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Do 401(k) Advisors Add Value?

Morningstar Investment Management LLC
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Executive Summary

Defined-contribution plans, especially 401(k) plans, are a central part of how Americans save for retirement. As of March 31, 2020, total assets in DC plans were $7.9 trillion, of which 401(k) plans represented $5.6 trillion.[1] Most employers are not professional fiduciaries and often seek help for managing their DC plan. Plan advisors can assist employers (that is, plan sponsors) with a variety of activities, such as selecting investments, determining service providers, selecting plan provisions, and so on.

Research on the value of DC plan advisors is relatively limited. What little past research that does exist has been largely or entirely focused either on the plan investments (that is, whether the funds in the plan outperform their peers) or participant-level investment decisions (whether advisors help participants build more efficient portfolios). While investment menu quality and participant-specific allocations are obviously important considerations, there are other metrics that can potentially be used to gauge the value (that is, the potential benefit) of a plan advisor.

This research explores the potential benefits of a 401(k) plan advisor from a plan-sponsor perspective, focusing on more plan-level metrics such as default investment availability and usage, plan governance, the adoption of automatic enrollment, the inclusion of employer securities, and fund diversity, in addition to the more typical investment-related analysis. This research uses data from 2016 5500 EBSA filings.

While the differences associated with 401(k) plans that had an advisor varied by test, the overall analysis strongly suggests that smaller 401(k) plans—defined as those with assets from $1 million to $50 million—that have an advisor are doing better than those without. The research showed that these smaller plans with advisors were more likely to offer a default investment, had a higher portion of their assets in target-date funds, had a higher likelihood of automatically enrolling participants, and were more likely to be demonstrating good fiduciary governance procedures. They also were more likely to not have employer securities in the plan, and were more likely to diversify away from proprietary recordkeeping investments. With respect to plan investments, smaller plans were more likely to have funds that had higher future three-year excess returns as well as "higher-quality" funds, with quality being determined using either Morningstar star ratings or Morningstar quantitative analyst ratings.[2]

1 https://www.ici.org/research/stats/retirement/ret_20_q1.

2 Worth noting, these metrics are related. The correlation between the two metrics for all test funds was 0.557.

The marginal impact of the plan advisor declined as assets increased for most domains. Relatively few of the differences were statistically significant[3] for plans with more than $50 million in assets. While we do not know why the advisor impact declined with plan size, our hypothesis is that these larger plans are more likely to have resources specifically dedicated to operating the plan. In contrast, smaller employers, which tend to have smaller 401(k) plans, may have to rely more on the plan advisor to ensure the plan is implementing best practices. Therefore, while the advisor may serve as the primary source of information for smaller plans, he or she could be more complementary to existing resources in larger plans.

Overall, this research provides evidence that smaller 401(k) plans with an advisor are doing "better" than those without. Correlation is not necessarily causation, though. It could be that plans that have advisors were already making better decisions and that hiring an advisor is simply something else those plans do in order to improve an already effective plan.[4] Therefore, while this research provides preliminary evidence that plan advisors are helping plan sponsors run more effective 401(k) plans, more research on this topic is warranted.

3 Statistical significance is typically defined as a *p* value less than 5% for the purposes of this analysis.

4 In other words, hiring an advisor is potentially endogenous to the other decisions being made by the plan sponsor.

401(k) Plan Advisors

Defined-contribution plans, and in particular 401(k) plans, have evolved significantly over the past few decades. Initially, 401(k) plans were pooled arrangements where the plan sponsor was responsible for all investment decisions. In contrast, 401(k) plans today have largely transitioned, to where each participant has an individual account and exercises discretion over the investments in the account. This change and others have increased the complexity associated with operating a 401(k) plan and have resulted in many plan sponsors seeking help with understanding and implementing best practices.

Plan advisors can assist employers with a variety of functions relating to a DC plan. An advisor's scope of services can be relatively narrow, such as providing assistance solely with respect to selecting plan funds in a nonfiduciary capacity. Or the services can be relatively broad and more holistic, where the advisor serves in some type of fiduciary capacity with respect to the plan investments as well as offering more-comprehensive guidance on plan governance. Plan advisors can also help individual participants with decisions around saving and investing.

With respect to assisting a plan's sponsor with plan investments, there are many specific approaches, such as offering ERISA 3(21) or ERISA 3(38) support. In a 3(21) role, the advisor serves as a co-fiduciary, providing opinions and perspective on how to manage plan investments (as a fiduciary), but the plan sponsor maintains ultimate responsibility for making investment decisions (that is, maintains discretion for the investments). In a 3(38) role, the plan advisor serves as an investment manager and has discretion over the core menu—that is, ultimate say. It is also possible for an advisor to simply provide guidance to the plan sponsor and to serve in an entirely nonfiduciary capacity.

For some perspective on how common these roles are, Cerulli (2019) reports that 39.9% of retirement specialist advisors serve in a 3(21) capacity, 32.6% do not serve as a fiduciary, and 12.8% serve in a 3(38) capacity.[5] Therefore, relatively few advisors have the "final say" when it comes to plan investment decisions. This means that while advisors can suggest a plan sponsor take certain actions, the final decision rests with the plan sponsor (which may limit the advisor's potential impact).

Advisors can assist with a variety of aspects related to plan management beyond the investments. For example, advisors can encourage the plan sponsor to automatically enroll participants into the plan in order to improve plan participation. They can provide guidance on things such as the right way to structure any employer contributions (for example, the plan match) to maximize employee engagement. Advisors can provide broad fiduciary governance guidance, as well as ensure the plan complies with various rules and regulations required by plan fiduciaries.

While advisors have the potential to improve plan outcomes, they typically come at a cost. Exhibit 1 includes information about how the median total plan cost, defined as total plan expenses divided by total plan assets, differs for plans with and without an advisor. The analysis is based on data from the

5 Additionally, 10.8% outsource fiduciary services to a third party and 4.0% serve as an ERISA 3(16) plan administrator role.

annual Morningstar fee benchmarking report (Blanchett and Mitchell, 2019) using plan data from the 2016 plan year.[6]

Exhibit 1 Median Total Plan Cost Differences, With and Without a Plan Advisor

Plan Size	Advisor	No Advisor	Difference
$1 Mil-$5 Mil	1.22	1.04	0.18
$5 Mil-$10 Mil	1.01	0.87	0.14
$10 Mil-$25 Mil	0.90	0.76	0.14
$25 Mil-$50 Mil	0.78	0.65	0.13
$50 Mil-$100 Mil	0.71	0.60	0.12
$100 Mil-$250 Mil	0.62	0.54	0.08
$250 Mil-$500 Mil	0.56	0.52	0.04
$500 Mil-$1 Bil	0.44	0.40	0.04
>=$1 Bil	0.39	0.36	0.03

Source: Morningstar Direct.

Exhibit 1 demonstrates that 401(k) plans with advisors have higher average total plan costs, which is not a surprise. The difference in plan costs declines as plan assets increase, though. The higher total plan costs for advised plans are likely primarily attributable to the fees charged by the advisor; however, they could also be a function of the investments used by plans with advisors (for example, if plans with advisors use funds with higher expense ratios).

Given the fact that plans with advisors have higher total costs, it is worth exploring whether advisors are actually improving plan outcomes—that is, providing value for the additional fee. It is difficult to identify the true effect of the advisor, though, since hiring the advisor could be endogenous to the other decisions by the plan sponsor when observing the differences in plans. For example, a plan sponsor that hires an advisor may already be good at corporate governance and would have made better decisions whether or not an advisor was hired. Banerjee et al. (2019) demonstrate this spillover effect, where plans with good 401(k) designs (based on metrics calculated by BrightScope) also tend to have higher levels of profitability within and across industry sectors, no matter the size of the company.

There is relatively little research on the impact of advisors on retirement plans. The research that does exist typically focuses on investment-related outcomes and often fails to control for things such as advisor compensation and how plan fees are paid. Plan fees, which can include plan advisor fees, can be paid a variety of ways. Fees that are going to be paid by the participants can either be billed directly to the participants (which is becoming increasingly common) or they can be paid through "revenue-sharing" arrangements, with the monies being paid from the investments used to subsidize the other plans' fees.

Assuming fees will be billed to participants, it doesn't really matter whether they are withdrawn directly from participant accounts or paid from the investments (via revenue sharing)—the total fee is the same.

6 Section 3(39) of ERISA defines "plan year" as the calendar, policy, or fiscal year on which the records of the plan are kept.

However, how plan fees are paid could affect perceived investment performance if not controlled for. An analysis that does not consider the role of revenue sharing would likely find that those plans that use revenue sharing have lower performance than those that bill participants directly (since revenue-sharing payments are negative alpha). To the extent that advised plans use revenue sharing to pay plan expenses, this could create an additional hurdle unless properly accounted for. Research on retirement menus does not typically attempt to control (or mention) revenue sharing.

For instance, Yao, Wu, and Mendenhall (2020) recently explored the potential benefit of plan advisors using performance metrics. They looked at 5,570 retirement plans with 100 or more participants in four plan asset groups ($1 million to $10 million; $10 million-$100 million; $100 million-$500 million; and more than $500 million) using plan holdings data obtained from BrightScope from 2013, 2014, and 2015. While they note that in most cases using advisors is not related to performance, they do not appear to attempt to control for revenue sharing, nor do they provide any context for how an advised plan is determined. Determining whether a 401(k) plan has an advisor using the EBSA datasets can actually be a fairly complex process, which is discussed in detail in the following section.

