

Performance Characteristics of Individually-Managed versus Team-Managed Mutual Funds

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The mutual fund industry has experienced extraordinary growth in the last two decades. At the end of 2005, the combined assets of U.S. mutual funds approached \$9 trillion, up from \$370 billion in 1984, while the number of individual funds grew from 1,200 to almost 9,000 over the same period (ICI [2006, pp. 7–8]). In 1984, only 12% of U.S. households owned mutual funds, but by 2005, the number had quadrupled to 48%, representing 54 million U.S. households (ICI [2006, p. II]).

Along with this growth came considerable scrutiny of the managers running these mutual funds. Those guiding the largest and most successful funds commanded multi-million dollar salaries and appeared on magazine covers and television talk shows discussing their investment secrets and offering advice. Debates about value versus growth strategies, glamor stocks, efficient markets, and the pros and cons of indexing were commonplace. Each year, the “winners” saw the assets they managed grow exponentially, while the “losers” lost investors or, in extreme cases, were fired. A large body of academic research has been devoted to assessing individual mutual fund managers and their performance. This research has evaluated the impact of numerous factors on fund performance, including the fund’s size, structure, and expenses; the age, tenure, educational level and compensation of the manager; and the turnover and risk profile of the fund.

This focus on individual managers overlooks an important trend in mutual fund management, i.e., each year more funds are managed by groups or teams of individual managers. Morningstar data lists “Management Team” or multiple individual managers by name for 60% of all equity funds in 2003, up substantially from just 30% in 1992. The SEC’s recent rule changes regarding the disclosure of more information on the members of management teams highlight the importance of this trend to investors.¹ One explanation is that fund companies are using team management to avoid falling victim to “stars” that leave (Kovaleski [2000]). Another explanation is that groups make better decisions in the areas of selecting and managing a stock portfolio.

In this article, we consider the management company’s choice of individual versus team management. Specifically, we look at differences in performance, risk, expenses, and turnover. The theoretical bases for this analysis are found in existing research about the different processes—and the ensuing results—used by individuals and groups to make decisions. We do not purport to provide insight into the fund managers’ decision-making process. This question, while certainly interesting, is beyond the scope of this article. Our focus is on discernible differences in the characteristics of individually-managed versus team-managed mutual funds.

We develop hypotheses and evaluate them using a sample of several thousand actively managed domestic and international mutual funds. We find that the performance of mutual funds managed by teams is similar to individually-managed funds on a risk-adjusted basis. In spite of this, the number of team-managed funds has grown at a significantly greater rate over the past 12 years. When investigated further, we find that team funds have significantly lower risk than their individually-managed counterparts and exhibit lower cross-sectional differences in their performance and systematic portfolio factor loadings. We also find that team-managed funds have significantly lower expenses and loads than individually-managed funds.

The following section reviews the relevant literature and develops the hypotheses we test, followed by a discussion of our data, methodologies, and results. We conclude with a summary of our findings and suggestions for future research.

LITERATURE REVIEW

In an ideal world of classical finance, it should not matter whether groups or individuals are making decisions because the goal is the same: to maximize end-of-period wealth, or total returns, over a particular time period (Arrow [1986]). However, the fields of psychology and behavioral finance, among others, make it clear that groups make decisions differently than individuals and in many situations produce better results. Bainbridge [2002] provided an excellent overview of the theoretical differences and clearly described why and in what situations groups will make better decisions. We defer to his work and focus first on the large body of experimental evidence supporting this claim.

Early findings unrelated to investment management (Hill [1982]) indicated that groups, on average, make superior decisions compared to individuals. For the groups in the Hill study, however, interaction was otherwise limited. Clearly, such a limitation is not the case with teams of fund managers who may interact frequently with one another. However, the reason for Hill's conclusion may still apply—groups made better decisions due to pooling and aggregating disparate pieces of information. In addition, Vollrath et al. [1989] found that groups recall information more accurately, leading to better-informed decisions.

Blinder and Morgan [2005] used two different experiments that yielded similar and striking results.

The most surprising finding is that no difference exists in the time it takes groups and individuals to reach a decision, even though in both experiments group decisions were superior. Miner [1984] used an experiment that tests evaluative judgment applied to a complex problem, a situation relatively similar to those faced by mutual fund managers. Miner found that groups did a better job, but not better than the best individuals. The problem is that the best individuals could only be identified *ex post* based on their performance on the experiment.

