Do Mutual Fund Companies Eat Their Own Cooking?

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Abstract

We find that mutual fund companies offer mostly their own mutual funds in the 401k plans for their own employees. However, there are systematic differences between companies that rely on their own funds and companies that include outside funds. The companies that include outside funds tend to operate funds with high expense ratios. Outside funds in the 401k plans of mutual fund companies have significantly lower expense ratios and better governance scores than company's own funds. This evidence supports the claim that the interests of mutual fund companies are not perfectly aligned with the interests of their funds' shareholders. At the same time, we find that among the company's own funds, the funds selected for the company's 401k plan are almost indistinguishable from the rest of the funds offered by the mutual fund companies. Thus, it is not the case that within their own funds mutual fund companies favor their inexpensive funds. In fact, within the companies' own funds, participants (mutual fund company employees) gravitate towards higher cost and more actively managed funds. Thus, in one context (choosing to use outside funds) mutual fund companies favor cheap and better governed funds, in another context (choosing among its own funds) mutual fund companies favor actively managed expensive funds.

JEL Codes: G23, D14
Keywords: 401k plans, mutual fund companies, agency conflict

1. Introduction

Mutual fund companies are like restaurants, except instead of entrées, they sell mutual funds. Some, such as Vanguard, are cheap cafeterias offering all kinds of inexpensive cuisine – domestic, international, small cap, large cap. Others, such as Royce, are like fine dining restaurants offering only limited and expensive fare – in Royce's case it is small cap value. Continuing with the restaurant analogy, many customers buy mutual funds off the *menu* offered by their 401k plan. The purpose of this paper is to examine the 401k menus that mutual fund companies offer to their own employees, and how those employees go about ordering off of that menu. In short, we ask whether mutual fund companies (and their employees) eat their own cooking.

There are a number of reasons a mutual fund company may include its own funds in the 401k plan for its employees. First, the 401k savings of mutual fund company employees are a source of assets and, therefore, income. Given that there may be economies of scale when operating a mutual fund, additional assets may lower average costs (as in Collins and Mack 1997). Second, a mutual fund company and its employees may have more information about their own funds than about outside funds, thus reducing the information cost involved in selecting funds (as in Bailey, Kumar and Ng 2011). Finally, the mutual fund company may choose to include its own funds in its 401k to align employees' incentives with that of the mutual fund company – a similar rationale to including company stock.

There are also a number of reasons a mutual fund company may *not* include its own funds in its 401k. First, to the extent that employees' labor income is correlated with the performance of the employer's funds, the employees may want to diversify their savings to mutual funds of other companies. Second, if a mutual fund company does not offer a full spectrum of mutual funds, it may be desirable to include outside funds to provide adequate diversification for its employees. Finally, a mutual fund company and its employees may not view its own funds as desirable. It is well known that the interests of mutual fund companies are not completely aligned with the interests of the mutual fund shareholders (see e.g. Gaspar, Massa, Matos 2006; Chevalier and Ellison 1997). These agency issues may manifest themselves in the reluctance of mutual fund companies and their employees to hold their own funds.

We find that to a large extent, mutual fund companies use their own funds in their 401k plans. However, there are systematic differences between mutual fund companies that use only their own funds and companies that opt for outside funds. Specifically, mutual fund companies that operate expensive funds tend to opt for outside funds in their 401k plans. These outside funds have much lower expense ratios than funds offered by the mutual fund company itself. The results hold even when we control for specialization of mutual fund companies (measured as the number of fund categories offered). This evidence is consistent with agency conflicts on the part of the mutual fund companies.

In addition to examining the menu of investment options, we also examine how mutual fund company employees allocate their investments across these options. We find that within their own funds, employees gravitate towards more expensive funds. Given that mutual fund company employees are likely to be sophisticated, this pattern runs counter to the idea that mutual fund companies set up high cost funds to cater to unsophisticated and performance insensitive investors as in Christoffersen and Musto (2002). Our evidence shows that employees of mutual funds actually invest in the high cost and actively managed funds more than the general public.

