Internet Appendix for

Attracting Flows by Attracting Big Clients

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This appendix contains supplemental institutional detail, additional analyses, and results further exploring the trustee relationship and its effect on mutual fund portfolio choice. It is organized into two sections. Section I examines further regularities in the trustee overweighting. Section II delves into the timing of the trustee overweighting.

I Further Explorations of Trustee Overweighting

In this section we provide further subsample evidence and varying specification tests of the trustee overweighting. We first show the fund overweighting in a univariate setting, and then use a regression framework similar to that of Table II in the paper to explore other factors that may drive mutual fund portfolio choices.

A Univariate Measures of Trustee Overweighting

Because overweighting can be measured using different metrics (each with shortcomings), we test for a variety of univariate holdings measures of the sponsor firm in Table AI. The first is the market value of the sponsor firm in the fund family's portfolio. In Panel A of Table AI, for each sponsor firm, we compare the average holdings of its trustee family relative to all other mutual fund families. The trustee holds on average $188 million of the sponsor firm's stock in its

portfolio, whereas all other fund families hold only an average of $24 million of the same firm's stock ($t = 11.25$ for the difference). As a percentage of shares outstanding of the trustee firm (*% Shares*), the trustee holds on average 2.19% while all other fund families hold on average only 0.78% ($t = 20.72$ for the difference)[1]. This is about three times larger a holding by trustees. The difference, though, may be driven by the fact that trustees are larger fund families on average (see Table I in the paper) and hold more in absolute terms of every stock than non-trustee fund families. To control for this difference in family size, we look at the average holding of the sponsor firm stock as a percentage of the total net assets of the fund family. Again, we see that trustees significantly overweight the sponsor firm relative to all other fund families in terms of *% TNA*.

The last two univariate overweighting measures we examine attempt to match the 401(k) sponsor firm to similar firms, and then test whether the trustee is simply overweighting a specific type of firm (e.g., auto firms) or whether there is something special about the trustee relationship. The two measures of similarity we use are industry and characteristic style, based on size-book to market-momentum categories (Daniel et al. (1997)). For each sponsor firm, we compute the difference between the trustee's investment in that firm and the trustee's average investment in the matched group of similar firms. We aggregate across trustees to get a time series of differences. Panel B of Table AI reports the average of these differences in terms of both *% Shares* and *% TNA*. In both cases (industry and style), trustee families significantly overweight the sponsor firm relative to even this group of similar firms. The magnitude and significance in terms of *% TNA* of the family is almost identical to Panel A. In terms of *% Shares*, the overweighting is highly significant relative to both similar groups ($t = 15.11$ and $t = 16.66$), with the magnitude about half of that in Panel A, still implying an overweighting of roughly $41 million relative to the sponsor's industry and $38 million relative to the sponsor firm's characteristic style.

B Trustee Overweighting Regressions

We now move to a regression framework similar to Table II in the paper. Our unit of observation is a family-holding-quarter, so family f's holdings of company c in the third quarter of 1998 represent one observation. We use the same independent variables described in Table II of the paper. We again include quarter fixed effects in our pooled specifications, and we cluster standard errors at the firm level. In addition to the pooled specification, though, we now also run the regressions using a Fama and MacBeth (1973) type approach, running cross-sectional regressions each quarter and reporting the time series average of the regression coefficients. The results are shown in Table AII. Column 1 shows the baseline pooled specification not including fixed effects, while Column 2 is this same specification including fixed effects (same as Column 1 in Table II for comparison). In Column 3, estimates were obtained using the Fama-MacBeth approach, with standard errors corrected for autocorrelation using the Newey-West estimator with four lags. As can be seen, all three columns yield very similar coefficient estimates on *Trustee* in terms of magnitude and significance, and they are similar to the other estimates on *Trustee* reported in Table II of the paper. In comparing them, the Fama-MacBeth approach of Column 3 actually implies a trustee overweighting of $e^{0.430} - 1 = 53.7\%$ ($t = 4.06$), relative to a baseline estimate of 46.9% using the pooled regression approach reported in the paper. Last, to get an idea of whether this effect is concentrated in a specific group of the firms, we perform an additional test. In Columns 4 and 5, we run separate tests on two subgroups of trustees: those with the highest market share (top five in terms of market share) in Column 4, and all other trustees in Column 5. This tests whether the trustee overweighting is present only in our top market share trustees, or is pervasive throughout the trustee-sponsor firm sample. From Columns 4 and 5 of Table AII, we see that the coefficient on *Trustee* is nearly identical across the two subsamples, implying that the effect is not concentrated in the top market share trustees. In fact, the point estimate is actually larger (although not

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significantly so) outside the top market share trustees. These different estimation techniques and subsamples provide further evidence that the trustee overweighting effect we document is large, significant, and robust across the universe of trustees and firms.