There are a few popular press and academic articles on the performance of group and individual mutual fund managers. Bloomberg Business Services looked at U.S. equity funds from 1982 to 1997, and reported that "multiple-management returns outpaced those of individually-managed funds by 1.2% per year" (Powers [1997]). They attributed this to better discipline and cooperation. A *Fortune* article found the opposite for the three-year period 1992–1995 reporting that "single-managed funds outperformed team-managed funds by 1.2%, and teams lost in 13 out of 16 categories" (Prochniak [1996]).

In the academic arena, Prather, Middleton, and Cusack [2001], and Prather and Middleton [2002] considered the question of individual versus team management of mutual funds. The first article analyzed 148 Australian investment funds from 1993 to 1998, concluding that there is "no significant risk-adjusted performance difference between multi-sector trusts managed by teams and those managed by individuals." Prather and Middleton [2002] used a sample of 162 U.S. mutual funds for the period 1981–1994. Their sample consists of 147 funds managed by individuals and 15 managed by teams. A more recent working paper by Baer, Kempf, and Ruenzi [2005] found team-managed funds exhibit marginally lower risk and more persistent returns, and experience greater inflows over time.

Our work extends this prior research in several notable ways. First, our sample is much larger, encompasses a long time-period, and has a more balanced proportion of team-managed and individually-managed funds. Second, by using a unique dataset that combines the Morningstar and CRSP databases, our results are more robust and less susceptible to data errors. Third, we use more current methodologies to evaluate performance and risk.

In spite of the ambiguous evidence on performance to date, we believe the theory and evidence on the superiority of group decision making is compelling. Because of this, we expect that, *a priori*:

- mutual funds managed by more than one individual will exhibit better performance than mutual funds managed by a single individual, and
- because groups make better initial decisions, portfolio turnover of mutual funds managed by groups will be lower than portfolio turnover of mutual funds managed by individuals.

Other research (e.g., Isenberg [1986]) has addressed differential risk-taking by groups and individuals. Specifically, groups may exhibit more risk-taking behavior because introducing a number of alternatives may lead to polarization toward an option with the most positive arguments supporting it, even though it may contain the most risk. As such, we also expect that

- mutual funds managed by more than one individual will exhibit more risk-taking activity than mutual funds managed by an individual.

Using these three hypotheses, this article provides the first comprehensive empirical study on the differential performance and risk-taking activity of portfolios managed by teams and individuals.

DATA AND METHODOLOGY

We collected data from Morningstar and the Center for Research in Security Prices (CRSP). The CRSP data are widely accepted in the literature, at least for research related to the equity market, but previous research has shown that the Morningstar data are more accurate and complete (Elton, Gruber, and Blake [2001]). Morningstar provides quarterly CD updates of open-end mutual funds. Each dataset lists fund information including the current managers, monthly returns, and various fund statistics such as expense ratio and turnover. Our sample starts in the fourth quarter of 1992 and ends in the fourth quarter of 2003. The CDs do not contain dead funds. Thus, each quarter's data are extracted from the original CD to avoid survivorship bias. The number of funds listed for each period ranged from just under 4,000 to over 18,000. The second data source is the CRSP Mutual Fund database. As with Morningstar, the CRSP dataset includes monthly return data and stretches from the fourth quarter of 1992 to the fourth quarter of 2003.² After 1999, the CRSP dataset provides quarterly updates of managers, turnover, and expense ratios, as well as other data categories. Prior

to 1999, however, only yearly updates are available. These two datasets were combined using identifiable key fields and hand sorting when necessary, providing a unique dataset that is as complete and accurate as possible.

Neither of the two datasets provides overall fund information, but lists each share class separately. We merged share classes of funds together to yield a final and complete dataset that consists of all unique mutual funds. Essentially, the data-combining techniques we use in this article are consistent with the approach employed by Daniel et al. [1997]. To measure fund performance, we rely on the approaches used by Carhart [1997], and Chevalier and Ellison [1999]. A number of factors have been shown to influence a fund's cross-sectional variation in performance, including the fund portfolio's exposure to a market (β) factor, momentum factor, size factor, and market-to-book ratio. Carhart's methodology is standard for mutual fund studies and incorporates these factors into the performance analysis in order to compute a fund's risk-adjusted alpha.