This paper belongs to the literature that assesses conflicts of interest by comparing services that agents perform for themselves to the services that they perform for their clients. Levitt and Syverson (2008) show that real estate agents sell their own houses for more than they sell houses of comparable value for their clients. Domenighetti et al. (1993) find higher surgery rates among the general population than among physicians. In our paper, the 401k plans of mutual fund companies offer an environment where the agent (a mutual fund company) becomes the principal (a potential investor).

The paper is also related to the literature on mutual fund governance. Most of this literature studies the effect of the composition of the board of directors of mutual funds on mutual fund performance. Tufano and Sevick (1997) and Del Guercio, Dann, and Partch (2003) find that smaller boards and a high percentage of independent directors are associated with lower expense ratios. Khorana, Tufano and Wedge (2007) find that smaller and more independent boards are more likely to agree to mergers that are beneficial to shareholders. Using index funds Adams, Manski and Nishikawa (2009) find smaller boards are associated with better operational performance.

A number of papers examine the effect of ownership by managers and directors on fund performance. Chen, Goldstein, Jiang (2007) and Cremers et al (2009) find that the higher the ownership stake of the board of directors, the better the fund's performance. Similarly Khorana, Servaes and Wedge (2007) and Evans (2008) find that the more a portfolio manager owns in the fund that he/she manages, the better the performance. In contrast to these cross-sectional studies, the first panel data study by Hornstein and Hounsell (2012) shows that managerial investment is negatively related to performance. Rather than focusing on the effects of ownership of mutual funds, our paper looks for the determinants of ownership.

Finally, our paper contributes to the literature on the design of 401k plans. A number of papers find that funds offered in 401k plans are not up to snuff. Brown, Liang and Weisbenner (2007) find too many high-cost funds. Elton, Gruber, and Blake (2006) say that 401k menus don't provide adequate diversification. Pool, Sialm and Stefanescu (2013) find favoritism in plans whose trustees are mutual fund companies. By examining 401k plans of presumably highly sophisticated plan sponsors, we offer clues for optimal design. A companion paper to this one is Dvorak (2013) who compares plans of 401k advisors to the 401k plans of their clients. He finds that advisors hold funds similar to those of their clients, but clients tend to hold more expensive funds.

2. Data

2.1. Sample

We need two types of information: the characteristics of the mutual funds that the mutual fund company sponsors, and the characteristics of the 401k plans that the mutual fund company offers to its own employees. We obtain the characteristics of mutual funds and mutual fund families from the Morningstar's Principia database. The source of the data on 401k plans is Form 5500, which must be filed annually by all private pension plans. Plans with more than 100 participants are required to file detailed financial information, including the listing of assets. The listing of assets enables us to see which funds are held by the plan. The filings are available on the Department of Labor's website. We searched the filings for the names of the 100 largest mutual fund companies. Of those 100 companies, we found 40 usable filings. A large number of mutual fund companies have fewer than 100 participants and therefore do not file detailed financial information. In addition, some large mutual fund companies are missing from the database or do not list the schedule of assets. We focus on forms filed during 2011. These filings reflect the assets in the plan as of the end of 2010.

The listing of assets in Form 5500 includes names of mutual funds and the dollar values invested in each mutual fund. The names of funds are not standardized because every plan uses slightly different abbreviations for fund names. Therefore, we manually matched the fund names to fund tickers. In about 20% of cases, the name of the fund did not specify share class. Therefore, following Pool, Sialm and Stefanescu (2013) we conduct all of our analysis at the fund level rather than at the share class level. We calculate the characteristics of each fund as the asset weighted average of each share class. Doing our analysis at the fund level means that any differences between own funds and outside funds are driven by the differences in funds rather than by the differences in the classes of shares.

