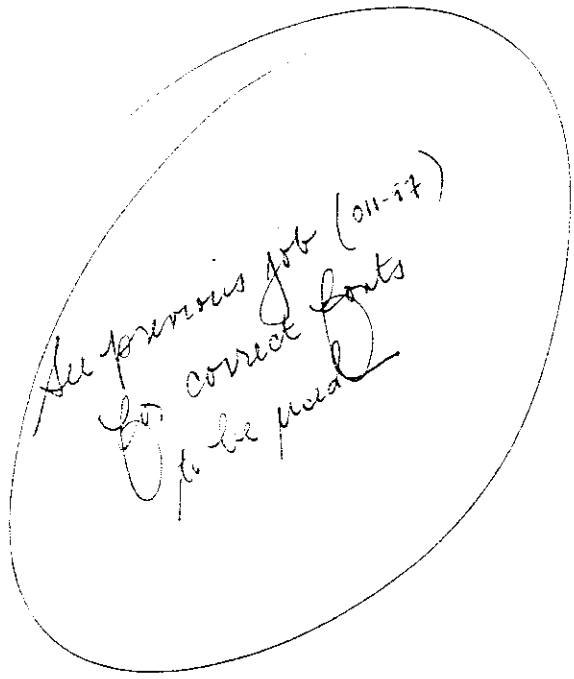
Margin should be 1½"



An Anatomy of Morningstar Ratings

Marshall E. Blume

012-97

An Anatomy of Morningstar Ratings

Marshall E. Blume [1]

Current Draft: October 1997

[1]Finance Department, Wharton School, University of Pennsylvania, Philadelphia, PA 19104-6367. Special thanks go to Mark Nodelman and Chris Welser, who devoted most of their 1997 summer to understanding, replicating and recalculating the Morningstar ratings; their help was invaluable. The author of course takes sole responsibility for the contents of this paper.

ABSTRACT

Chicago-based Morningstar rates the investment performance of mutual funds, assigning one to five stars with five being the best rating. This paper first documents the method that Morningstar uses in assigning these widely circulated ratings and then explores in detail the implications for the ranking of domestic equity mutual funds for June 1997. The empirical results show the following: First, it is less likely that a fund with a long history will receive the top rating of five stars than a fund with a short history. Second, Morningstar assigns its highest two ratings to nearly a half of the *no load* domestic diversified equity funds that it evaluates, while it assigns its lowest two ratings to just over a quarter of these funds. This large proportion of highly rated no load domestic diversified equity funds is due to the comparison group that Morningstar uses in ranking its funds. Specifically, Morningstar compares these no load funds to all domestic equity funds, which include both load and no load funds as well as sector funds, convertible bond funds, and other miscellaneous funds. Since Morningstar handicaps load funds for their load and penalizes sector funds for their lack of diversification, no load diversified domestic equity funds receive more stars than they would if they were evaluated in terms of themselves alone.

1 Introduction

Households are increasingly using long-term mutual funds as their financial investment of choice. Stock, bond, and income funds attracted 53.2 percent of households' new acquisition of financial assets in 1996, compared to 35.2 percent in 1995. For virtually all of the last decade, households have been net buyers of equities through mutual funds, while at the same time net sellers of equities through their direct holdings.[1]

This increased interest in mutual funds has spawned numerous publications that rank their investment performance. The Chicago-based Morningstar, one of the best known ranking services, classifies mutual funds into five categories according to their past investment performance. The highest ranking funds receive five stars and the lowest ranking funds receive one star. Besides being available to its own subscribers, these ratings are routinely published by the New York Times. Mutual funds often use these ratings in their advertisements, which gives these ratings additional visibility. Even CREF reports Morningstar ratings on its web page.

The goal of this paper is to dissect the Morningstar ratings in order to understand how they are calculated and how this method of calculation itself influences a fund's rating. The focus is domestic equity funds whose investment performance has been examined widely in both the popular and academic press. The second, and following, section contains a description of how Morningstar determines its ratings. The third section examines the relation between Morningstar ratings and the number of years in which a fund has been in existence. The fourth section quantifies the effect of including load and no load funds in the same comparison group upon the assignment of ratings. The fifth section quantifies the effect of including both diversified and other typically non-diversified funds in the same comparison group upon the assignment of ratings. The sixth section compares the Morningstar ratings

[1] 1997 Mutual Fund Fact Book.

for no load diversified domestic equities to what the ratings would have been had Morningstar used this group of funds themselves as the comparison group in place of the more broadly defined group of all domestic equity funds. The seventh section concludes the paper.

2 Method of Calculation

Morningstar's first step in assigning stars is to assign each fund to one of several classes. As of June 1997, Morningstar used the following four classes: domestic equities, foreign equities, municipal bonds, and taxable bonds. The choice of these four classes is a subjective decision, and the number of classes has changed over time. Until recently, Morningstar combined domestic and foreign equities into a single category, not separate categories as they are today.