When studying fund flow differences, we employ Sirri and Tufano's [1998] performance regression methodology including their flow calculations, ranking system, and control variables. Flows are a percentage of the previous period's assets:

$$\text{Flow}_t = \frac{\text{Assets}_t - \text{Assets}_{t-1} * (1 + \text{Return}_t)}{\text{Assets}_{t-1}}$$

As in Sirri and Tufano [1998], this calculation assumes investor flows take place at the end of the period. We compute flows on a yearly basis and winsorize the top 5% to protect against data inconsistencies and newly reported share classes.³ If a fund has less than \$10 million in assets, we exclude it from that month. We also exclude all passively managed (index) funds from the analysis.

At the end of 1992, there were 1,168 distinct actively managed equity mutual funds, of which approximately 30% were team-managed (Exhibits 1 and 2).⁴ By 2003, the total number of actively managed equity mutual funds more than doubled to 2,639, yielding a compounded annual growth rate (CAGR) of 7.7%. However, team-managed funds grew much more quickly (CAGR = 13.8%) than funds managed by individuals (CAGR = 3.3%) and, as a result, increased to 56% of the total. Most of the growth in team-managed funds came from new funds, rather than funds switching to team-based management, and although the number of funds switching management styles has been

EXHIBIT 1

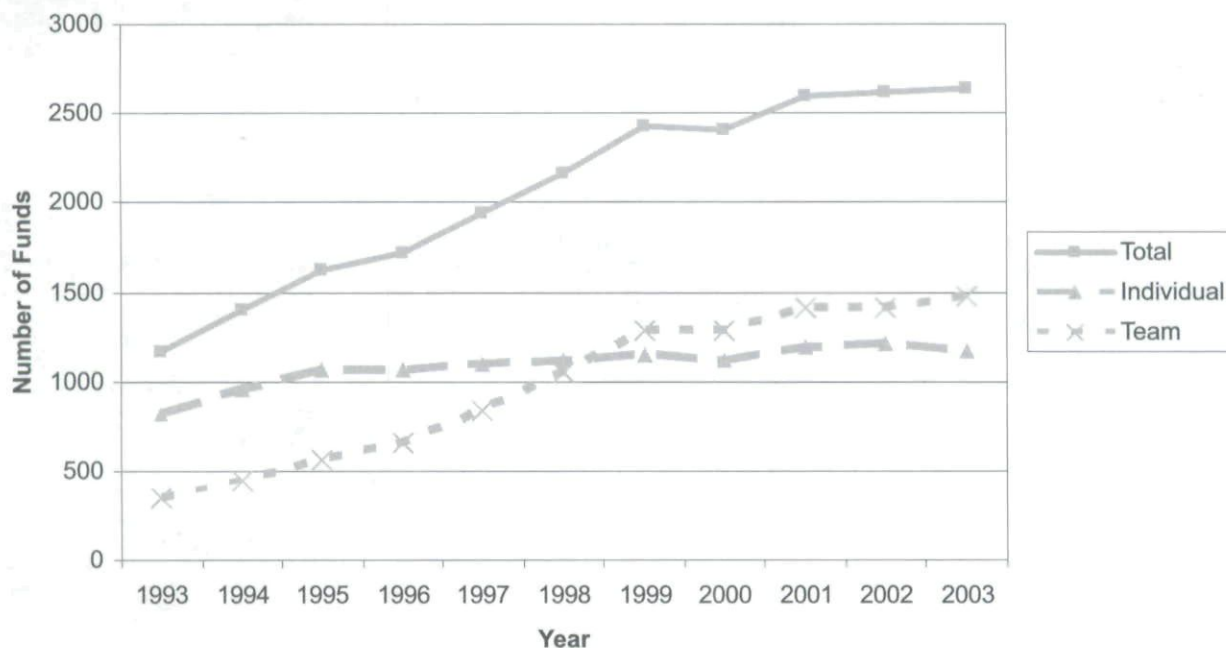
Equity Mutual Funds Managed by Teams over Time: 1993–2003

Exhibit 1 presents sample summary statistics over time. This includes a total count of equity mutual funds at year-end, divided into funds managed by individuals and those managed by more than one individual (Team). The “Switch” columns indicate the number of mutual funds that reported a management change in each year. “Fund Deaths” is the number of funds disappearing from the sample during the year.