2.2. Fund family characteristics

The characteristics of the 40 mutual fund companies are in Panel A of Exhibit 1. On average, these companies manage 158 billion dollars of assets. This means that total assets of all 40 companies are nearly 6.5 trillion, more than half of all mutual fund assets reported by ICI (2011, Figure 1.1). Mutual fund assets are highly concentrated in a few very large companies. Even within our small sample, the average of 158 billion is considerably higher than the median assets of 48 billion. The chasm between large and small mutual fund companies is apparent even in our sample, where assets range from 2.3 billion for AQR Funds to 1.6 trillion managed by Vanguard. The average number of funds sponsored by a mutual fund company in our sample is 60. It ranges from 5 for Dodge and Cox to 336 for Fidelity. The mutual fund families also differ in the number of investment categories that they cover. We use Morningstar's category classification which – after consolidating the categories covering municipal bonds – includes 65 categories. On average, a mutual fund company in our sample covers 26 categories. Fidelity is the mutual fund supermarket, covering 62 categories. Dodge and Cox, with its five funds, covers only five categories.

The average of each company's average expense ratio is 0.97. When funds are weighted by assets, the average expense ratio drops slightly to 0.96 – very similar to the weighted average expense ratio of 0.95 reported by ICI (2011, Figure 5.1). Since expense ratios can vary across funds with different styles, we also report adjusted expense ratio calculated as the fund's expense ratio minus the average expense ratio in the fund's Morningstar category. The average turnover is 70 percent – it is slightly lower when weighted by fund assets. Once again, since turnover varies greatly across different categories of funds, we also report category adjusted turnover. We also calculate the average stewardship grade given to the fund by Morningstar. The stewardship grade reflects "the degree to which the management company's and fund board's interests are aligned with fund shareholders; and the degree to which shareholders can expect their interests to be protected from the potentially conflicting interests of the management company." Morningstar evaluates qualitative factors such as "board quality, manager incentives, fees, and corporate culture;" and assigns each fund a grade ranging from A (excellent) to F (failing). We translate these into a numerical scale of 4 (excellent) to 0 (failing). Unfortunately, the stewardship rating is available for only a limited number of funds. We are able to calculate an average stewardship grade for 24 of the 40 fund companies in our sample. The average unweighted stewardship grade is 2.5. As a measure of fund performance we use a fund's five-year performance rank within the fund's Morningstar category. The average percentile performance rank of the funds in our sample is 43. The rank could range from 1 (top performance) to 100 (worst performance), thus rank of 43 shows that that funds in our sample perform slightly better than funds not in our sample.

Exhibit 1 here

2.3 401k plan characteristics

The characteristics of the 401k plans of the 40 mutual fund companies are in Panel B of Exhibit 1. The average size of the plans is 606 million. The distribution is highly skewed, with the largest plan – Fidelity Investments – having assets of 8 billion. The average number of mutual funds in the plan is 49, considerably higher than 20, the average number of 401k investment options as reported by Deloitte (2010). The unweighted average expense ratio is

0.84, somewhat higher than 0.71 – the average expense ratio of a fund in a 401k plan according to ICI (2010). One reason that our expense ratio is higher is that we conduct the analysis at the fund level, averaging expense ratios across all share classes. Since 401k plans typically have a low expense ratio share class, conducting our analysis at the fund level may overstate the expense ratios. Interestingly, the weighted expense ratio is higher than the unweighted one, suggesting that mutual fund company employees tend to invest in high cost funds. The turnover ratio is 68 percent, and the average stewardship grade 2.7. Average performance rank is 39. Comparing panels A and B in Exhibit 1 we see that mutual funds in 401k plans appear less expensive, less actively managed, better governed and better performing than mutual funds offered by these companies to the public.