II Timing of Trustee Overweighting

A Trustee Changes

In this section, we examine in greater depth the timing of the trustee overweighting. Specifically, we examine the change in shares of the sponsor firm held by the trustee surrounding the beginning (ending) of the trustee-sponsor relationship. The caveat with this is that (as we mention in the paper) changes in trustee occur rarely in actual data. We observe only 58 trustee changes in our sample, and thus we lack power in specifying these tests. Keeping this in mind, we use two different regression specifications to explore the change in behavior. The first, in the first two columns of Table AIII, Panel A, involves breaking up the overweighting effect to estimate separately responses to beginning and ending trusteeship. The dependent variable here is *Log(Change)* = $\log(shares(f, s, t)/shares(f, s, t-1))$ and measures the percentage change in family f's holdings of stock s from quarter $t-1$ to t. In addition to the usual controls for firm and family characteristics, we present two explanatory variables: $Beginning1Year(f, s, t)$ is a categorical variable that is 1 if family f began being the trustee of company s in the year to which quarter t belongs, and zero otherwise. Similarly, $Ending1Year(f, s, t)$ is 1 for the quarters in the year when the trustee relationship between f and s ended, and zero otherwise. The variables $Beginning2Years$ and $Ending2Years$ are constructed in a similar manner except that they are 1 for the year the trustee changed and the year after.

From Columns 1 and 2, the effects go in the expected directions. In Column 1, where the dummies represent the year of the change, the signs go in the right direction, but the estimates are not significant. In Column 2, we allow the period dummy to be the year of trustee change and

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the following year. *Beginning* implies that the new trustee significantly increases the percentage of shares held in the sponsor firm by roughly 6.4% ($e^{0.062}-1$) ($t = 2.52$), and *Ending* suggests that the opposite occurs. Funds ending the trustee relationship decrease the amount invested in the sponsor firm by 3.4% ($e^{-0.035} - 1$) in the two years following the trustee change. This *Ending* coefficient is not, however, significant. These results combined suggest that families steadily increase their position in the sponsor stock in the year of and year after they become the trustee, but that they revert this position more rapidly (within the year) when they end being the trustee.

Columns 3 and 4 of Panel A then test the level implication of these results. The regressions are pooled and include only those observations that have changed (or will change at some point during the sample) trustees. The variable *Ex/Fut Trustee* is a categorical variable equal to 1 in the two years before and after a trustee relationship, and zero during the relationship. The coefficient then measures how much more (or less) the trustee weights in the sponsor firm when it lacks a trustee relationship. The negative and significant coefficients ($t = -2.18$ and -2.05) suggest that the trustees hold significantly less (roughly 35% less) of the same sponsor firm when the two are not in a trustee relationship relative to when they are.

B   Cross-sectional Comparisons

In order to get more insight into the evolution of the trustee relation, we attempt to identify the timing of the trustee overweighting. As we see changes in trustee only at the yearly frequency, it is difficult to use time series variation at a finer level than (year before-year after) changes. So, here we take a different approach and instead exploit cross-sectional changes in weighting between the eventually named trustee and other potential "competitor" trustees. The advantage of fund level data is then that we can compare funds that become trustee funds to similar funds that do not become trustee funds. To identify potential competitor funds, we first use only other fund families that are in the trustee sample. We then create 125 style categories based on a triple

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sort (size-BM-momentum), as in Daniel et al. 1997, and assign each fund to a style category based on the value-weighted average of its holdings. We compare the holdings of the funds that eventually do become trustees (*Trustees*) to all other funds in its style category (*Comparable*) in three periods: the year before, during, and after the trustee change is undertaken. The results of this comparison are in Panel B of Table AIII. We find strong results when a firm ends being trustee. In the year before this, there is a significant difference between trustee and comparable funds in holdings of the sponsor firm stock of .065 percent of shares outstanding (t=2.51) (at the fund level). This difference decreases, but remains significant, during the year of the trustee change, at .048 (t=2.03). By the year following the ending of the trustee relationship, however, there is almost no difference in holdings between the now ex-trustee and comparable mutual funds (.019 difference (t=1.34)). So, we see a large drop in trustee holding of the sponsor firm's stock after the sponsor firm ends the relationship with the trustee. As a result, the trustee holdings of the sponsor firm are statistically indistinguishable from comparable funds.

