fund-subadvisor pairs for subadvised funds with exactly one subadvisor in 2002

The sample below includes 252 subadvised fund-subadvisor pairs for which we have distribution channel data and the subadvised fund has exactly one subadvisor. Otherwise the same definitions apply from Panel A.

Distribution channel of subadvisory firm (seller of subadvisory services)									
Distribution channel of subadvised fund	Direct	Institutional	Captive	Bank	Insurance	Wholesale	Other	Separate Account	Total
Direct	3	1	0	0	0	4	0	46	54
Institutional	6	1	2	0	0	7	3	14	33
Captive	2	3	0	0	0	6	2	1	14
Bank	1	1	0	0	0	4	1	7	14
Insurance	19	4	2	0	1	2	5	12	45
Wholesale	8	2	1	0	1	9	4	24	49
Other	6	1	1	0	1	6	4	24	43
Total	45	13	6	0	3	38	19	128	252
Total (%)	17.9%	5.2%	2.4%	0.0%	1.2%	15.1%	7.5%	50.8%	100%
% of sellers subadvising a fund in channel different than their own	93.3%	92.3%	100%	100%	66.7%	76.3%	78.9%	100%	92.9%

Table VI. Subadvisory and Management Fees for Retail Mutual Funds in 2002

The sample below includes 249 family-subadvisor pairs for which we have fee data for funds with a single subadvisor. The data on management fees comes from the CRSP mutual fund database and is defined as the dollar management fee paid in fiscal-year 2002 divided by fund average TNA in 2002. The subadvisory fee is from the Statement of Additional Information within the 485BPOS SEC filing of the subadvised fund in 2002. This fee is the dollar fee paid to the subadvisory firm in fiscal-year 2002 divided by fund average TNA in 2002. The table below reports the 75th, 50th, and 25th percentiles of the distribution of percentage fees in basis points by Morningstar style category, and overall across the 249 pairs. The last three columns report the the 75th, 50th, and 25th percentiles of the percentage fee split, defined as the subadvisor fee divided by the management fee.

Morningstar Style Category	N	Subadvisory fees in basis points			Management fees in basis points			Subadvisor fee/Management fee (fee split %)		
		75 th percentile	Median	25 th percentile	75 th percentile	Median	25 th percentile	75 th percentile	Median	25 th percentile
Large-cap Value	35	40	30	22	80	70	54	53.3	43.8	39.0
Large-cap Blend	37	45	33	23	100	80	70	54.1	40.0	31.3
Large-cap Growth	67	50	40	30	90	80	70	60.0	52.3	41.4
Mid-cap Value	10	70	50	43	100	95	69	70.0	60.8	50.6
Mid-cap Blend	8	48	40	33	93	83	66	60.5	48.5	44.2
Mid-cap Growth	34	55	45	30	100	90	75	63.2	50.0	36.8
Small-cap Value	13	70	58	40	100	100	75	69.2	55.6	51.4
Small-cap Blend	9	65	50	35	100	85	70	60.0	50.0	50.0
Small-cap Growth	36	65	54	35	100	91	80	73.8	54.2	44.1
All styles	249	52	40	30	100	80	70	62.5	50.0	40.0

Table VII. The Relation between Subadvisor Fees and Contract, Family, and Subadvisor Characteristics

The table below contains the results of an OLS regression where the dependent variable equals the subadvisory fee for the sub-sample of subadvised funds that hire only a single subadvisor. Standard errors are clustered on family and on subadvisor. P-values are in parentheses. ***, **, * indicate significance at the 1%, 5%, and 10% levels.

Independent variables:	(1)	(2)	(3)	(4)
Management fee	0.377*** (0.000)	0.393*** (0.000)	0.390*** (0.000)	0.386*** (0.000)
Natural log of family assets under management (millions)		0.004 (0.613)	0.002 (0.754)	0.003 (0.729)
Separate account subadvisor dummy		-0.029 (0.291)	-0.026 (0.227)	-0.033 (0.217)
Subadvisor name in fund name dummy		0.030 (0.265)		0.027 (0.317)
Subadvisor name in fund name dummy * Family in direct channel		0.136** (0.013)		0.112** (0.049)
Subadvisor name in fund name dummy * Family in wholesale channel		-0.052 (0.304)		-0.047 (0.313)
Specialist subadvisor hired dummy			0.020 (0.341)	0.019 (0.356)
Specialist subadvisor hired dummy * Family in direct channel			0.107** (0.050)	0.095 (0.109)
Specialist subadvisor hired dummy * Family in wholesale channel			0.058* (0.075)	0.060* (0.068)
Contract characteristics:				
Natural log of subadvised fund assets (millions)	-0.022*** (0.000)	-0.026*** (0.000)	-0.027*** (0.000)	-0.026*** (0.000)
Large-cap value dummy	0.023 (0.525)	0.013 (0.700)	-0.010 (0.748)	-0.002 (0.948)
Large-cap growth dummy	0.082** (0.027)	0.061** (0.041)	0.028 (0.289)	0.036 (0.183)
Mid-cap value dummy	0.157*** (0.000)	0.134*** (0.000)	0.109*** (0.001)	0.104*** (0.002)
Mid-cap blend dummy	0.081* (0.078)	0.063 (0.132)	0.060 (0.133)	0.067 (0.107)
Mid-cap growth dummy	0.083** (0.050)	0.061* (0.089)	0.057* (0.097)	0.062* (0.069)
Small-cap value dummy	0.152*** (0.003)	0.122*** (0.005)	0.103*** (0.010)	0.112*** (0.005)
Small-cap blend dummy	0.105** (0.048)	0.106** (0.045)	0.095** (0.048)	0.110** (0.026)
Small-cap growth dummy	0.147*** (0.003)	0.127*** (0.004)	0.112*** (0.004)	0.118*** (0.003)

Direct channel dummy	0.028 (0.530)	0.019 (0.686)	-0.029 (0.541)	-0.023 (0.657)
Institutional channel dummy	0.045 (0.274)	0.054 (0.195)	0.045 (0.233)	0.056 (0.167)
Captive channel dummy	0.068 (0.101)	0.064 (0.108)	0.067* (0.051)	0.071** (0.048)
Bank channel dummy	-0.052 (0.316)	-0.009 (0.877)	-0.009 (0.865)	-0.002 (0.976)
Insurance channel dummy	0.022 (0.493)	-0.001 (0.963)	0.002 (0.945)	0.000 (0.994)
Wholesale channel dummy	-0.067* (0.062)	-0.054 (0.230)	-0.093** (0.012)	-0.073 (0.128)
Intercept	0.119 (0.179)	0.114 (0.210)	0.147* (0.059)	0.134 (0.106)
N	249	226	226	226
R ²	0.501	0.562	0.579	0.591
P-value test that coefficient on management fee = 0.50	0.188	0.127	0.060*	0.051*
Standard errors clustered on family and subadvisor?	Yes	Yes	Yes	Yes