Exhibit 2 here

3. Analysis

3.1 Do mutual fund companies eat their own cooking?

We classify the assets held in 401k plans into five categories: company's own funds, outside funds (i.e. funds sponsored by other mutual fund companies), company stock, separately managed accounts, and self-directed brokerage accounts.[1] Exhibit 2 shows the shares of each of these categories for each of the 40 mutual fund companies in our sample. It shows that own funds make up most of the assets in mutual fund companies' 401k plans. Thus, mutual fund companies mostly eat their own cooking. However, more than half of the 40 mutual fund companies use outside funds in their 401k plans. Exhibit 3 summarizes this information in a table format. All 40 mutual fund companies in our sample use at least some of their own funds. The average share of own funds in total assets is 66%. If we consider only mutual fund assets (i.e. ignoring company stock, separately managed accounts and self-directed

[1] We ignore participant loans and subtract them from total assets. In the case of TIAA-CREF we classified their variable annuities as mutual funds.

brokerage), the average share of own funds in mutual fund assets rises to 75%. Among the 27 companies with outside funds, the share of outside funds in total assets is 28%.

Exhibit 3 here

3.2 What determines whether a mutual fund company uses outside funds in its 401k plan?

We ask whether there are systematic differences between mutual fund companies that rely only on their own mutual funds and companies that opt for outside funds. One hypothesis is that some mutual fund companies specialize in certain categories of funds (e.g. small cap). The fewer the number of categories a mutual fund company covers with their own funds the more likely it is to use outside funds. After all, we don't expect the employees in a Chinese restaurant to eat Chinese cuisine seven days a week. Similarly, we hypothesize that smaller companies are more likely to include outside funds for diversification purposes. A different hypothesis is that mutual fund companies that specialize in actively managed funds may opt for passive outside funds in their 401k menu. Thus, we ask if average adjusted turnover of own funds predicts whether or not a mutual company uses outside funds in its 401k plan. Finally, we ask whether the adjusted expense ratios and the performance of own funds drive the use of outside funds.

Exhibit 4 here

We estimate a set of probit regressions where the dependent variable equals one if the mutual fund company uses outside funds. The independent variables are the number of Morningstar categories offered by the company; company's assets; average adjusted turnover; the average adjusted expense ratio; and performance rank of its own funds. The results in Exhibit 4 indicate that the adjusted expense ratio of a company's own funds is the strongest predictor of the use of outside funds. The higher the expense ratio of the company's own funds, the more likely the company is to use outside funds. In bivariate regressions the number of categories a fund company offers is negatively related to the use of outside funds. However, the effect disappears once we control for total assets, average turnover and average adjusted expense ratio of own funds. The effect of own expense ratio on the probability of using outside funds is economically significant: a ten basis points increase in own funds' expense ratio is associated with a 21 percentage point increase in the probability of using outside funds. The significance of average adjusted expense ratio remains even when we control for the number of categories offered by the company, company assets, and average adjusted turnover. Thus, the cost of own funds is the primary driver of the use of outside funds.[2]

3.3 Do outside funds in the plan differ from own funds?

If mutual fund companies supplement their 401k menu with outside funds to fill in gaps in their own lineup, then the outside funds should be from different categories than those of funds offered by the company. We calculate the percentage of outside funds that are in the same Morningstar category as a fund offered by the company. This percentage measures the overlap between the outside funds and the funds offered by the company. The average value of this percentage for the 27 mutual fund companies that use outside funds is 58%. It ranges from zero (no overlap) to one (complete overlap). In summary, there is considerable overlap between the categories of outside funds and the funds that the company offers.

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[2] We also examine whether the stewardship grade of a company's mutual funds predicts whether they use outside funds. However, since we have the stewardship grade for only 24 companies we chose not to include the results in Exhibit 4. Using 24 observations, the coefficient on Morningstar's stewardship grade in a probit regression where the dependent variable is whether or not a company uses outside funds is negative with a z-statistic of -1.2.