Most funds fall clearly into one of these four categories, but occasionally Morningstar must use its own judgment in classifying a fund. To illustrate, Morningstar treats all specialty-metal funds as foreign equities, not domestic equities. If the dominant holdings of these funds are international equities, they should be viewed as international equity funds. After the classes are chosen and the funds classified, the remaining calculations for assigning funds utilize a predetermined algorithm. But even this algorithm is not totally objective in that Morningstar has changed the algorithm over time.

Within each of the four investment classes, Morningstar calculates risk- and load-adjusted return ratings but only for those funds with thirty-six or more historical monthly returns. These ratings are based entirely upon historical monthly returns and, depending upon data availability, are calculated for up to four time periods: one year, three years, five years and ten years. Because of the restriction that thirty-six or more months of data be available, any fund with a three-year rating also has a one-year rating. Utilizing these risk- and load-adjusted return ratings, Morningstar assigns one to five stars for each of the time periods for those funds with available ratings. It then assigns as described below an overall star rating

utilizing a complicated average of the stars for its three-, five- and ten-year ratings.

To simplify notation, let us for the moment focus on the three-year risk- and load-adjusted Morningstar rating $MnStarRate_k$ for fund k; the calculation of the risk- and load-adjusted ratings for one, five, and ten years is identical except for the number of monthly returns used. The three-year $MnStarRate_k$ is defined as the difference between the load-adjusted Morningstar return rating $MnRetRate_k$ and the Morningstar risk rating $MnRiskRate_k$, and larger values of this difference indicate better investment performance. Morningstar then ranks the funds within an investment class by this difference $MnStarRate_k$ and divides the ranked funds into five groups. Funds in the highest ranking group receive five stars, and those in the lowest ranking group one star.

The first step in determining the load-adjusted Morningstar return rating $MnRetRate_k$ is to calculate three-year cumulative returns: Let r_{kt} be the usual percentage return based upon changes in net asset value and dividends for fund k for month t and r_{ft} be the percentage return on a newly issued 3-month Treasury bill for month t.[2] Since the fund return is based upon changes in net asset value and actual dividends, this return is after the fund expenses but before any front or back end loads associated with the original investment or reinvestment of dividends. In terms of these monthly returns, define the three-year cumulative percentage return R_k as

$$R_k = \{ [\prod_{t=1}^{36} (1 + r_{kt})] - 1 \} 100. \tag{1}$$

Similarly, define R_f as the three-year cumulative percentage return for a rolling monthly investment in newly issued 3-month Treasury bills calculated in the same way as R_k.

The next step in calculating the load-adjusted Morningstar rating $MnRetRate_k$ is to determine a load adjustment L_k for fund k. If there is no load of any type, L_k is one, but if

[2]Sources at Morningstar have given inconsistent answers about the source of the Treasury bill return and exactly how these returns are calculated. It was not clear whether they just used the 3-month yield on new Treasuries as the return for the next month, or whether they adjusted the return for any change in the subsequent level of interest rates. In any case, Morningstar provides on CD-ROM's the returns that they do use in their calculations, and this paper will use these returns.

there is a load, L_k is less than one. For example, if there is a front end load of 5 percent, L_k is 0.95. The front end load is always assumed to be the maximum possible load. If there is a back end load, L_k will also be adjusted. Since back end loads typically decline over time, the effect of back end loads will gradually diminish as the period over which Morningstar calculates a load-adjusted return increases, which means that L_k will become closer to one.

Morningstar defines a load-adjusted return as

$$MnRet_k = R_k L_k - R_f. \tag{2}$$

The $MnRet_k$ can be interpreted as a load-adjusted three-year risk premium. The load-adjusted Morningstar return *rating* is in turn given by

$$MnRetRate_k = \frac{MnRet_k}{AvgMnRet}. \tag{3}$$

where $AvgMnRet$ takes on one of two values depending upon the average of $MnRet_k$ over all funds in the investment class: If this average is greater than R_f, $AvgMnRet$ is set equal to this average value, but if it is not, $AvgMnRet$ is set equal to R_f. As a result of this second condition, $AvgMnRet$ is always positive. Thus, the load-adjusted Morningstar return rating can be viewed as a standardized load-adjusted risk premium.

The Morningstar risk is given by

$$MnRisk_k = \frac{\sum_{t=1}^{36} -\min\left(r_{kt} - r_{ft}, 0\right)}{36}. \tag{4}$$

The $MnRisk_k$ is somewhat like a semi-variance in that only deviations of returns below a specific number are counted, but it is different in that these deviations are not squared and the deviations are measured from the Treasury bill return and not the average return. The Morningstar risk *rating* is in turn given by

$$MnRiskRate_k = \frac{MnRisk_k}{AvgMnRisk}, \tag{5}$$

where $AvgMnRisk$ is the average of $MnRisk_k$ over all funds in the investment class. This rating is a standardized measure of absolute deviations below the Treasury bill return.