Fund diversity is an example of an activity an advisor can do to potentially improve a plan. Recordkeepers that are also asset managers have a clear incentive to include their funds in plan menus. Research on this effect notes that recordkeepers tend to apply different rules for their funds versus nonproprietary options. For example, Pool, Sialm, and Stefanescu (2016) find that poorly performing funds are less likely to be removed from and more likely to be added to a 401(k) menu if they are affiliated with the plan trustee. Therefore, to the extent an advisor can help plan sponsors create a plan menu that includes a variety of asset managers, the better the plan menu is likely to be (at least, in theory). This effect is specifically tested in this analysis.

While advisors are likely to use similar funds with different clients, they also tend to use the same investments in their plans as they do for clients (Dvorak and Jigme 2015). This suggests advisors "eat their own cooking" and have interests that are aligned with their clients. This is not always the case in the retail space and can potentially be attributed to the fiduciary status conferred on individuals working with 401(k) plans.

Evidence on the quality of plan menus is mixed. Chen, Lai, and Wu (2016) note that plan sponsors select funds that outperform the funds with the same investment objective and that have low expense ratios; however, the outperformance only persists for a short time. Blanchett and Finke (2020) find evidence that monitoring (and replacing) funds in DC plans improves performance; however, they have no context as to the drivers of the replacement decisions (that is, whether an advisor is involved in the process). While Elton, Gruber, and Blake (2006) find only half of plans offer a reasonable set of investment options that can be used to build an efficient portfolio, Tang et al. (2010) find that virtually all participants could construct a mean-variance efficient portfolio in virtually all plans analyzed. Tang et al.'s findings mirror more general research about the breadth of 401(k) menus released by BrightScope and ICI (2019), which suggests most plans have a relatively well-developed core menu, with the median plan offering 19 funds

(when only counting target-date funds as a single investment option). Even the smallest one in 10 401(k) plans offered 13 investment options in the core menu.

Perhaps of greater concern is not the scope of funds offered to participants, but how they are used. For example, despite an efficient menu of investment options, Tang et al. note that many participants fail to build an efficient portfolio, which could lead to retirement wealth that is one fifth lower. We found that a relatively large body of research that suggests that most people are ineffective investors (see Barber and Odean, 2001, among others), and a growing body of research on the benefits associated with participants using professionally managed portfolios in DC plans (Financial Engines and Aon, 2016).

One approach to improve participant investment outcomes is to get them to delegate investment management responsibility to a professional investment manager. A relatively easy way to do this is to offer a default investment, such as a target-date fund, which is how the participant balance will be invested unless some other election is made. There is a large body of research finding that default investments can significantly improve participant portfolios (see Mitchell and Utkus (2012) for a summary of the relevant literature and considerations) and, as such, they have become increasingly popular in DC plans. Therefore, we believe one area where an advisor can add value is by both encouraging a plan sponsor to offer a default investment and encouraging participants to use it.

Automatic enrollment is another feature that has been noted to dramatically increase plan participation (see Choi, Laibson, Madrian, and Metrick (2002), among others). Therefore, similar to encouraging a plan sponsor to offer a default investment, the more an advisor can improve plan participation through decisions such as automatically enrolling participants, the more value they can add.

There is also research focused on the potential impact of advisors on DC participant allocations. For example, using data from the Oregon University System's DC plan, Chalmers and Reuter (2020) show that participants who used a broker tended to help clients construct more efficient/diversified portfolios, but they were also more likely to select higher-cost funds. Blanchett and Kaplan (2013), and Kinniry et al. (2014), among others, have introduced models that seek to quantify the potential value of financial advice for households. This paper is similar in spirit, yet instead of focusing on the potential value of financial advice for households, it instead tries to demonstrate how financial advisors could be adding value for plan sponsors in 401(k) plans, focusing on plan-level decisions. This is not to suggest individual participant (and investor) behaviors are not important; rather, these impacts are more difficult to observe and out of scope for this particular analysis.

Base Dataset

The 401(k) plan-level data used for this analysis comes from the Form 5500 filings that are available for free on the EBSA website.[7] An employer maintaining a 401(k) plan must generally file a Form 5500 with the U.S. Department of Labor. Form 5500 filings provide information about the plan, its financial condition, investments, and operations. This analysis uses plan filings from the 2016 plan year.

To be included in this analysis, a plan had to meet a number of reasonableness criteria as well as specifically be coded as a total participant-directed 401(k) plan (codes 2G and 2J in the 5500). This reduces the total base opportunity set to 45,443 plans. We must be able to match the plan with additional information on the investments obtained from RightPond Intelligence, a provider of business intelligence data and analytics on DC and defined-benefit plans for financial services firms, as well as have underlying data for a variety of tests (detailed later), which reduces the total number of test plans to 33,426.

Identifying whether a 401(k) plan is working with an advisor, as well as the specific services and scope of the engagement, can be surprisingly difficult. Plans that cover less than 100 employees at the beginning of the year do not have to provide detailed information on service providers and rather provide relatively basic financial information on Schedule I. Larger plans, defined as those with more than 100 employees at the beginning of the year, have to file Schedule H, which provides more detailed financial information. Even Schedule H doesn't specifically delineate fees paid to an investment advisor. For example, box 2(i)2 on Schedule H aggregates investment-management and investment-advisory fees. Investment-management fees could be associated with plan investment options and not constitute broader plan-level investment advice.

More comprehensive data on fees is available on Schedule C, which has Service Provider information. Part 2 of Schedule C provides detailed information for each person who received total compensation, directly or indirectly, worth $5,000 or more in connection with services rendered to the plan. Part 3 includes detailed information for each person who received more than $1,000 in indirect total compensation.

There are 55 different potential service codes, many of which are ambiguous with respect to the precise advisory services potentially being provided, and the codes selected for plan-level services are likely to vary by plan sponsors. Two service codes are identified that would specifically indicate the plan sponsor is working with an advisor: code 27, which is a fee associated with plan-level investment advisor work; and code 31, which is if the provider is a named fiduciary. We only consider these two codes and exclude other codes (for example, pertaining to investment-management services), since investment-management fees could be related to the investment assets and not related to plan-level advisory services.

7 https://www.dol.gov/agencies/ebsa/about-ebsa/our-activities/public-disclosure/foia/form-5500-datasets.

We also review information of Part 1, Item 2 in Schedule C to see if a given provider is listed as an "Investment Advisor" or some similar derivation based on wording. Of the 4,722 different total responses to Part 1, Item 2 in Schedule C, 180 are selected to suggest the entity receiving the compensation is an investment advisor. If any of the information indicates the plan is playing an advisor, the plan is assumed to have an advisor.

Exhibit 2 provides information about the coverage for the number of plans in each of the nine different asset levels considered for the analysis, as well as the number and percentage of total plans that are assumed to be working with an advisor.

Exhibit 2 Plan Coverage for Base Dataset

Plan Size	# Plans	Advisor	% Plans
$1 Mil-$5 Mil	6,980	2,484	35.60%
$5 Mil-$10 Mil	7,822	3,232	41.30%
$10 Mil-$25 Mil	9,358	4,109	43.90%
$25 Mil-$50 Mil	4,300	1,853	43.10%
$50 Mil-$100 Mil	2,285	999	43.70%
$100 Mil-$250 Mil	1,525	662	43.40%
$250 Mil-$500 Mil	564	247	43.80%
$500 Mil-$1 Bil	329	154	46.80%
>=$1Bil	263	122	46.40%
Total	**33,426**	**13,862**	

Source: Morningstar Direct.

The percentage of plans noted to be working with an advisor is relatively consistent across plan asset size groups, averaging approximately 45% of plans. This is lower than other similar research. For example, Yao, Wu, and Mendenhall (2020) note approximately 82% of considered plans had an advisor; however, they do not provide any context to the definition of an advised plan.
It is likely the approach used in this paper, to define whether the plan has an advisor, undercounts actual advisor representation. Therefore, while it is highly likely a plan coded as having an advisor does in fact have an advisor, there are likely many plans coded as not having an advisor that actually do.

It is not possible to test the actual impact of a plan advisor given the structure of the data. Rather, we must observe the differences in plans that have an advisor versus those that do not. Hiring an advisor could be endogenous to other factors considered—a plan that has an advisor may be more likely to make other good choices.

The base dataset, without additional refinements, is used for five tests: whether the plan offers a default investment, the percentage of total assets in target-date funds, whether the plan offers automatic enrollment, whether the plan exhibits good plan governance characteristics, and whether the plan offers employer securities. Additional details for each test are included in the respective future section.

Further refinements are made to the base dataset to review fund diversity as well as the "quality" of the funds in the plans. Additional details regarding the test groups are included in subsequent sections.

For each test, two groups of metrics are provided. The first is the aggregate percentage differences for the respective metric across the nine plan size groups for plans with and without advisors. This provides some context as to how the metric varies by plan size and whether the plan is advised. The second group includes differences in the aggregate values, as well as the marginal effects coefficients from a probit regression, for the nine different plan size groups.

The dependent variable for the regressions is the metric being considered (for example, whether the plan automatically enrolls participants), which is typically coded as 1 if true, 0 if false. Independent variables include the natural logarithm of plan size, the natural logarithm of average participant balance, the percentage of total participants in the plan that are active, as well as dummy variables for each of the respective plan sizes, which is coded as 1 if the plan is the respective size and has an advisor. Independent variables beyond whether the plan has an advisor are included because we expect certain plan-level attributes to vary by plan size. For example, there is a clear effect in Exhibit 2 where larger plans have lower total costs.

Base Dataset Results

This section summarizes the results of the first five tests using the base dataset. Regression results for these five tests are included in Appendix 1.