Perhaps mutual fund companies are looking for other characteristics in outside funds. Therefore, we examine whether the characteristics of outside funds differ from own funds in the plan as shown in Exhibit 5. The result that stands out is that the outside funds have significantly lower expense ratios than the own funds in the plan. The difference is statistically significant and quite substantial in magnitude – outside funds are more than 50 basis points cheaper than own funds. The difference remains even when we look at adjusted expense ratios. Outside funds also appear to have lower turnover, although the effect is statistically significant only at the 10 percent level and not at all when funds are weighted by assets. The average performance rank of outside funds is slightly better than that of own funds, although the effect is statistically significant only at the 10 percent level. Moreover, the significance disappears when we weigh funds by assets. The governance rating of outside funds is better than that of own funds. This result is statistically significant and robust to whether or not we use weighted or unweighted averages. In summary, it appears that outside funds are much cheaper, somewhat less actively managed, and better governed.

Exhibit 5 here

3.4. Do own funds in the plan differ from the rest of the funds in the family?

On average, only about half of the funds sponsored by a mutual fund company are offered in the company's 401k plan. In this section we consider whether the characteristics of own funds in the plan differ from the characteristics of all the funds in the family. In Panel A of Exhibit 6 we show the unweighted differences. It appears that own funds in the plan are very similar to all funds in the family. The only difference that is statistically significant, and then only at the 10 percent level, is that own funds in the plan have higher expense ratios than all plans in the family. The effect is tiny in magnitude – own funds in the plan have an average expense ratio of 3 basis points higher.

Exhibit 6 here

In Panel B of Exhibit 6 we compute the characteristics for each family by weighting each fund by assets invested in that fund. These asset weighted characteristics reflect not just the design of the 401k menu, but also how employees allocate their assets within their 401k plan, and how other investors allocate assets across each family's funds.[3] The results show that employees of mutual fund companies lean towards more expensive and more actively managed funds. The weighted expense ratio of own funds in the plan is *higher* than the weighted expense ratio of all funds in the family. The difference is about eight basis points and is statistically significant. This is true for both the raw expense ratio and the adjusted expense ratio. We see a similar pattern when comparing the weighted turnover ratios. The weighted turnover ratios of own funds in the plan is higher than the weighted turnover ratio of all funds in the family, although the difference is statistically significant only when we use the adjusted turnover ratio. There is no statistically significant difference between performance of own funds in the plan and all funds in the family. Thus, it does not appear that the funds that the employees had selected have outperformed the rest of the funds in the family. In summary, this pattern suggests that when it comes to its own funds, the employees of a mutual fund company show a greater preference for more expensive and actively managed funds than the general public. [4]

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[3] The values of assets in each fund in a 401k plan are likely to be driven by older and higher income participants. Therefore, asset weighted characteristics of 401k plans do not necessarily reflect allocations by a typical investor. Similarly, asset weighted characteristics of fund families may not reflect allocations by a typical fund investor since behavior of large investors is likely to drive relative asset values in each fund.

[4] We explored the possibility that this is driven by automatic enrollment into a high cost actively managed default fund. We were able to identify the default funds for four plans in our sample. In each case the default option did not have higher expense ratio or turnover than the average family characteristics. The default options are subject to intense scrutiny by the

4. Conclusion

We find that mutual fund companies mostly prefer their own cuisine. When they opt for meals from someone else's kitchen, they are often something that their own cook does not make (i.e. a fund in a Morningstar category not offered by the mutual fund company), but it is always very light fare (i.e. has a very low expense ratio). Mutual fund companies with high average expense ratios of their own funds are the most likely to opt for funds from other companies. However, within their own funds, employees gravitate towards more expensive and more actively managed funds.

The evidence on agency conflicts of mutual fund companies is mixed. On the one hand, the fact that high cost fund companies opt for outside funds in their 401k plans suggests agency problems. It is true that some high cost mutual fund companies specialize in certain asset classes and thus have the need to offer outside funds to their employees. Yet, even when we control for the number of categories a mutual fund company offers, the cost of company's own funds remains a significant predictor of the use of outside funds. The biggest difference between own funds in the plan and outside funds is cost and governance scores – outside funds are cheaper and better governed. On the other hand, the fact that within their own funds employees gravitate towards more expensive and actively managed funds does not support the idea that high cost funds cater to unsophisticated and performance insensitive investors as in Christoffersen and Musto (2002) or Gil-Bazo and Ruiz-Verdu (2009).