Year	Total	Individual	Team	%Team	Switch to Individual	Switch to Team	Fund Deaths	
							Individual	Team
1993	1168	813	355	30%				
1994	1394	950	444	32%	10	11	61	6
1995	1619	1055	564	35%	14	17	157	88
1996	1715	1060	655	38%	14	19	52	23
1997	1937	1095	842	43%	26	47	77	33
1998	2161	1109	1052	49%	20	53	83	39
1999	2429	1150	1279	53%	26	26	51	42
2000	2402	1115	1287	54%	17	39	102	88
2001	2597	1184	1413	54%	21	26	78	104
2002	2616	1208	1408	54%	16	16	83	114
2003	2639	1163	1476	56%	18	34	82	132

EXHIBIT 2

Mutual Funds Managed by Teams over Time



small, they do favor a switch to team management. The number of funds that “died” is approximately equal on a proportional basis. An average of 8.0% of individually-

managed funds and 7.2% of team-managed funds did not survive each year.

Exhibits 3 and 4 provide insights into how major fund families modified their fund management structures over time. Of the ten largest fund families, Fidelity, Merrill Lynch, and Dreyfus are the only complexes that continue to prominently utilize individually-managed mutual funds. American, Franklin, and Putnam are the three fund families that use team-managed funds most extensively (over 90%). The dispersion of management type by fund family

is also extensive for smaller fund families. At the end of 1992, the vast majority of fund families had fewer than 15% of their funds managed by teams. By 1998, most of the fund families moved to team-managed funds; this shift continued to persist to the end of our data sample in 2003.

Although the total percentage of funds managed by teams stood at 56% by the end of 2003, the individual fund style categories exhibited significant variation. Teams

EXHIBIT 3

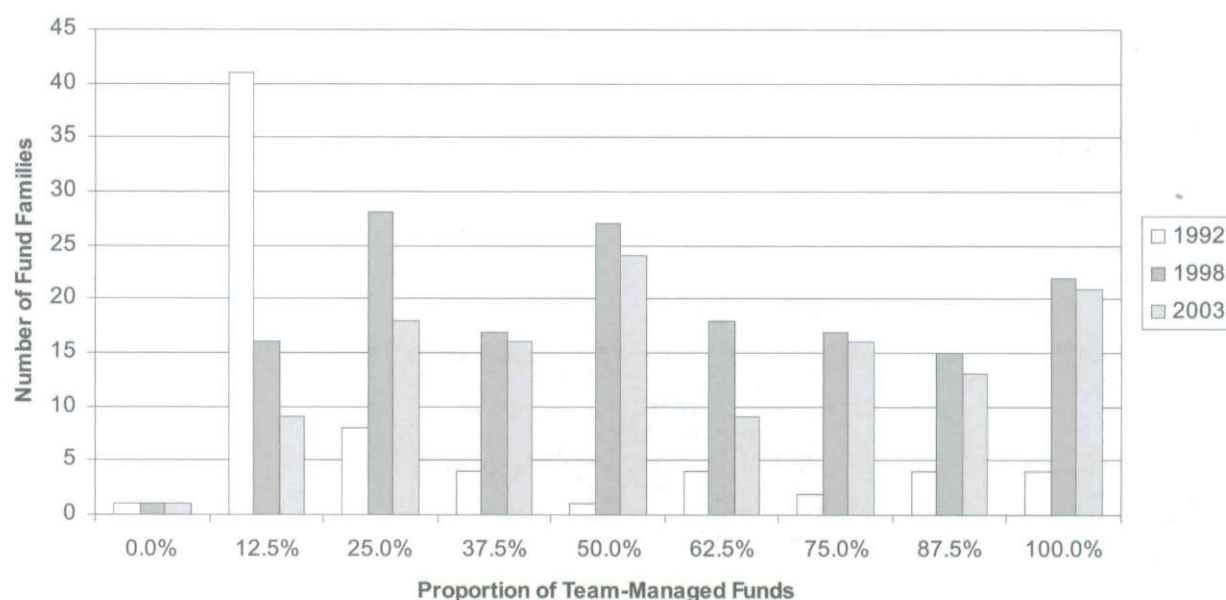
Management Types by Fund Family

Exhibit 3 represents the proportion of team-managed funds (by number of funds) for the 10 largest fund families between 1993 and 2003. Exhibit 4 indicates the number of fund families that have varying degrees of team-managed funds in 1992, 1998, and 2003.