Whether the Plan Offers a Default Investment

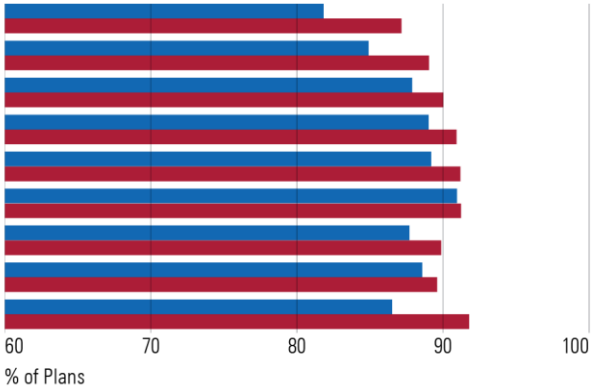
The first test focuses on whether the plan offers a default investment, which is noted by providing code 2T to question 8a on the 5500. Offering a default investment can significantly improve participant portfolios. As noted previously, a relatively large body of research indicates that most people are ineffective investors. This suggests that using a professionally managed portfolio as the default investment has the potential to improve participant investment outcomes.

Panel A in Exhibit 3 includes the total percentage of plans offering a default investment by plan size groups and whether the plan has an advisor. Panel B includes the marginal effects from the probit regression and the average differences (based on the averages in Panel A).

Exhibit 3 Whether the Plan Offers a Default Investment

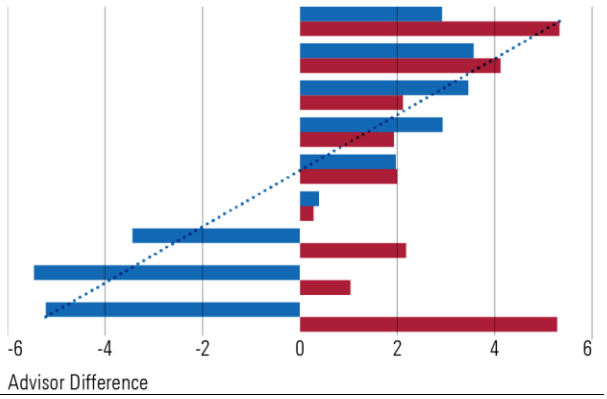
Panel A: Total Percentages

Plan Assets	No Advisor	Advisor
$1 Mil-$5 Mil	81.83	87.16
$5 Mil-$10 Mil	84.92	89.05
$10 Mil-$25 Mil	87.90	90.02
$25 Mil-$50 Mil	89.01	90.93
$50 Mil-$100 Mil	89.19	91.19
$100 Mil-$250 Mil	90.96	91.24
$250 Mil-$500 Mil	87.70	89.88
$500 Mil-$1 Bil	88.57	89.61
>= $1 Bil	86.52	91.80



Panel B: The Advisor Difference

Plan Assets	Marginal Effects	Average Difference
$1 Mil-$5 Mil	2.92	5.33
$5 Mil-$10 Mil	3.57	4.12
$10 Mil-$25 Mil	3.46	2.12
$25 Mil-$50 Mil	2.93	1.93
$50 Mil-$100 Mil	1.97	2.00
$100 Mil-$250 Mil	0.39	0.28
$250 Mil-$500 Mil	-3.44	2.18
$500 Mil-$1 Bil	-5.46	1.04
>= $1 Bil	-5.22	5.28



Source: Morningstar Direct.

The overall percentage of plans offering a default investment is relatively high, averaging approximately 90%. The probability of using a default investment increases by plan size. With respect to the advisor differences, smaller plans with advisors were more likely to offer a default investment. For larger plans, while the overall differences remain positive (that is, plans with advisors are more likely to use a default investment, on average) the marginal effects coefficients are negative. The marginal effects coefficients are only statistically significant[8] up to the group of plans that are $25 million to $50 million in size (that is, not statistically significant for the larger plans). Therefore, with respect to the relation between whether the plan has an advisor and offers a default investment, there is a strong positive relation for smaller plans, but the advisor difference declines as plan size increases and the relation is ambiguous—that is, not statistically significant—for the largest plans.

8 Statistical significance is generally defined as a *p* value less than 5% for the purposes of this analysis.

Percentage of Total Plan Assets in Target-Date Funds

Target-date funds have become the most popular default investment among the three qualified default investment options introduced by the Pension Protection Act of 2006.[9] According to Callan (2020), 87% of DC plans that used a default investment in 2019 used a target-date fund. This is up significantly from 2006, when target-date funds were the default investment for only 35% of plans. For this test we explore the percentage of total plan assets in a target-date fund. A fund is assumed to be a target-date fund based on its security identifier, if available, as classified by Morningstar, based on data from Morningstar Direct. If a security identifier is not available for a fund, a word search is conducted, looking for signs that the fund could be a target-date fund. This includes searching for words like "target-date," as well as similar variations, and common target-date fund vintage years (for example, 2000, 2005, … to 2070). Similar to the previous test, the higher the percentage of assets in target-date funds, the better off the plan is assumed to be doing.

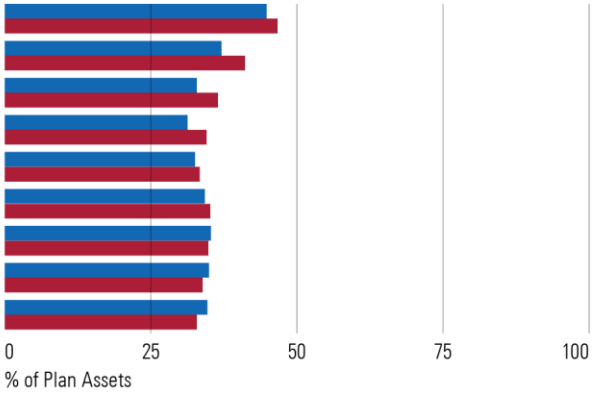
Exhibit 4 includes information about the percentage of total plan assets in target-date funds, with aggregate information about plan size included in Panel A and the respective advisor differences in Panel B.

9 The other two qualified default investments are balanced funds and managed accounts.

Exhibit 4 Percentage of Total Plan Assets in Target-Date Funds

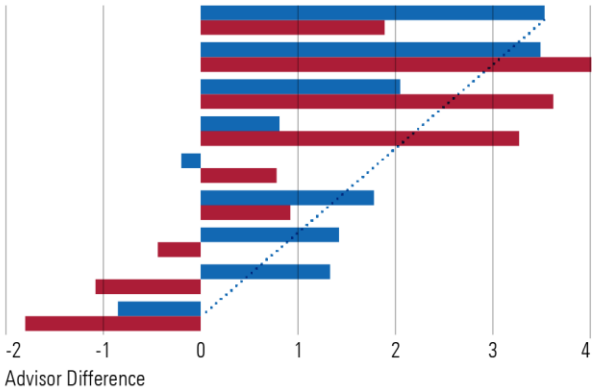
Panel A: Percentage of Plan Assets

Plan Assets	No Advisor	Advisor
$1 Mil-$5 Mil	44.80	46.69
$5 Mil-$10 Mil	37.11	41.13
$10 Mil-$25 Mil	32.87	36.49
$25 Mil-$50 Mil	31.29	34.56
$50 Mil-$100 Mil	32.60	33.38
$100 Mil-$250 Mil	34.26	35.19
$250 Mil-$500 Mil	35.27	34.83
$500 Mil-$1 Bil	34.95	33.87
>= $1 Bil	34.69	32.89



Panel B: The Advisor Difference

Plan Assets	Marginal Effects	Average Difference
$1 Mil-$5 Mil	3.53	1.89
$5 Mil-$10 Mil	3.49	4.01
$10 Mil-$25 Mil	2.05	3.62
$25 Mil-$50 Mil	0.81	3.27
$50 Mil-$100 Mil	-0.20	0.78
$100 Mil-$250 Mil	1.78	0.92
$250 Mil-$500 Mil	1.42	-0.44
$500 Mil-$1 Bil	1.33	-1.08
>= $1 Bil	-0.85	-1.80



Source: Morningstar Direct.

While roughly 90% of plans note offer a default investment (Panel A of Exhibit 3), only about 36% of plan assets are in target-date funds. The 36%-of-plan-assets estimate is higher than other research on this topic. For example, BrightScope and ICI (2019) find only 21% of total plan assets in target-date funds, also using the 2016 plan year data. Vanguard (2020) noted a slightly higher percentage of assets in target-date funds, at 28% in 2016 (increasing to 37% by 2019). This dataset only includes plans that have at least one target-date fund in the menu, while the BrightScope analysis includes all plans, which likely explains a good part of the difference.

Interestingly, while larger plans are slightly more likely to offer a default investment (offering a default investment is positively correlated to plan size), the percentage of total assets in target-funds declines for larger plans. This same relation is noted by BrightScope/ICI (2019).

With respect to the advisor differences, smaller plans with advisors had a higher portion of plan assets in target-date funds, which is also consistent with the relation noted by BrightScope and ICI (2019). The probit regression coefficients are only statistically significant up to the group with a plan size of $10 million to $25 million in assets. Overall, though, we again see that the differences associated for plans that work with an advisor decline as plan size increases.