American households increasingly rely on 401k plans to fund their retirement. How mutual fund companies design their own 401k plans is of particular interest because mutual

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Department of Labor. Therefore, it is unlikely that any 401k plan sponsor would default participants into a high cost fund. Another possibility is that the result is driven by highly compensated active managers investing in their own actively managed funds. Their large investments could be responsible for tilting the aggregate asset allocations towards actively managed funds.

fund companies and their employees should be highly informed and sophisticated in designing and investing in their 401k plan. Numerous studies show (see e.g. Carhart 1997, or Fama and French, 2010) that costs are a primary determinant of mutual fund performance. Our results show that mutual fund companies indeed pay attention to costs in the design of their 401k plans. When their own funds are too expensive, they opt to include inexpensive alternatives. The rest of the 401k plan universe should take a cue.

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Exhibit 1: Descriptive Statistics

The sample includes 40 mutual fund companies. Number of funds is the number of funds (not counting different classes of shares) sponsored by the company. The categories are Morningstar categories with municipal bond categories consolidated into one. Expense ratio is the audited expense ratio in percent. Turnover is annual turnover in percent. Adjusted expense and turnover ratios are deviations from average expense ratio and turnover in the fund's Morningstar category. Stewardship grade is given by Morningstar and is available for only 24 of the 40 companies. Performance rank is the five-year performance rank of each fund in its Morningstar category. All characteristics are as of December 2010.

Panel A: Characteristics of Mutual Fund Families

	mean	median	st. dev.	min	max
total assets (in billions)	158	48	342	2.3	1665
# of funds	60	49	57	5	336
# of fund categories	26	24	14	5	65
average expense ratio	0.97	1	0.32	0.2	1.6
average expense ratio (weighted)	0.96	1	0.28	0.16	1.4
average adjusted expense ratio	0.26	0.31	0.26	-0.39	0.77
average turnover	70	58	38	16	226
average turnover (weighted)	64	50	45	16	244
average adjusted turnover	9	1.5	38	-66	157
average stewardship grade	2.5	2.3	0.61	1.8	4
average performance rank in category	43	42	11	22	70
average performance rank in category (weighted)	36	36	12	13	58

Panel B: Characteristics of 401k plans of Mutual Fund Companies

	mean	median	st. dev.	min	max
total assets (in millions)	606	186	1338	10	8078
# of funds	49	44	28	6	171
# of fund categories	23	22	10	5	62
average expense ratio	0.84	0.88	0.3	0.16	1.4
average expense ratio (weighted)	0.90	0.95	0.32	0.21	1.5
average adjusted expense ratio	0.18	0.18	0.24	-0.37	0.60
average turnover	68	62	38	16	237
average turnover (weighted)	67	56	39	15	222
average adjusted turnover	5.2	2.1	39	-66	172
average stewardship grade	2.7	2.9	0.52	1.8	4
average performance rank in category	39	38	9.6	22	60
average performance rank in category (weighted)	37	36	11.0	20	66

Exhibit 2: Share of different types of assets in 401k plans of mutual fund companies.