Fund Family	1993	1995	1997	1999	2001	2003
Fidelity Group	2%	1%	9%	11%	6%	7%
Vanguard Group	63%	58%	65%	75%	73%	70%
American Funds Group	91%	92%	100%	100%	100%	100%
Franklin Group of Funds	71%	89%	98%	96%	91%	92%
Putnam Funds	37%	45%	55%	67%	66%	91%
Merrill Lynch Group	41%	32%	27%	15%	19%	19%
Dean Witter Funds (Morgan Stanley Dean Witter post-1998)	6%	18%	22%	46%	63%	75%
IDS Group (American Express post-1998)	9%	3%	12%	15%	45%	36%
Dreyfus Group	20%	19%	15%	13%	19%	18%
Price T. Rowe Funds	20%	32%	36%	40%	40%	35%

EXHIBIT 4

Distribution of Manager Type by Fund Family



managed 60% of equity funds and 50% of bond funds. A high percentage of funds in the global and asset allocation categories were managed by teams compared to a low percentage of funds in the municipal bond and specialty fund categories. For the funds, we also compared the proportion of assets under management as shown in Exhibit 5 and discovered few discernible differences. The breakdown between individually-managed and team-managed funds just described is consistent with the theory that teams are able to more appropriately and efficiently process disparate data in diffuse information environments, whereas individuals may be more apt to perform well in focused yet complicated arenas.

RESULTS

Previous literature in psychology and sociology provides guidance as to when and how groups will perform differently than individuals. To measure whether funds managed by teams outperform those managed by individuals and, more generally, whether this choice can

EXHIBIT 5

Mutual Funds Managed by Teams over Time— By Category

Exhibit 5 presents the proportion of team-managed funds by category on December 31, 1992, and December 31, 2003, by number of funds and total net assets.

	Proportion of Team-Managed Funds [by number of funds and total net assets]			
	1992		2003	
	# Funds	Net Assets	# Funds	Net Assets
All Equity Funds	18%	34%	60%	57%
Aggressive Growth	13%	17%	55%	51%
Equity Income	17%	17%	58%	42%
Growth	17%	28%	58%	48%
Growth and Income	16%	42%	62%	70%
Income	33%	80%	55%	74%
Small Company	16%	32%	59%	56%
All Bond Funds	11%	14%	51%	54%
Corporate	17%	24%	56%	49%
Municipal	6%	6%	45%	43%
Government	12%	12%	55%	62%
World	16%	19%	56%	61%
Other Fund Categories	18%	23%	58%	63%
Asset Allocation	34%	24%	66%	77%
International	19%	29%	63%	70%
Specialty Funds	11%	34%	48%	57%

explain cross-sectional differences in returns, we employ a number of empirical techniques.

Exhibit 6 presents Carhart's [1997] methodology to dissect differences between the performance and portfolio factor loadings of the two groups. We run annual regressions each year from 1993 through 2003 to compute the alpha and factor loadings for each fund. We then perform a regression analysis including controls for size, expenses, and turnover, including an individual management dummy on fund alphas and loading factors. Individually-managed funds have a dummy value of one and team funds have a dummy value of zero. We utilize Fama and Macbeth's [1973] methodology to compute coefficients and *t*-values for the entire period. For brevity, we only report the results of the performance dummy variable. Overall, after controlling for systematic portfolio risk factors, there are no statistically or economically significant differences in performance between individually-managed and team-managed mutual funds. These results strongly reject the theory in this area and provide a basis for further examination given the tremendous increase in team-managed funds in the past 12 years. Future research on the inner workings of team-managed funds may provide additional insights.

When examining the factor loadings, a clear pattern emerges for the market (β) factor (RMRF). Individually-managed funds have more market exposure. This result is significant at the 1% level over the entire sample as well as in four of the eight individual categories. Given the lack of statistical significance of the other three factor loadings, it appears team-managed funds exhibit significantly less risk than individually-managed funds.

To examine this further, we report the annual standard deviation of funds in Exhibit 7. We compute the average standard deviation of each fund management type for each year from 1993 through 2003. We then employ the methodology of Fama and Macbeth [1973] to compute overall coefficients and *t*-statistics. The annualized standard deviations of individually-managed mutual funds are significantly higher than those of team-managed mutual funds. While the category subset differences are not as consistent as the market factor loadings illustrated in Exhibit 6, the overall pattern in the category subsets reaffirms our conclusion that team-managed funds have significantly lower risk. These results directly refute evidence found by Isenberg [1986] in the psychology literature.