Whether the Plan Offers Automatic Enrollment

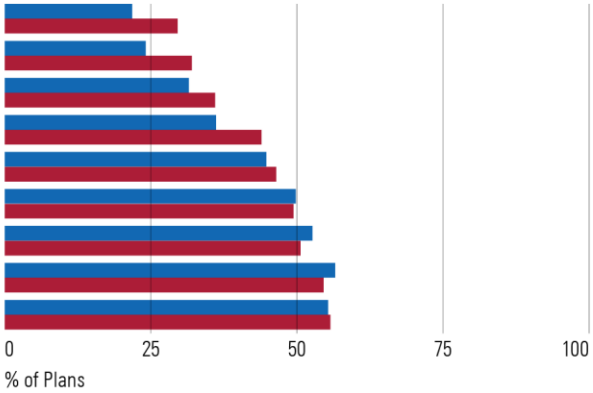
Automatically enrolling participants in a 401(k) plan can significantly improve plan participation. There has been a notable increase in the percentage of plans automatically enrolling participants over time, especially since the Pension Protection Act of 2006 was passed. For example, the number of plans using automatic enrollment at Vanguard (2020) increased from 4% to 50% from 2004 to 2019. Therefore, it's worth exploring whether there is any difference in the adoption of automatic enrollment depending on whether the 401(k) plan has an advisor. Plans indicate whether they offer automatic enrollment by providing code 2S to question 8a on the 5500.

Panel A of Exhibit 5 includes the percentage of plans which note automatically enrolling participants by plan size and whether the plan has an advisor, and Panel B includes the advisor differentials.

Exhibit 5 Percentage of Plans Automatically Enrolling Participants

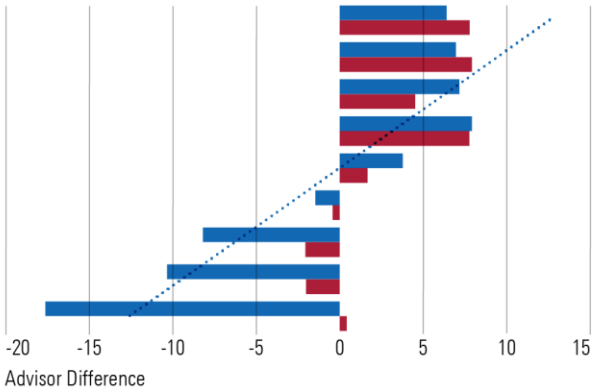
Panel A: Total Percentages

Plan Assets	No Advisor	Advisor
$1 Mil-$5 Mil	21.82	29.59
$5 Mil-$10 Mil	24.14	32.05
$10 Mil-$25 Mil	31.51	36.02
$25 Mil-$50 Mil	36.17	43.93
$50 Mil-$100 Mil	44.79	46.45
$100 Mil-$250 Mil	49.83	49.40
$250 Mil-$500 Mil	52.68	50.61
$500 Mil-$1 Bil	56.57	54.55
>= $1 Bil	55.32	55.74



Panel B: The Advisor Difference

Plan Assets	Marginal Effects	Average Difference
$1 Mil-$5 Mil	6.40	7.77
$5 Mil-$10 Mil	6.96	7.92
$10 Mil-$25 Mil	7.16	4.51
$25 Mil-$50 Mil	7.92	7.76
$50 Mil-$100 Mil	3.77	1.66
$100 Mil-$250 Mil	-1.46	-0.43
$250 Mil-$500 Mil	-8.20	-2.07
$500 Mil-$1 Bil	-10.35	-2.03
>= $1 Bil	-17.64	0.42



Source: Morningstar Direct.

Larger 401(k) plans are much more likely to offer automatic enrollment. For example, automatic enrollment was only offered in approximately 25% of plans with assets from $1 million to $5 million versus, approximately 55% of plans with assets over $1 billion. These estimates are similar to those noted by BrightScope/ICI (2019), also using 2016 EBSA data.

With respect to the advisor difference, there is a notable positive advisor effect for smaller plans, which is consistent when comparing the marginal effects to the average differences. However, for larger plans the marginal effects are negative, while the average differences are still roughly zero. All but the $100 million to $250 million marginal effects coefficients were statistically significant (again, at the 5% level). Therefore, similar to the previous tests, while there is a positive effect for advised smaller plans with respect to automatic enrollment, the advisor impact declines as plan size increases.

Whether the Plan Exhibits Good Plan Governance Characteristics

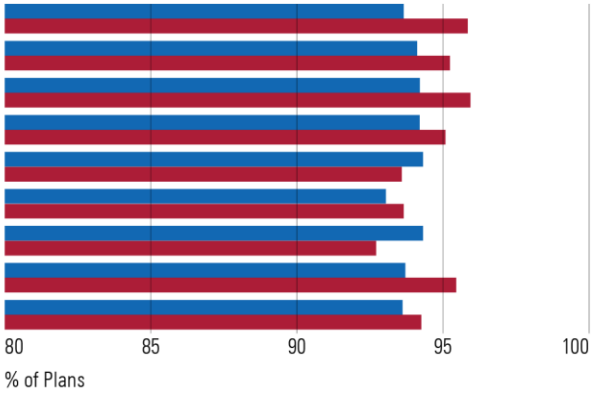
It is difficult to ascertain how diligently the employer (the plan sponsor) is overseeing its 401(k) plan. One indication about how seriously a plan sponsor could be taking its fiduciary duty is whether it intends to seek ERISA 404(c) compliance. ERISA section 404(c) relieves plan sponsors and other fiduciaries from liability for losses resulting from participants' direction of their investments. There are a variety of requirements for plan sponsors that want to comply with 404(c), which relate to the investments, plan design, disclosures, etc. Complying with 404(c) is voluntary and is assumed to be a "signal" for quality overall plan oversight (that is, fiduciary governance). Therefore, plans that note compliance with 404(c) are assumed to likely have better plan governance procedures than those without. Plans complying with 404(c) do so by providing code 2F to question 8a in the 5500.

Exhibit 6, Panel A includes the total percentage of plans complying with 404(c) by plan size groups and whether the plan has an advisor. Panel B includes the marginal effects from the probit regression and the average differences (based on the averages in Panel A).

Exhibit 6 Percentage of Plans Noting Compliance With 404(c)

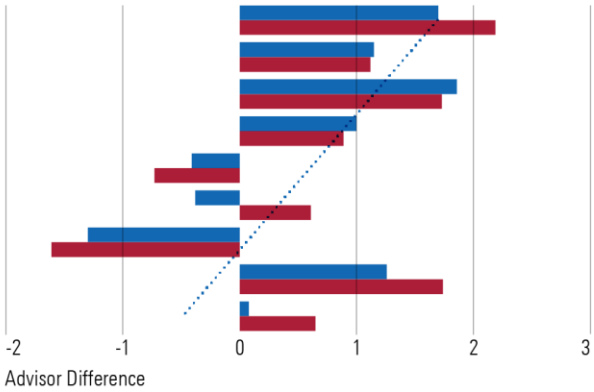
Panel A: Total Percentages

Plan Assets	No Advisor	Advisor
$1 Mil-$5 Mil	93.66	95.85
$5 Mil-$10 Mil	94.12	95.24
$10 Mil-$25 Mil	94.21	95.94
$25 Mil-$50 Mil	94.20	95.09
$50 Mil-$100 Mil	94.32	93.59
$100 Mil-$250 Mil	93.05	93.66
$250 Mil-$500 Mil	94.32	92.71
$500 Mil-$1 Bil	93.71	95.45
>= $1 Bil	93.62	94.26



Panel B: The Advisor Difference

Plan Assets	Marginal Effects	Average Difference
$1 Mil-$5 Mil	1.70	2.19
$5 Mil-$10 Mil	1.15	1.12
$10 Mil-$25 Mil	1.86	1.73
$25 Mil-$50 Mil	1.00	0.89
$50 Mil-$100 Mil	-0.41	-0.73
$100 Mil-$250 Mil	-0.38	0.61
$250 Mil-$500 Mil	-1.30	-1.61
$500 Mil-$1 Bil	1.26	1.74
>= $1 Bil	0.08	0.65



Source: Morningstar Direct.

The vast majority of plans, roughly 94%, indicate compliance with 404(c) and there is no clear relation between plan size and 404(c) compliance. With respect to whether the plan has an advisor, smaller plans with advisors were more likely to note 404(c) compliance. Similar to previous tests, the effect declines as plan assets increase, although the coefficients for the larger plans are not statistically significant.

Whether the Plan Offers Employer Securities

While offering employer securities can theoretically be a strategy to align employer and employee incentives, employer stock is generally a suboptimal investment when considered from a total wealth perspective. Investing 401(k) monies in employer securities blends an individual's human capital and financial capital, and therefore reduces diversification across an employee's total wealth. Additionally,

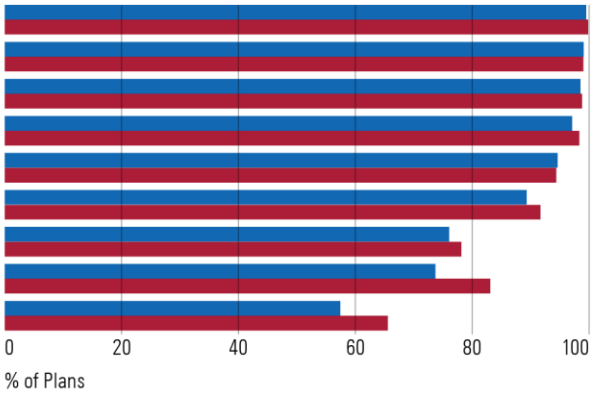
employer stock is less diversified than other investments options available in the plan (that is, has significantly higher idiosyncratic risk). Therefore, not offering employer securities would generally be considered a better outcome for plan participants. For this test, a plan is assumed to be offering employer securities if there was more than $1 in plan assets in employer securities at the end of the plan year.

Exhibit 7 includes information about the percentage of plans that do not offer employer securities (so higher is better, consistent with previous tests), with aggregate information by plan size in Panel A and the respective advisor differences in Panel B.