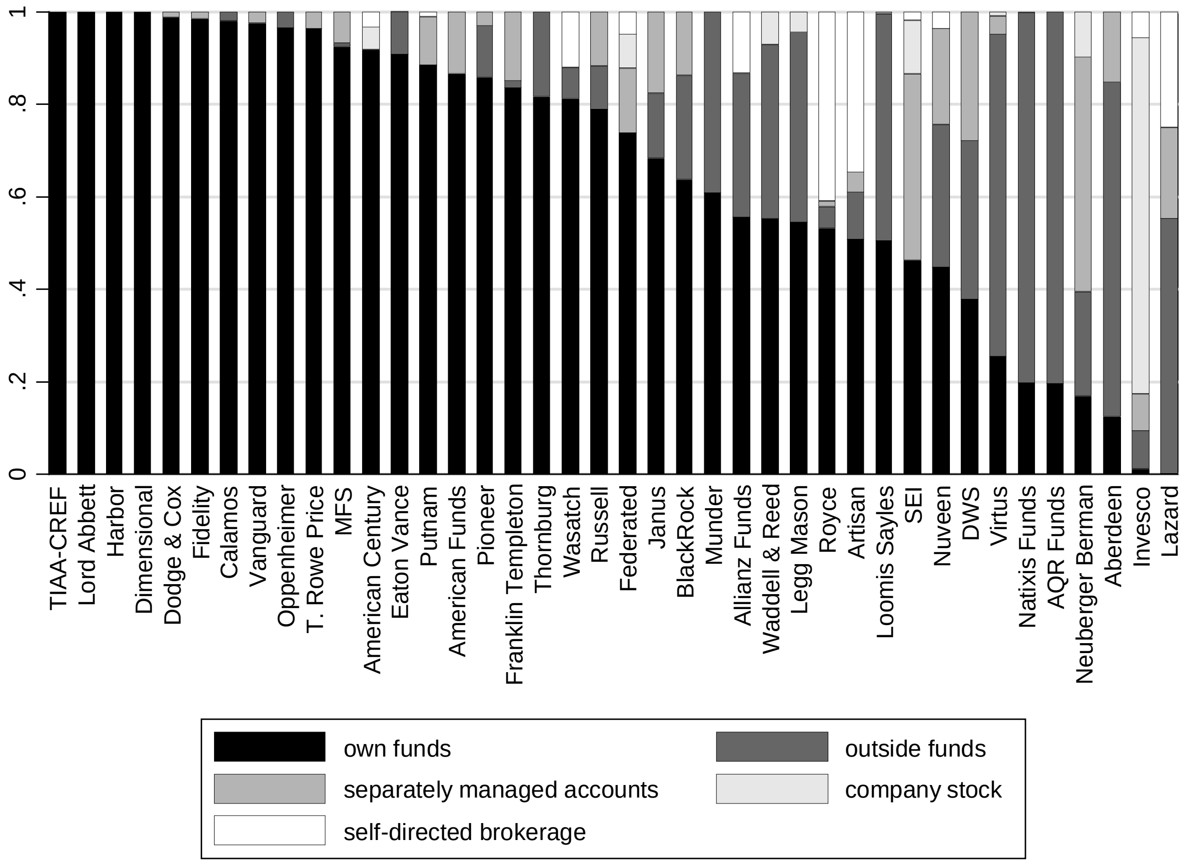

Exhibit 3: What do mutual fund companies hold in their 401k plans

The first column shows the number of plans that have at least some assets indicated in the row heading. The descriptive statistics are calculated using only plans that have at least some assets indicated in the row heading.

		Share of in total assets			
	number of plans	mean	median	min	max
Own Funds	40	0.66	0.76	0.00	1.00
Outside Funds	27	0.28	0.23	0.01	0.80
Separately Managed Accounts	28	0.14	0.09	0.00	0.94
Company Stock	9	0.14	0.07	0.01	0.77
Self-directed Brokerage	11	0.13	0.06	0.01	0.41

Exhibit 4: What determines whether a mutual fund company uses outside funds

The table reports marginal effects from a probit regression where the dependent variable equals one if the mutual fund company has outside funds in its 401k plan. Number of fund categories offered is the number of Morningstar categories available in each fund family. Adjusted expense and turnover ratios are deviations from average expense ratio and turnover in the fund's Morningstar category. Performance rank is the five-year performance rank of each fund in its Morningstar category. The number of observations is 40. Z-statistics are in parentheses. ***, ** and * indicate significance at the 1, 5, and 10 percent levels.