We also investigate the cross-sectional distribution of performance measured by Carhart alphas and the factor

EXHIBIT 6

Performance Differences by Management Type

Exhibit 6 shows the alpha and beta coefficients from the Carhart [1997] model. Results are presented for all equity mutual funds and individual categories. Regressions were run with the following dependent variables: Carhart Alpha, RMRF beta (market factor), SMB beta (size factor), HML beta (market-to-book factor), and UMB beta (momentum factor). A dummy variable for individually managed funds was included in the analysis to detect differences between individually managed and team-managed funds. Control variables include the log of the fund's assets, turnover ratio, and expense ratio. Only the dummy variable results are included for brevity.

Investment Objective	Alpha	RMRF	SMB	HML	UMB
Aggressive Growth	-0.02%	0.07**	-0.06	0.05	-0.01
Balanced	-0.01%	0.02	0.03	0.03	0.02
Diversified Emerging Markets	-0.01%	0.03*	0.00	0.01	-0.04*
Growth	0.02%	-0.01	0.00	0.03	-0.01
Growth and Income	-0.04%	0.02	0.07	0.04	-0.02
Income	0.05%	0.06***	-0.05***	-0.02	0.00
Small Company	0.03%	0.00	-0.04	-0.01	-0.03**
Specialty	-0.06%	0.06**	0.01	0.09	-0.01
Overall	0.03%	0.04***	0.02	0.03	-0.01

*, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

EXHIBIT 7

Mutual Fund Risk (Standard Deviation) by Management Type

Exhibit 7 presents the average yearly standard deviation for both team-managed and individually managed funds over the 1993–2003 period. We compute the standard deviations and differences each year. Overall differences and *t*-values are computed using Fama and Macbeth [1973]. Overall and category results are reported.

Investment Objective	Team	Individual	Difference
Aggressive Growth	21.46%	21.95%	-0.49%*
Balanced	8.99%	9.65%	-0.66%
Diversified Emerging Markets	22.53%	23.00%	-0.47%**
Growth	16.94%	16.72%	0.22%
Growth and Income	14.00%	13.91%	0.09%
Income	11.14%	11.96%	-0.82%***
Small Company	19.86%	19.57%	0.29%
Specialty	20.30%	21.84%	-1.55%**
Overall	16.22%	17.02%	-0.80%***

*, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

loadings of our two samples. Each year we compute the difference between the cross-sectional standard deviations of both management types.⁵ The results are in Exhibit 8. The distribution of the standard deviations for performance and loadings is consistently lower for team-managed funds when compared to individually-managed funds. In other words, team-managed funds were much more likely to perform close to their category averages.

Next, we review the nature of the trading activity and expenses between funds managed by teams and individuals. For each year, we run regressions with turnover, expenses, and total loads as the dependent variable. We include controls for size and a dummy variable for those funds managed by individuals. Results are in Exhibit 9.

We find no significant differences in overall turnover between team-managed and individually-managed funds. We do find, however, that for categories which might be expected to have more disparate company information (e.g., aggressive growth, growth, and small company), turnover is higher for individual managers which is consistent with the hypothesis that team-managed funds process diffuse information more efficiently. For fund categories likely to include equities of firms with more focused or complete information (e.g., specialty and income), teams exhibit significantly higher turnover.

Regardless of trading volume and turnover, the level of fees and loads is significantly higher for individually-managed funds. This result is positive and significant in six of eight categories for both expenses and loads. Based on the previous turnover results, we can conclude this is not due to a difference in trading styles, nor does it appear to be capturing a fund-family effect because most fund families contain a mix of team-managed and individually-managed funds. Given the overall lack of differences in risk-adjusted performance, the tremendous growth in the use of teams could be related to risk reduction and cost savings for management companies and ultimately for investors.

Finally, we analyzed fund flow differences conditioned on manager type. Sirri and Tufano's [1998] methodology allows us to disentangle fund flows from a number of variables including performance, size, risk, and fees, while correcting for overall category flows. We examined all equity-category flows in one model and growth-related fund flows in a second model. We added a

EXHIBIT 8

Distribution Comparison of Performance and Portfolios

Exhibit 8 examines the distribution of the alpha and beta coefficients from the Carhart [1997] model. The difference in the cross-sectional distribution's standard deviation between team-managed and individually-managed funds is presented along with overall coefficients computed using Fama and MacBeth [1973]. Panel A reports results for non-growth fund categories, while Panel B reports results for funds in growth categories.