Exhibit 7 Percentage of Plans with No Balance in Employer Securities

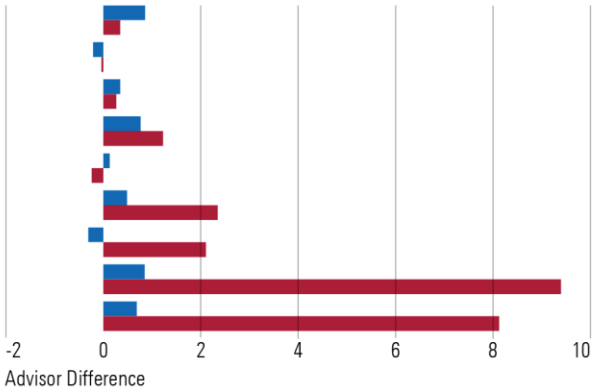
Panel A: Total Percentages

Plan Assets	No Advisor	Advisor
$1 Mil-$5 Mil	99.49	99.84
$5 Mil-$10 Mil	99.08	99.04
$10 Mil-$25 Mil	98.53	98.81
$25 Mil-$50 Mil	97.10	98.33
$50 Mil-$100 Mil	94.63	94.39
$100 Mil-$250 Mil	89.34	91.69
$250 Mil-$500 Mil	76.03	78.14
$500 Mil-$1 Bil	73.71	83.12
>= $1 Bil	57.45	65.57



Panel B: The Advisor Difference

Plan Assets	Marginal Effects	Average Difference
$1 Mil-$5 Mil	0.86	0.35
$5 Mil-$10 Mil	-0.21	-0.04
$10 Mil-$25 Mil	0.35	0.27
$25 Mil-$50 Mil	0.77	1.23
$50 Mil-$100 Mil	0.13	-0.24
$100 Mil-$250 Mil	0.49	2.35
$250 Mil-$500 Mil	-0.31	2.11
$500 Mil-$1 Bil	0.85	9.40
>= $1 Bil	0.69	8.13



Source: Morningstar Direct.

Larger plans are much more likely to offer employer securities than smaller plans. This is expected, since smaller companies are less likely to have publicly traded securities, and the costs of including employer

securities in the 401(k) can be significant. The advisor difference here is generally positive (that is, plans with advisors are less likely to offer employer securities), especially for the largest plans. The average differences in the largest two plan groups (over $500 million) are relatively large but shrink significantly when looking at the marginal effects coefficients.

Fund Diversity

The five domains reviewed so far include the entire 33,426 plans that meet initial inclusion criteria. The analysis for this section focuses only on plans using a single recordkeeper, which is also an asset manager, to see whether plans with an advisor use more (or less) of the recordkeeper's proprietary funds.

Fidelity is selected as the recordkeeper to test given its prominent role as both a recordkeeper and an asset manager. Fidelity was the largest recordkeeper in PLANSPONSOR's 2016 Recordkeeping Survey[10] with $1.449 trillion in recordkeeping assets, which was more than three times the second-largest recordkeeper.[11] It was also the fourth-largest mutual fund family as of December 31, 2016, based on data from Morningstar Direct.

Fidelity is identified as the recordkeeper of the 401(k) plan based on plan fee information. A total of 6,290 plans are determined to use Fidelity as their recordkeeper. While it would be possible to include other recordkeepers in this analysis, it would complicate the analysis and only marginally increase the test set.

One benefit of focusing only on plans that are recordkept at Fidelity is that it is relatively easy to identify whether a fund is a Fidelity fund (regardless if a security identifier is available). This is because Fidelity funds typically have the word "Fidelity" in their name. For example, of the 1,231 Fidelity mutual funds in Morningstar Direct on August 23, 2020, 1,222 (99.1%) had "Fidelity" in the fund name.[12] Therefore, a fund is assumed to be a Fidelity fund for this analysis if the word "Fidelity" appears in its name.

This particular analysis explores whether there is a difference in the percentage of assets in Fidelity funds based on whether the plan has an advisor. This analysis is not intended to suggest that Fidelity does not offer quality investment products (it does). While it would be theoretically possible to build a high-quality, diversified fund menu using entirely Fidelity funds, most investment professionals would likely contend a "better" lineup can be created using investments from a variety of asset managers (for example, Vanguard, Capital Group, T Rowe Price, and so on).

Two metrics regarding fund diversity for each plan are estimated. The first is the percentage of total assets in non-Fidelity funds. We focus on the percentage of assets in non-Fidelity funds, versus the percentage of assets in Fidelity funds, so that positive values are associated with a better outcome,

10 https://www.plansponsor.com/research/2016-recordkeeping-survey/7/#Top%20Recordkeepers.

11 TIAA, with $437 billion in recordkeeping assets.

12 The 10 funds that did not include Fidelity in the name all started with "Strategic Advisers" and then included naming information about the respective investment style.

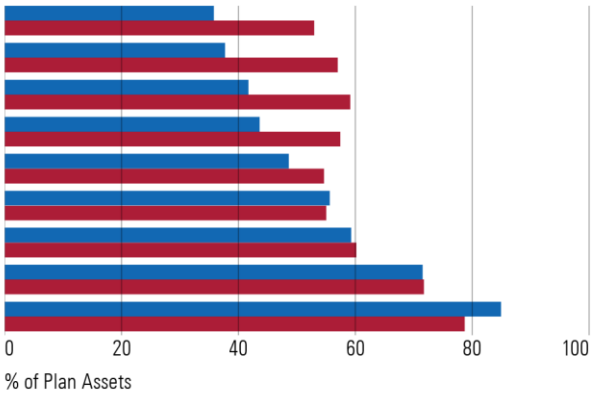
consistent with other tests. The second is the percentage of total target-date assets that are non-Fidelity funds. The second test effectively explores the frequency with which the plan sponsor uses a Fidelity target-date series (for example, the Freedom fund series) versus other nonproprietary options. The second test and the first test are also obviously related.

Exhibit 8 shows the average percentage of total plan assets that are not in Fidelity funds (that is, non-Fidelity funds) by plan asset size in Panel A, and the percentage of total assets in target-funds funds in non-Fidelity funds in Panel B. Approximately 40% of total plan assets are in target-date funds at Fidelity, which is slightly higher than the industry-wide estimates (Panel A of Exhibit 5), for reference purposes.

Exhibit 8 Percentage of Assets in Non-Fidelity Funds

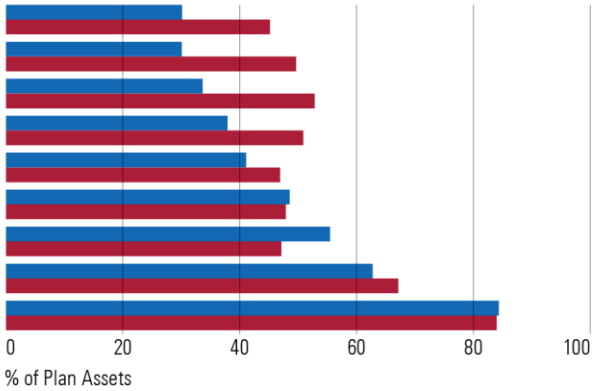
Panel A: Percentage of All Assets

Plan Assets	No Advisor	Advisor
$1 Mil-$5 Mil	35.80	52.98
$5 Mil-$10 Mil	37.71	56.97
$10 Mil-$25 Mil	41.72	59.14
$25 Mil-$50 Mil	43.63	57.42
$50 Mil-$100 Mil	48.61	54.65
$100 Mil-$250 Mil	55.62	55.04
$250 Mil-$500 Mil	59.28	60.19
$500 Mil-$1 Bil	71.52	71.73
>= $1 Bil	84.91	78.73



Panel B: Percentage of Target-Date Assets

Plan Assets	No Advisor	Advisor
$1 Mil-$5 Mil	30.15	45.22
$5 Mil-$10 Mil	30.12	49.68
$10 Mil-$25 Mil	33.68	52.87
$25 Mil-$50 Mil	37.93	50.92
$50 Mil-$100 Mil	41.12	46.93
$100 Mil-$250 Mil	48.57	47.91
$250 Mil-$500 Mil	55.49	47.13
$500 Mil-$1 Bil	62.77	67.15
>= $1 Bil	84.37	84.02



Source: Morningstar Direct.

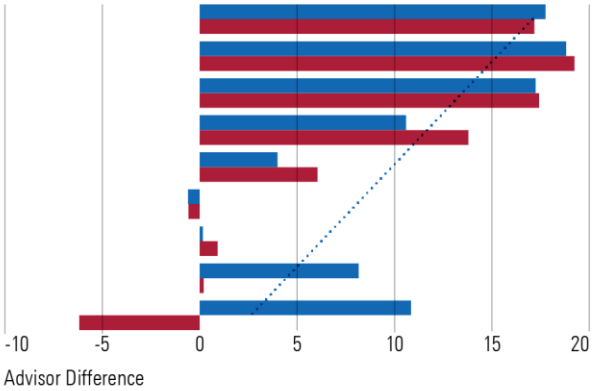
A significant portion of 401(k) plans that are recordkept at Fidelity are invested in Fidelity funds. Roughly 50% of plan assets are in Fidelity funds for the smallest plans (on average), although the allocation to

Fidelity funds declines significantly as plan size increases (to roughly 20%). There is a clear preference among larger plans, which are generally considered to be more sophisticated, to use nonproprietary funds. Exhibit 9 includes the average difference and marginal effects coefficients from probit regressions.