For the initiation of the trustee relationship, the results are a little more difficult to interpret. We do see the trustee overweight relative to comparable firms by roughly the same magnitude (.049 and .046) and significance in the year before and after the trustee initiation. The interesting variation seems to be happening in the year of the trustee initiation. In that year, we see the eventual trustee funds increasing their weighting in the sponsor stock, whereas the comparable funds decrease their weights. This results in a large and highly significant difference in weighting in the initiation year of .082 (t=3.62). In the year following the naming of the new trustee, however, we see that the trustee funds unwind the "extra" overweighting, ending up with the same overweighting relative to comparable funds as the year before. Although we cannot pinpoint exactly what this says about a negotiation between sponsor firm and trustee, this is consistent an explanation that the trustee fund overweights most heavily in the year in which the trusteeship is initiated (and potentially the

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year the decision is made), and then reduces the large overweighting somewhat, but not entirely, since the trustee still significantly overweights the sponsor firm (i) in the year following the trustee initiation and (ii) even in the year before the trustee relation ends.

Table AI: Univariate Trustee Overweighting Measures

Panel A: This panel presents the univariate statistics for various measures of holdings. *MV Hold* is the market value of the family's holdings of the stock at each quarter. *% TNA* is the market value of the holdings divided by the Total Net Assets of the family (equity positions only). *% Company* is the number of shares held as a percentage of the number of shares outstanding. In each case, for each quarter and each stock we average the measure across families separately for trustees and non-trustees. Then, we average across stocks. The panel then presents the statistics of the time series of averages. *Newey-West T-stat* is the t-statistic for the difference using Newey-West standard errors with a four-period lag. Panel B: This panel presents measures of the trustee's holdings of the sponsor firm's stock relative to a matched group of similar firms. The two categories of similar firms are based on (i) industry and (ii) characteristic style (computed following Daniel et al. (1997)). For each sponsor firm, we compute the difference between the trustee's holdings in the sponsor firm's stock and the trustee's average holdings of the matched group of similar firms. We aggregate this across all sponsor firms for each quarter, and then take the time series average of this difference to compute the statistics below. *Sponsor - Industry* is the difference between the trustee's holdings of the sponsor firm's stock and average holdings of all other firms' stocks in the same industry, while *Sponsor - Style* is the difference between the trustee's holdings of the sponsor firm's stock and average holdings of all other firms' stock in the same characteristic style. *Newey-West T-stat* is the t-statistic for the difference adjusted using the Newey-West procedure with a four-period lag.

Panel A: Trustees vs. Non-trustees

Variable	Trustees	Non-Trustees	Difference	Newey-West T-stat
MV Hold ($ millions)	188	24	164	11.25
% TNA	0.168	0.092	0.076	3.57
% Company	2.19	0.78	1.41	20.72

Panel B: Sponsor Firm vs. Matched Group of Similar Firms

Variable	Sponsor - Industry	NW T-stat	Sponsor - Style	NW T-stat
% TNA	0.070	3.92	0.074	3.65
% Company	0.66	15.11	0.62	16.66

Table AII: Trustee Overweighting Regressions

The dependent variable in each regression is the logarithm of the percentage of the shares outstanding of a firm owned by a given mutual fund family, *log(% Shares)*. With the exception of Column 3, all regressions are pooled, with standard errors clustered at the firm level (in parentheses). Quarter fixed effects are included where indicated. Column 3 estimates were computed using an approach similar to Fama and MacBeth (1973). Standard errors in Column 3 were calculated using the Newey-West estimator with four lags. In Columns 4 and 5 we split our trustee sample into two groups according to plan assets under management. In Column 4, only families that are either never a trustee (control families) or families that are among our top five trustees (in terms of plan assets under management) are included. In Column 5, only control families and families that are not among our top five trustees are included. The independent variable of interest in the regressions is *Trustee*, a categorical variable equal to 1 if the given mutual fund is the trustee for the given firm, and zero otherwise. Also included in the regressions are the logarithms of the firm characteristics of market equity and book-to-market, *ME* and *BM*, and the firm's weight in the CRSP value-weighted market portfolio, *Market Weight. Past Returns* are included, which are the previous 11 months of returns for the firm (excluding last month). The mutual fund family characteristic of the logarithm of total net assets, *TNA*, is included. Additional fund family characteristics of percentage invested in the industry of the stock being considered, *% in Ind*, and percentage invested in the style of the stock being considered (computed following Daniel et al. (1997)), *% in Style*, are included. The sample period is 1993 to 2003. All regressions include an intercept (not reported).