Panel A: Non-Growth Funds					
Year	Alpha	RMRF	SMB	HML	PRIYR
1994	-0.000	0.000	-0.001	-0.001	-0.001
1995	0.001	-0.001	-0.001	-0.001	0.000
1996	-0.001	-0.000	-0.001	-0.001	-0.000
1997	-0.013	-0.002	-0.002	-0.005	-0.001
1998	-0.002	-0.001	-0.001	-0.003	-0.002
1999	-0.000	-0.000	-0.000	-0.001	-0.001
2000	-0.002	-0.001	-0.002	-0.001	-0.001
2001	-0.002	0.000	-0.000	-0.001	-0.001
2002	-0.001	0.000	-0.000	-0.001	-0.001
2003	-0.001	-0.001	-0.002	-0.003	-0.001
Average	-0.002*	-0.001*	-0.001***	-0.002***	-0.001***

Panel B: Growth Funds					
Year	Alpha	RMRF	SMB	HML	PRIYR
1994	-0.002	0.000	-0.000	-0.0011	-0.0006
1995	-0.002	-0.001	-0.001	-0.0001	-0.0003
1996	-0.002	-0.000	-0.000	-0.0002	-0.0006
1997	-0.001	-0.000	-0.000	-0.0009	-0.0006
1998	-0.003	-0.001	-0.001	-0.0004	-0.0002
1999	-0.002	-0.000	-0.000	-0.0004	-0.0004
2000	-0.001	0.000	-0.000	-0.0002	-0.0005
2001	-0.002	0.001	0.000	0.0005	0.0003
2002	-0.002	0.001	0.000	0.0003	0.0003
2003	-0.001	-0.000	-0.000	-0.0006	-0.0006
Average	-0.002***	-0.000	-0.000	-0.0003*	-0.0003**

*, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

dummy variable for funds managed by individuals. Exhibit 10 reports the results.

Model 1 contains any fund in an equity-related category, including specialty funds. Model 2 contains only funds belonging to the aggressive growth, growth, and growth-and-income categories. Only these categories are typically included in the Sirri and Tufano [1998] analysis.

Consistent with other studies, performance by rank is a significant determinant of fund flows. We find that the highest-performing (High Rank) funds receive the most new money.⁶ We also find a positive and significant coefficient on the lowest-performing funds (Low Rank). This flow of funds to poor-performing funds is smaller than for the good performers and may be attributable to an investor belief that the worst funds will reverse their poor perfor-

mance.⁷ Fund flows are negatively related to size, and risk, measured by standard deviation, is not a statistically meaningful factor when the other variables are considered. Fund flows are positively related to fees, which is consistent with previous studies that show a positive relationship between sales and marketing fees and fund flows. Most importantly, the dummy variable is statistically significant for both of our models, although only at the 10% level for the entire sample in Model 1. The interpretation is that even after correcting for performance, risk, size, and expenses, team-managed mutual funds receive about 3% greater fund flows per year than individually-managed mutual funds, perhaps due to the perceived stability or continuity of the fund management structure.

CONCLUSION

In the past 15 years, the growth of team-managed mutual funds has far outpaced the growth in individually-managed mutual funds. This is true across all fund categories and a broad base of fund families. In this empirical analysis, we reviewed performance and risk differences between team-managed and individually-managed mutual funds. We find team-managed and individually-managed funds exhibit similar risk-adjusted performance, but we also find evidence that team-managed funds have significantly lower risk. In addition, the standard deviations of the distributions of alphas and factor loadings are smaller for team funds, indicating that team-managed funds may hold more clustered portfolios.

We also find evidence of differences in turnover between the two groups. Team funds exhibit lower turnover in disparate information settings, but higher turnover when information is more focused or complete. Finally, we find evidence that team funds have lower expenses and loads than individually-managed funds by nearly 50 basis points per year, and that teams attract fund flows at a significantly greater rate than do individually-managed mutual funds.