Exhibit 9 Advisor Differences in Non-Fidelity Fund Usage

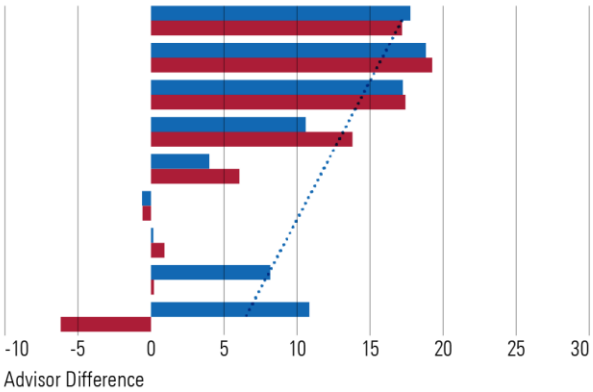
Panel A: Percentage of All Assets

Plan Assets	Marginal Effects	Average Difference
$1 Mil-$5 Mil	17.75	17.18
$5 Mil-$10 Mil	18.82	19.25
$10 Mil-$25 Mil	17.25	17.42
$25 Mil-$50 Mil	10.60	13.80
$50 Mil-$100 Mil	4.00	6.05
$100 Mil-$250 Mil	-0.60	-0.58
$250 Mil-$500 Mil	0.16	0.92
$500 Mil-$1 Bil	8.17	0.21
>= $1 Bil	10.85	-6.18



Panel B: Percentage of Target-Date Assets

Plan Assets	Marginal Effects	Average Difference
$1 Mil-$5 Mil	18.68	15.06
$5 Mil-$10 Mil	19.14	19.56
$10 Mil-$25 Mil	18.74	19.19
$25 Mil-$50 Mil	10.72	12.99
$50 Mil-$100 Mil	3.03	5.81
$100 Mil-$250 Mil	-2.18	-0.67
$250 Mil-$500 Mil	-7.68	-8.36
$500 Mil-$1 Bil	7.33	4.38
>= $1 Bil	28.48	-0.35



Source: Morningstar Direct.

Smaller plans with an advisor are much more likely to use non-Fidelity funds than those without when focusing on all assets or target-date funds (again, these two are related). The average reduction in the percentage of Fidelity funds is 18% of plan assets. While the effect appears to decline for larger plan sizes, the relation is relatively weak, and the largest plan group (greater than $1 billion) has a notable reduction in the use of Fidelity funds. Overall, these findings suggest that plan advisors have the potential to reduce the proprietary fund effect noted by Pool, Sialm, and Stefanescu (2016).

Investment Analysis

The initial test dataset comprises 33,426 plans, which includes a total of 1,013,668 funds across the plans. Since plans report fund names, not identifiers (for example, tickers) the process of "matching" a fund to a specific identifier is complicated and imprecise. RPI has a process to match plan funds to specific security identifiers, and we use this data for our analysis.

In order to include a given fund in the analysis we must have an identifier for the fund. We also must have security identifiers for 80% of the plan's assets (weighted by assets, although future tests equal-weight plan funds).13 Additionally, we require each lineup to have at least one fund that is identified as an equity fund, one as a fixed-income fund, and one as a target-date fund. These filters reduce the test plan dataset from 33,426 plans to 18,567 plans, which is broken out by plan size in Exhibit 10. Exhibit 10 also includes the reduction in plan size based on the number of funds included in the base analysis.

Exhibit 10 Test Plans for Investment Analysis

Plan Size	# Plans	%Base
$1 Mil-$5 Mil	3,835	54.90%
$5 Mil-$10 Mil	4,228	54.10%
$10 Mil-$25 Mil	5,081	54.30%
$25 Mil-$50 Mil	2,502	58.20%
$50 Mil-$100 Mil	1,397	61.10%
$100 Mil-$250 Mil	938	61.50%
$250 Mil-$500 Mil	329	58.30%
$500 Mil-$1 Bil	162	49.20%
>= $1 Bil	95	36.10%
Total	**18,567**	

Source: Morningstar Direct.

The number of larger plans that meet the security identification procedures is relatively small. This is because larger plans are more likely to have custom options that are not "off-the-shelf" investments. The identified investments are primarily mutual funds but include exchange-traded funds and collective investment trusts.

One potential issue with the investment analysis, especially as it relates to larger plans, is identification. Larger plans are more likely to use custom investments. For example, only 5% of assets in plans with assets from $1 million to $10 million were in CITs, while 43% of assets in plans with assets over $1 billion were in CITs using 2016 plan year data, according to ICI and BrightScope (2019). This likely explains the reduction in the percentage of the base plans identified, but it also may result in representative issues for the analysis. For example, if "better" plan advisors use investments that are customized to the plan, these plans may not be included in the analysis (because they cannot be identified), resulting in a situation where the only "worse" plans with advisors are included in the

13 This is a screen used by Blanchett and Mitchell (2019) and we are leveraging part of their dataset for the analysis.

analysis. Representativeness is an issue for all plan sizes but is especially important for larger plans given the drop-off in coverage.

Within the 18,567 test plans there are 562,663 funds, of which 481,540 are identified, which translates to an 85.52% aggregate identification rate. Exhibit 11 includes information about the distribution of the percentage of funds identified for the nine different plan size groups.

Exhibit 11 Fund Coverage by Plan Size Among Funds Included in the Analysis

Plan Size	5th	25th	50th	75th	95th
$1 Mil-$5 Mil	59.09	83.33	91.43	96.15	100
$5 Mil-$10 Mil	58.82	82.86	90.91	96.00	100
$10 Mil-$25 Mil	58.33	82.76	91.18	96.15	100
$25 Mil-$50 Mil	57.89	81.82	90.91	96.00	100
$50 Mil-$100 Mil	60.45	82.76	91.30	95.94	100
$100 Mil-$250 Mil	58.05	81.82	90.24	95.65	100
$250 Mil-$500 Mil	61.54	83.33	90.48	95.45	100
$500 Mil-$1 Bil	55.73	80.77	88.89	95.45	100
>=$1 Bil	56.57	82.35	89.66	94.37	100

Source: Morningstar Direct.

For each fund the same share class is used to proxy that particular investment strategy, which is defined as the oldest share class with the lowest expense ratio among all shares. This approach is taken for a variety of reasons. First, it is often difficult to identify the exact share class used for a given word combination—for example, if a plan notes having the "Vanguard S&P 500," it could mean the Investor, Admiral, or Institutional share class. Just because a fund is attributed to a security identifier does mean that is the actual correct share class in the respective plan. Second, and perhaps more importantly, different share classes can have varying levels of revenue share available to pay plan costs. For example, an R1 share class could have more than 100 basis points of revenue share, versus an R6 share class, which typically has little or no revenue share. While these revenue-share monies are important, and often used to pay for the advisor, they can also be used to pay for other plan expenses. This analysis is intended to be somewhat independent of the fees associated with paying the advisor. In other words, we are attempting to estimate performance differences before accounting for advisor fees (and/or revenue sharing).

We obtain the expense ratio for each investment from Morningstar Direct. We subtract any known revenue share, which is defined as the greater of the 12b-1 fee or the distribution fee, in addition to the transfer agency fee for each fund. We call the resulting metric the "net expense ratio," since it nets out any known revenue-share monies that could be used to pay plan expenses, including advisor fees.

Each fund's investment style is based on its Morningstar Category as of Dec. 31, 2016. For performance metrics we subtract the average return of the mutual fund category group for the respective period (for example, when estimating historical five-year returns). This results in an "excess return" estimate that is

similar to an alpha. We note further risk-adjusted performance metrics. There are 117 different categories represented and risk-adjusting performance is not particularly common when benchmarking managers.

In addition to performance metrics, we also obtain data on two fund "quality" metrics: the Morningstar star ratings and Morningstar quantitative (analyst) ratings. These additional metrics are included because they have been seen to play an important role in fund selection, in particular the star rating (Del Guercio and Tkac 2008). They also give us a numerical context to evaluate funds beyond performance and expense ratio metrics (that is, they are more holistic in nature since they typically combine multiple attributes). Additional background on these metrics is included in Appendix 3.

We assign numerical values for both ratings. For the star ratings we use the number of stars as the value, which ranges from 1 to 5. For the quantitative ratings we use values of 5 for Gold-rated funds, 4 for Silver-rated funds, 3 for Bronze-rated funds, 2 for Neutral-rated funds, and 1 for Negative-rated funds. Therefore, both aggregate rating metrics are on a 1-to-5 scale, where 1 is worst and 5 is best.

The analysis includes a series of ordinary least squares regressions, where dependent variable is the test metric for the funds. A fund does not have to have data for all metrics to be included in the analysis, only the particular metric being reviewed. In other words, the population for each test varies based on data availability (no regression includes all 481,540 funds). Plans are weighted so that each plan has the same impact on the analysis—a 401(k) plan with lots of funds would not have a larger effect on the results compared with a plan with fewer funds.

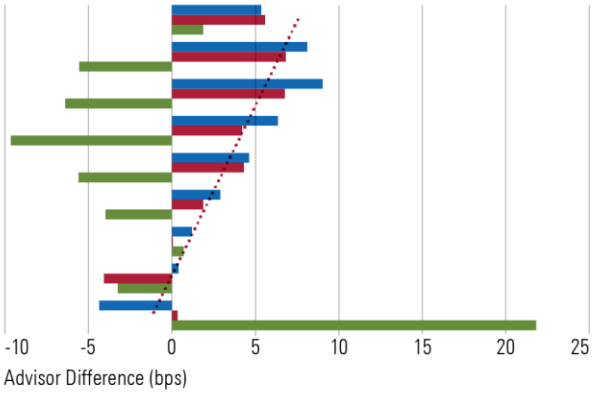
For each regression the independent variables include the natural logarithm of plan size, the natural logarithm of average participant balance, the percentage of total participants in the plan, as well as dummy variables for each of the respective plan sizes, which is coded as 1 if the plan is the respective size and has an advisor, similar to past regressions. We also include style (that is, Morningstar Category) dummies for the 32 largest fund categories, which represent 82% of all funds considered in the analysis. Style coefficients are not reported and can be obtained from contacting the authors. Detailed OLS regression results are included in Appendix 4 and the advisor regression coefficient results are reviewed below.