	(1)	(2)	(3)	(4)	(5)
Trustee	0.466***	0.385***	0.430***	0.306***	0.369***
	(0.056)	(0.056)	(0.060)	(0.088)	(0.073)
ME	−0.262***	−0.202***	−0.220***	−0.228***	−0.287***
	(0.012)	(0.011)	(0.029)	(0.012)	(0.012)
BM	0.052**	0.021	0.035**	0.020	0.062**
	(0.026)	(0.026)	(0.014)	(0.026)	(0.025)
TNA	0.709***	0.817***	0.816***	0.799***	0.790***
	(0.008)	(0.009)	(0.011)	(0.009)	(0.010)
Past Returns (×100)	0.055***	0.071***	0.100***	0.077***	0.075***
	(0.014)	(0.012)	(0.030)	(0.013)	(0.013)
% in Style	0.027***	0.022***	0.025***	0.022***	0.029***
	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)
% in Ind	0.028***	0.028***	0.031***	0.030***	0.038***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Market Weight	0.533***	0.237***	0.328***	0.304***	0.119*
	(0.103)	(0.067)	(0.063)	(0.071)	(0.066)
Quarter Fixed Effects	No	Yes	-	Yes	Yes
R-squared	0.23	0.26	0.26	0.23	0.28
Observations	1,715,610	1,715,610	44	1,617,800	1,085,907

*,**,*** denote significance at the 90%, 95% and 99% level, respectively.

Table AIII: Timing of Trustee Overweighting

The sample period is 1993 to 2003. Panel A: All regressions are pooled with quarter fixed effects and standard errors clustered at the firm level (in parentheses). In Columns 1 and 2, the dependent variable is the logarithm of the fraction *(shares(t)/shares(t-1))* held by the given family. In Column 3 and Column 4, the dependent variables are the logarithm of the percentage of shares outstanding and the logarithm of the family TNA, respectively. *Beginning (1 Year)* is a categorical variable equal to 1 if the mutual fund family began as a trustee of the given firm within the past year, and zero otherwise. *Ending (1 Year)* is a categorical variable equal to 1 if the mutual fund family ended as a trustee of the given firm within the past year, and zero otherwise. *Beginning (2 Year)* and *Ending (2 Year)* are similarly defined, but for periods of two years instead of one year. *Trustee* is a categorical variable equal to 1 if the given mutual fund is the trustee for the given firm, and 0 otherwise. *Ex/Fut Trustee*, is a categorical variable equal to 1 for the two years before and after the trustee-sponsor firm relationship, and 0 during the relationship. All regressions include an intercept and the controls *ME*, *BM*, *Past Returns*, *TNA*, *% in Ind*, *% in Style*, and *Market Weight*, all described in Table A2 (not reported). Panel B: This panel presents the overweighting around trustee changes at the fund level. It compares the holdings of trustee funds to those of similar non-trustee funds around times of trustee changes. For each trustee change, we compare the changes in holdings of trustees to those of similar non-trustee funds. Each trustee fund is matched to a comparable fund in the earliest available quarter of the year before the trustee change, and this same match is kept until the year after the change. We match funds using characteristics similar to Daniel et al. (1997). For each trustee fund, we select the non-trustee fund in the same category that is closest in size. We show the results for funds of families that either became or ended being a trustee. In each case, *Before* corresponds to the year before the trustee change, *Change* corresponds to the year of the change and *After* is the year after the trustee change. The average holdings (as a percentage of the total company stock) of the trustee funds in each period are shown in the *Trustee* row (in %). The *Comparable* row contains the average holdings of the comparable funds used as benchmarks. The average difference between the holdings of the trustee and the benchmark is displayed in the *Difference* row. The t-statistic of the difference is reported beneath *Difference*.

Panel A: Family Level

	(1)	(2)	(3)	(4)
Ex/Fut Trustee			−0.299**	−0.285**
			(0.137)	(0.139)
Beginning (1 Year)	0.075			
	(0.052)			
Ending (1 Year)	−0.061			
	(0.041)			
Beginning (2 Years)		0.062**		
		(0.025)		
Ending (2 Years)		−0.035		
		(0.029)		
Trustee	−0.013*	−0.014**		
	(0.007)	(0.007)		
Quarter Fixed Effects	Yes	Yes	Yes	Yes
R-Squared	0.01	0.01	0.50	0.57
Observations	591,877	591,877	1,520	1,520

*,**,*** denote significance at the 90%, 95% and 99% level, respectively.

Panel B: % of Shares Outstanding at the Fund Level

	Begin Trustee Relationship			*End Trustee Relationship*		
	Before	Change	After	Before	Change	After
Trustee (%)	0.170	0.188	0.145	0.110	0.104	0.055
Comparable (%)	0.121	0.105	0.099	0.045	0.056	0.036
Difference (%)	0.049*	0.082***	0.046**	0.065**	0.048**	0.019
T Stat	1.70	3.62	1.97	2.51	2.03	1.34