Our research and results suggest several avenues for future study. Our study focuses only on whether a fund is team-managed or individually-managed, but the actual process utilized by teams to make portfolio decisions is of significant interest. Although the team decision-making process is beyond the scope of this article, it is ripe for additional research. There are also teams and individuals that manage multiple funds. This phenomenon may be a fruitful path for additional research. Lastly, our finding of

EXHIBIT 9

Character Differences by Management Type

Exhibit 9 examines the difference in operational aspects of team-managed and individually-managed funds by running regressions with turnover, expenses, and total loads as dependent variables. OLS regression results are reported for our entire sample as well as subsamples by investment category. We run yearly regressions that control for size and include a dummy variable that is one if a fund is a single manager fund and zero otherwise. Overall coefficients, *t*-values, and *p*-values are computed using Fama and Macbeth [1973]. For brevity, only the dummy variable results are reported.

Investment Objective	Turnover	Expenses	Total Loads
Aggressive Growth	25.39%*	0.18%***	0.63%*
Balanced	-13.13%***	0.05%	0.30%*
Diversified Emerging Markets	0.62%	0.11%**	0.58%***
Growth	15.14%***	0.03%**	0.36%***
Growth and Income	-0.03%	0.18%***	0.16%*
Income	-9.21%***	-0.10%***	0.03%
Small Company	9.97%***	0.08%***	0.42%**
Specialty	-79.86%*	0.07%**	-0.05%
Overall	-2.03%	0.10%***	0.39%***

*, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

EXHIBIT 10

Equity Fund Flows by Manager Type

Exhibit 10 examines the difference in investor behavior toward team-managed and individually-managed funds. Model 1 examines the results using funds in all equity-related categories, while Model 2 examines the aggressive growth, growth, and growth-and-income categories. Both panels use data from 1993 to 2004 as well as the Sirri and Tufano [1998] piecewise regression methodology, which controls for performance, size, risk, and segment flows. The single dummy indicates one if the fund manager was an individual and zero otherwise. Overall result coefficients and *t*-values are computed using Fama-Macbeth [1973] methodology.

	Model 1		Model 2	
	Coefficient	<i>t</i> -value	Coefficient	<i>t</i> -value
Low Rank	1.12	5.55***	1.11	5.20***
Mid Rank	0.54	3.98***	0.59	4.12***
High Rank	2.80	4.61***	3.23	4.72***
Log Assets	-0.05	-5.06***	-0.05	-4.90***
Category Flow	0.89	35.66***	0.76	6.97***
Std. Dev.	-0.67	-0.76	-0.14	-0.07
Total Fees	0.04	3.34***	0.04	2.38**
Single Dummy	-0.02	-2.12*	-0.03	-2.43**
Average N	1,250		679	
Avg. Adj. R-squared	27.55%		24.38%	

*, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

significant differences in expenses and loads suggests a comparison of managerial compensation practices for team-managed and individually-managed funds could also offer valuable insights.

ENDNOTES

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¹Securities and Exchange Commission. *Disclosure Regarding Portfolio Managers of Registered Management Investment Companies*, 17 CFR Parts 239, 249, 270, and 274, Release Nos. 33-8458; 34-50227; IC-26533; File No. S7-12-04.

²CRSP data is available before 1992. We did not use it for this study, however, because relatively few team-managed funds existed prior to this time period. In addition, all funds identified as index or enhanced index funds were deleted from the sample.

³While preparing the data, several highly unusual month-to-month asset changes caused some concern. For example, one fund has assets of over \$3 billion one month, less than \$1 million the next month, followed by a full recovery to over \$3 billion in the third month; these unusual changes were reported to CRSP for their comments.

⁴Both CRSP and Morningstar list fund managers as "Team-Managed" or as a list of names (i.e., "Manager A/Manager B/Manager C"). We categorize all funds with more than one manager as a "team-managed" fund. An anonymous referee raised the question of fund managers—individuals or teams—who manage multiple funds. We examined our sample and found that the vast majority of funds have a single manager or management team. For the others, there is no discernible difference, in the frequency or number of funds managed, between individually and team-managed funds.

⁵The year 1993 was excluded from this analysis because the number of team-managed funds was small (less than 30) for both non-growth and growth categories.

⁶This result is consistent with Sirri and Tufano [1998], and Elton, Gruber, and Blake

[2003].

⁷For their poorest performing quintile, Sirri and Tufano [1998] report "virtually no relationship between historical performance and flows." Our findings are similar to those in Elton, Gruber, and Blake [2003].

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