Exhibit 12 includes the OLS coefficients for historical returns (Panel A) and future returns (Panel B). While historical returns provide some context for the funds used in a 401(k) plan, it should not be assumed the differences are realized by participants, since we don't know exactly when the fund was added to the plan. A better metric to consider is probably future returns, since there is no potential for hindsight bias; however, the analysis implicitly assumes the fund remains in the menu over that future period.

Exhibit 12 Advisor Differential in Excess Returns

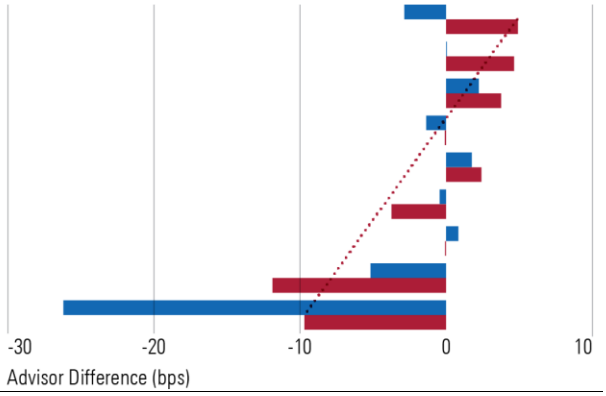
Panel A: Historical Returns

Plan Assets	Past 5 Year	Past 3 Year	Past 1 Year
$1 Mil-$5 Mil	5.36	5.58	1.87
$5 Mil-$10 Mil	8.12	6.83	-5.55
$10 Mil-$25 Mil	9.04	6.77	-6.38
$25 Mil-$50 Mil	6.36	4.21	-9.64
$50 Mil-$100 Mil	4.64	4.32	-5.59
$100 Mil-$250 Mil	2.91	1.88	-3.97
$250 Mil-$500 Mil	1.20	0.07	0.71
$500 Mil-$1 Bil	0.40	-4.07	-3.24
>= $1 Bil	-4.35	0.35	21.82



Panel B: Future Returns

Plan Assets	Future 1 Year	Future 3 Year
$1 Mil-$5 Mil	-2.87	4.92
$5 Mil-$10 Mil	0.05	4.65
$10 Mil-$25 Mil	2.24	3.77
$25 Mil-$50 Mil	-1.37	-0.10
$50 Mil-$100 Mil	1.76	2.42
$100 Mil-$250 Mil	-0.45	-3.75
$250 Mil-$500 Mil	0.84	-0.08
$500 Mil-$1 Bil	-5.17	-11.89
>= $1 Bil	-26.21	-9.71



Source: Morningstar Direct.

The results in Panel A of Exhibit 12 suggest that funds used in plans with advisors tend to have higher long-term historical performance (five-year and three-year) but lower short-term performance (one-year). While this effect is interesting, and statistically significant for most plan sizes, it is again not possible to know whether participants actually captured these effects, since we do not know when exactly the funds were added to the plan.

Future returns are likely more indicative of the potential impact of the advisor (since there is no potential for hindsight bias). While the future one-year returns are mixed, and not generally statistically significant, there is a notable and statistically significant relation for the future three-year returns, where the funds in smaller advised plans tended to have higher future excess three-year returns. The effect

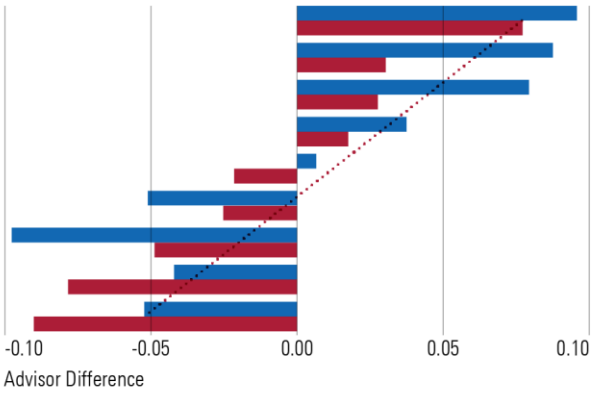
declines and is negative for larger plan sizes (although the negative coefficients for larger plans are not statistically significant).

Next, we review the results for the ratings and net expense ratio. It's important to note that the ratings tend to increase for larger plans (that is, larger funds tend to have higher-rated funds) and expense ratios tend to decrease (that is, larger funds tend to have funds with lower expense ratios). At a high level, this suggests larger plans tend to have funds that are higher-quality with lower expense ratios. These effects are controlled for within the regression framework, in order to isolate the marginal impact of the advisor. Exhibit 13 includes the OLS coefficients for fund ratings in Panel A and the net expense ratios in Panel B.

Exhibit 13 Advisor Differential in Fund Ratings and Net Fund Expense Ratios

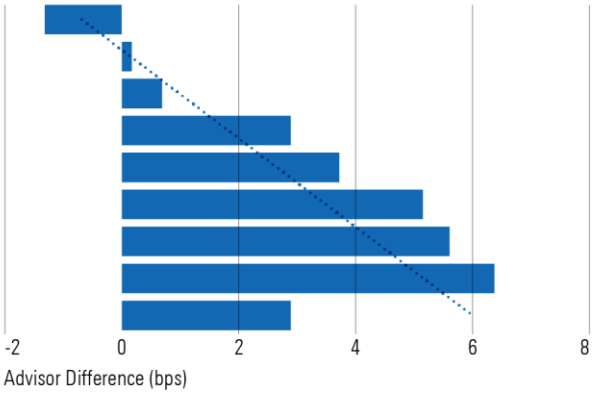
Panel A: Fund Ratings

Plan Assets	Star Rating	Quant Rating
$1 Mil-$5 Mil	0.0958	0.0772
$5 Mil-$10 Mil	0.0876	0.0304
$10 Mil-$25 Mil	0.0794	0.0277
$25 Mil-$50 Mil	0.0375	0.0175
$50 Mil-$100 Mil	0.0066	-0.0216
$100 Mil-$250 Mil	-0.0511	-0.0253
$250 Mil-$500 Mil	-0.0977	-0.0488
$500 Mil-$1 Bil	-0.0421	-0.0784
>= $1 Bil	-0.0523	-0.0901



Panel B: Net Expense Ratios

Plan Assets	Net Expense Ratio
$1 Mil-$5 Mil	-1.32
$5 Mil-$10 Mil	0.17
$10 Mil-$25 Mil	0.69
$25 Mil-$50 Mil	2.89
$50 Mil-$100 Mil	3.73
$100 Mil-$250 Mil	5.15
$250 Mil-$500 Mil	5.61
$500 Mil-$1 Bil	6.38
>= $1 Bil	2.89



Source: Morningstar Direct.

While larger plans tend to have higher-rated funds and lower expense ratios as noted previously, the advisor differential is effectively the opposite. For example, smaller plans that have an advisor tend to have higher-rated funds, whether the rating metric is the star rating or the quantitative rating.[14] The fund ratings for plans with advisors decline as plan assets increase. For the larger plans, the negative coefficients for the star rating were statistically significant while the quantitative ratings were not. One possible explanation of the effect in Panel A is that advisors for smaller plans may rely more on metrics created by third parties (such as Morningstar) while advisors for larger plans have their own internal processes for selecting funds. However, if the Morningstar ratings are perceived to be independent estimates of fund quality, the funds used by advisors in larger plans are clearly not as good as the funds used by advisors in smaller plans.

There is also a notable effect to fund net expense ratios. As a reminder, the expense ratios considered are reduced to the revenue share associated with the fund. While plans in the smallest asset group ($1 million to $5 million) with advisors tend to have lower-cost funds, as the plan size rises so do the higher expense ratios. For example, the funds in plans with assets from $500 million to $1 billion are 6.9 basis points higher than for plans without advisors. It is not clear why this effect occurs. While the future underperformance of higher asset plans with advisors was not statistically significant (Exhibit 12, Panel B), some of the underperformance from the larger plans could be coming from the higher expense ratios.

Putting it All Together

This research paper explored a variety of domains where an advisor could potentially add value, many of which extend beyond the performance-related metrics for the funds. While having "good" funds is obviously important, plan advisors do not usually have discretion over fund menus and thus there are arguably other domains that are more important when it comes to retirement outcomes (for example, getting employees to participate in the plan and use the default investment).

Exhibit 14 summarizes the results from each of the respective regressions conducted for the analysis. A value (positive or negative) is only included if the respective coefficient is statistically significant at the 5% level.