	(1)	(2)	(3)	(4)	(5)	(6)
Number of fund categories offered	-0.01**					-0.01
	(-2.12)					(-1.38)
Net assets of the mutual fund family		-0.00				-0.00
		(-1.48)				(-0.59)
Average adjusted turnover of own funds			0.00			0.00
			(0.62)			(1.23)
Average adjusted expense ratio of own funds				1.33***		2.12***
				(3.38)		(2.44)
Average performance rank in category					-0.01	-0.02
					(-0.92)	(-1.57)

Exhibit 5: Do outside funds in the plan differ from own funds?

The sample includes 27 mutual fund companies that include at least some outside funds in their 401k plan. Expense ratio is the audited expense ratio in percent. Turnover is annual turnover in percent. Adjusted expense and turnover ratios are deviations from average expense ratio and turnover in fund's Morningstar category. Performance rank is the five-year performance rank of each fund in its Morningstar category. Governance is the Morningstar Stewardship grade (A=4… F=0) ***, ** and * indicate significance at the 1, 5, and 10 percent levels.

Panel A: Own funds versus outside funds, unweighted averages

	# of plans	own funds in the plan	outside funds in the plan	own funds minus outside funds	own funds minus outside funds t-stat
Expense ratio	27	1.14	0.61	0.52	6.58***
Adj. expense ratio	27	0.37	0.01	0.35	5.83***
Turnover	27	87	53	34	2.00*
Adj. turnover	27	21.31	-8.61	29.92	1.90*
Performance rank	25	40.2	34.3	5.71	1.84*
Governance	11	2.31	2.83	-0.52	-2.60**

Panel B: Own funds versus outside funds, asset weighted averages

	# of plans	own funds in the plan	outside funds in the plan	own funds minus outside funds	own funds minus outside funds t-stat
Expense ratio	27	1.17	0.58	0.59	7.56***
Adj. expense ratio	27	0.36	-0.04	0.40	6.67***
Turnover	27	78	58	20	1.05
Adj. turnover	27	13.56	-3.58	17.15	1.32
Performance rank	25	37.9	33.0	4.3	1.23
Governance	11	2.40	3.00	-0.61	-3.05**

Exhibit 6: Do own funds in the plan differ from the rest of the funds in the family?

The sample includes 40 mutual fund companies. Expense ratio is the audited expense ratio in percent. Turnover is annual turnover in percent. Adjusted expense and turnover ratios are deviations from average expense ratio and turnover in fund's Morningstar category. Performance rank is the five-year performance rank of each fund in its Morningstar category. Governance is the Morningstar Stewardship grade (A=4, …, F=0) ***, ** and * indicate significance at the 1, 5, and 10 percent levels.

Panel A: Own funds in the plan versus all funds in the family, unweighted averages

	# of plans	own funds in the plan	all funds in the family	own funds minus all funds in the family	own funds minus all funds t-stat
Expense ratio	40	1.00	0.97	0.03	1.72*
Adjusted expense ratio	40	0.27	0.26	0.02	1.00
Turnover	40	81	70	12.00	1.35
Adjusted turnover	40	16.3	8.9	7.4	0.90
Performance rank	40	41.1	42.6	-1.4	0.93
Governance	24	2.50	2.47	0.03	1.04

Panel B: Own funds in the plan versus all funds in the family, asset-weighted averages

	# of plans	own funds in the plan	all funds in the family	own funds minus all funds in the family	own funds minus all funds t-stat
Expense ratio	40	1.04	0.96	0.08	3.59***
Adjusted expense ratio	40	0.27	0.19	0.08	3.89***
Turnover	40	74	64	9.90	1.50
Adjusted turnover	40	12.3	-6.5	18.8	3.02***
Performance rank	40	38.3	36.5	2.2	1.36
Governance	24	2.57	2.60	-0.03	-1.03