14 The correlation between the two metrics for the particular period is 0.557, so they are definitely related.

Exhibit 14 Summary of Advisor Differences by Test and Plan Asset Level

	Plan Assets								
	$1 Mil-$5 Mil	$5 Mil-$10 Mil	$10 Mil-$25 Mil	$25 Mil-$50 Mil	$50 Mil-$100 Mil	$100 Mil-$250 Mil	$250 Mil-$500 Mil	$500 Mil-$1 Bil	>=$1 Bil
Offer Default Investment	Positive	Positive	Positive	Positive	Not significant	Not significant	Not significant	Not significant	Not significant
% Assets in TDFs	Positive	Positive	Positive	Not significant	Not significant	Not significant	Not significant	Not significant	Not significant
Offer Auto Enrollment	Positive	Positive	Positive	Positive	Positive	Not significant	Negative	Negative	Negative
Plan Governance	Positive	Positive	Positive	Positive	Not significant	Not significant	Not significant	Not significant	Not significant
Employer Securities	Positive	Not significant	Positive	Positive	Not significant	Positive	Not significant	Positive	Positive
Fund Diversity									
All Funds	Positive	Positive	Positive	Positive	Not significant	Not significant	Not significant	Not significant	Not significant
TDF	Positive	Positive	Positive	Positive	Not significant	Not significant	Not significant	Not significant	Positive
Past Performance									
5 Year	Positive	Positive	Positive	Positive	Positive	Positive	Not significant	Not significant	Not significant
3 Year	Positive	Positive	Positive	Positive	Positive	Positive	Not significant	Not significant	Not significant
1 Year	Not significant	Negative	Negative	Negative	Negative	Not significant	Not significant	Not significant	Positive
Future Performance									
1 Year	Negative	Not significant	Positive	Not significant	Not significant	Not significant	Not significant	Positive	Not significant
3 Year	Positive	Positive	Positive	Positive	Not significant	Negative	Not significant	Not significant	Not significant
Morningstar Rating	Positive	Positive	Positive	Positive	Not significant	Negative	Negative	Negative	Not significant
Quant Analyst Rating	Positive	Positive	Positive	Positive	Negative	Not significant	Negative	Not significant	Not significant
Fund Expense Ratio	Positive	Not significant	Negative	Negative	Negative	Negative	Negative	Negative	Negative
Total	13	11	13	11	3	3	0	2	3
Total	1	1	2	2	3	3	4	3	2

Positive effect Effect not statistically significant Negative effect

Source: Morningstar Direct.

A number of the tests overlap (for example, offering a default investment and percentage of assets in target-date funds) and while some are definitely more important than others (for example, future performance versus historical performance), there is a clear effect where plans in the lowest four asset groups, from $1 million to $50 million, have positive values for the majority of the tests (that is, plans with advisors are doing better than plans without). For plans with assets of $50 million or greater, there is no notable difference in whether the plan has an advisor, be it positive or negative. While it is not possible to say that the advisor is the reason that smaller plans are "better," it does at least provide evidence that advisors are adding value, especially for smaller plans.

There are a variety of potential reasons why having an advisor does not appear to have as great an impact on larger plans. One is that larger plans are typically associated with larger employers, and larger employers are more likely to be able to hire staff specifically to operate the 401(k) plan. These employees would likely be aware of best practices and could likely ensure a plan is run more effectively than if it were simply one aspect of someone's job (for example, if it was one part of the many responsibilities for the one human resources employee at the company). Smaller plans may not have the same level of in-

house expertise and therefore rely more on the advisor (if the plan has one), which is driving the differences.

While the number of domains considered for this analysis is significantly greater than in past studies, which have primarily focused just on the investments, there are obviously other domains (not considered) where advisors can add value that should also be explored. For example, getting participants to save more for retirement is critical to retirement success. In addition, by suggesting a plan adopt automatic enrollment, a plan advisor can provide guidance on the optimal default savings level (which should be higher than 3%) and provide guidance on other features such as automatic savings escalation and doing a plan re-enrollment. Therefore, these findings should be viewed more as a first attempt to estimate the potential value of a plan advisor; hopefully other future research will consider additional domains.

Conclusions

In America today, 401(k) plans are perhaps the most important retirement savings vehicle available. Operating a "best-in-class" 401(k) requires a level of knowledge that many plan sponsors may not have. Therefore, hiring an advisor could potentially help the plan sponsor run a more effective 401(k) plan, which could improve the retirement outcomes for participants. Evidence on the impact of advisors is relatively limited, though, and past research done regarding the impact of advisors has typically been relatively narrow.

This is the first paper to move beyond more traditional investment-related metrics to try to understand whether advisors are helping plan sponsors run more effective 401(k) plans. While it is impossible to know the actual effect of the advisor, since the decision to hire an advisor may be endogenous to metrics considered, we can observe the differences in plans that have advisors and those that do not, and report accordingly.

The evidence suggests that advisors are helping smaller plan sponsors run better 401(k) plans. Hopefully, future research will explore this topic further, especially other domains not considered in this analysis. M

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Appendixes

Appendix 1 All Plans Probit Regression Results

	TDF%	Def_Inv	Auto	404c	NonERSec
ln (Assets)	0.009**	0.023***	0.105***	0.001	-0.015***
ln (Avg Bal)	-0.091***	-0.012***	-0.104***	-0.001	0.008***
Active%	0.001***	0.000	-0.002***	0.000	0.000***
Advisor					
$1 Mil-$5 Mil	0.035**	0.029***	0.064***	0.017***	0.009**
$5 Mil-$10 Mil	0.035***	0.036***	0.070***	0.011**	-0.002
$10 Mil-$25 Mil	0.021*	0.035***	0.072***	0.019***	0.003*
$25 Mil-$50 Mil	0.008	0.029***	0.079***	0.010*	0.008***
$50 Mil-$100 Mil	-0.002	0.020.	0.038*	-0.004	0.001
$100 Mil-$250 Mil	0.018	0.004	-0.015	-0.004	0.005**
$250 Mil-$500 Mil	0.014	-0.034	-0.082**	-0.013	-0.003
$500 Mil-$1 Bil	0.013	-0.055	-0.103**	0.013	0.008***
>=$1 Bil	-0.009	-0.052	-0.176***	0.001	0.007**

Source: Morningstar Direct.

Appendix 2 Fidelity Plans Probit Regression Results

	NonFido%	NonFidoTDF
ln (Assets)	0.067***	0.080***
ln (Avg Bal)	-0.028**	-0.054***
Active%	0.000	0.001
Advisor		
$1 Mil-$5 Mil	0.177***	0.187***
$5 Mil-$10 Mil	0.188***	0.191***
$10 Mil-$25 Mil	0.173***	0.187***
$25 Mil-$50 Mil	0.106***	0.107***
$50 Mil-$100 Mil	0.040	0.030
$100 Mil-$250 Mil	-0.006	-0.022
$250 Mil-$500 Mil	0.002	-0.077
$500 Mil-$1 Bil	0.082	0.073
>=$1 Bil	0.108	0.285**

Source: Morningstar Direct.

Appendix 3: Background on Morningstar Metrics

The Morningstar Rating for funds (or star rating) was introduced in 1985. It uses utility theory to provide a risk-adjusted assessment of a fund's historical performance. The star rating is purely quantitative and is not intended to convey the likelihood of future performance.

In contrast to the star rating, which is entirely quantitative and backward-looking, the Morningstar Analyst Ratings are a forward-looking assessment of a fund's expected ability to outperform its peer group (or a relevant benchmark) over a market cycle, after accounting for risk and expenses. The actual Morningstar Analyst Rating is assigned by a Morningstar analyst and is therefore both qualitative and quantitative in nature. Morningstar launched its analyst ratings in 2011 and the score is based on five "pillars," which are: Process, Performance, People, Parent, and Price.

For each pillar, an analyst assigns a rating of Positive, Neutral, or Negative. These pillar ratings are aggregated to an overall rating of Gold, Silver, Bronze, Neutral, or Negative. The higher the rating (for example, Gold versus Silver versus Neutral), the higher the analyst's conviction in a fund's ability to outperform.

Quantitative ratings were developed using a machine-learning model designed to replicate the decision-making processes of its analysts. Davidson et al. (2018) provide a comprehensive overview of the methodology for quantitative ratings. For consistency purposes we always use the Morningstar Quantitative Ratings even if an actual Morningstar Analyst Rating is available.

Appendix 4 All Plans Investment Ordinary Least Squared Regression Results

	Past			**Future**				
	5 Year	3 Year	1 Year	1 Year	3 Year	Morningstar Rating	Quant Rating	Net Exp Ratio
Intercept	0.936***	0.514	-0.06	0.200**	0.243	3.633***	2.372***	0.799***
ln (Assets)	-0.007***	0.001***	0.021***	0.005	0.011***	0.016***	0.059***	-0.017***
ln (Avg Bal)	-0.004	0.01	0.020***	0.029***	0.010***	-0.019***	-0.006*	0.002***
Active%	0.001***	0.001**	0	0	0.000*	0	0.000***	0.000*
Advisor								
$1 Mil-$5 Mil	0.053***	0.056***	0.02	-0.033*	0.047*	0.096***	0.077***	-0.013***
$5 Mil-$10 Mil	0.081***	0.068***	-0.055***	-0.001	0.046***	0.088***	0.030***	0.002
$10 Mil-$25 Mil	0.091***	0.068***	-0.064***	0.024*	0.039***	0.079***	0.028***	0.007***
$25 Mil-$50 Mil	0.064***	0.042***	-0.098***	-0.008	0.003***	0.038***	0.018*	0.029***
$50 Mil-$100 Mil	0.047***	0.043***	-0.059**	0.027	0.03	0.007	-0.020*	0.038***
$100 Mil-$250 Mil	0.030*	0.019***	-0.044	0.008	-0.029*	-0.051***	-0.024	0.052***
$250 Mil-$500 Mil	0.014	0.001	0.001	0.025	0.011	-0.097***	-0.047*	0.057***
$500 Mil-$1 Bil	-0.003	-0.048	-0.088	0.137*	0.044	-0.053**	-0.046	0.069***
>=$1 Bil	0.001	0.02	0.173*	-0.097	-0.02	-0.023	-0.072	0.051***
R^2	12.10%	10.20%	5.16%	5.19%	7.60%	7.07%	9.91%	19.26%
Adjusted R^2	12.09%	10.19%	5.16%	5.18%	7.59%	7.06%	9.90%	19.25%
Observations	456,008	464,927	475,853	459,562	439,589	452,048	454,728	468,345

Source: Morningstar Direct.

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