The three-year Morningstar risk- and load-adjusted return rating is given by

$$MnStarRate_k = MnRetRate_k - MnRiskRate_k. \tag{6}$$

Rewriting (6), one obtains

$$MnStarRate_k = \frac{1}{AvgMnRet}\left[MnRet_k - \frac{AvgMnRet}{AvgMnRisk}\, MnRisk_k\right]. \tag{7}$$

Since $AvgMnRet$ is always positive, $MnStarRate_k$ is proportional to the term in the brackets. The term in brackets can be interpreted as risk-adjusted return. The first term in the brackets is a kind of risk premium and the second term is a downward adjustment for the risk of the fund. Sharpe (1997) suggests that (7) is consistent with a utility-based ranking.

The rankings implied by $MnStarRate_k$ depend upon the coefficient of $MnRisk_k$. As this coefficient changes, the relative weights on $MnRet_k$ and $MnRisk_k$ will change. This coefficient can be interpreted as an average reward to risk ratio for the investment class. Thus, this ratio will change as the funds in an investment class change.

For future reference, note that if an investor wanted to rank only no load domestic funds, which is a subset of all domestic funds, this ratio would change and with it the relative tradeoff between $MnRet_k$ and $MnRisk_k$ in the calculation of $MnStarRate_k$. If this ratio changed sufficiently, it is possible that the ordinal ranking of funds by $MnStarRate_k$ could change. Changing the investment class used for ranking, however, does not change $MnRet_k$ or $MnRisk_k$.

On the basis of the ranked $MnStarRate_k$ within each of the four investment classes, Morningstar assigns a three-year rating of five stars to the top 10 percent, four stars to the next 22.5 percent, three stars to the next 35 percent, two stars to the next 22.5 percent, and one star to the bottom 10 percent. Where there are enough returns, Morningstar also

assigns stars for periods of five and ten years as well as for one year, for which data will always exist.

As the last step, Morningstar calculates an overall rating, which is the rating that Morningstar highlights in its own publications. This rating is a complicated average of the ratings for three, five and ten years. If a fund has been assigned stars only for three years, the overall number of stars is set equal to the number of stars for this rating. If a fund has been assigned stars only for three and five years, the overall number of stars is the rounded value of 0.4 times the number of stars for three years plus 0.6 of the number of stars for five years. If a fund has been assigned stars for three, five, and ten years, the overall number of stars is the rounded value of 0.2 times the number of stars for three years plus 0.3 times the number of stars for five years plus 0.5 times the number of stars for ten years.[3]

3 The June 1997 Ratings

In its publications covering funds as of June 1997, which are dated July 1997, Morningstar evaluated coincidentally 1,997 domestic equity funds with monthly return data of three years or more. By construction, 10 percent or 199 of the 1,997 funds received five stars based upon their three-year rating (Table I, Panel A). The same percentage applies to the ratings determined by five years of return and by ten years, but of course the number of funds with available data declines.

Since the overall ratings are averages and averages are likely to be less extreme than the components of the averages, it should not be a surprise that only 8.2 percent or 164 received an overall rating of five stars (Table I, Panel B). The overall stars for these 164 funds are based upon rounded averages of some combination of the stars for three, five, and ten years. If these averages show less variability as the number of ratings used in the average increase,

[3]If the average before rounding ends in 0.5, the average is rounded up. Thus, a fund which receives four stars for each of three and five years and five stars for ten years would receive five stars overall.

the proportion of funds with ten or more years of data receiving five stars or one star might be expected to be less than the same percentage for those with only three or five years of data. By way of example, assume that two funds each receive five stars for their three-year rating. If the first fund has fewer than five years of data, its overall rating will be five stars. If the second fund has ten more years of data and its stars for both five and ten years are four, it would receive only four stars overall.

There is still another effect which would make it more difficult for funds with longer histories to obtain five stars. Morningstar reassigns stars for five and ten years as time moves on. If a greater percentage of the poorly performing funds cease to exist than the better performing funds, the ratings for five and ten years will be based increasingly on a smaller sample, which will include fewer poorly performing funds. Since only 10 percent of the funds can receive five stars for five or ten years, some funds which previously had five stars for five or ten years might subsequently receive only four stars, and so on.

In conformity with these conjectures, only 7.9 percent of those funds with ten years of data received an overall rating of five stars, 7.3 percent of those finds with five years but fewer than ten years of data received an overall rating of five stars, and 9.0 percent of those funds with three years but fewer than five years of data received an overall rating of five stars (Table I, Panel C). A similar result applies to the lower ratings: funds with less history show a greater proportion of overall ratings of one star, suggesting that the averaging effect is stronger than the survivorship effect.

In sum, newer funds, those with shorter track records, are likely to have a greater proportion of extreme number of stars for their overall rating, either one or five stars, in comparison to older funds, those with longer track records. Under the Morningstar system, it is easier for a newer fund to receive an overall five-star rating than an older fund. Similarly, it is easier for a newer fund to receive an overall one-star rating than an older fund.

4 The Impact of Load Fees

In its evaluation of domestic equities, Morningstar groups both no load and load funds into one investment class. If an investor plans to invest only in no load funds, the appropriate investment class is no load funds, not the investment class of both no load and load funds which Morningstar uses. On the assumption that there are no systematic differences in the investment performance of no load and load funds after the load has been paid, the expected impact of including both load and no load funds in the same investment class is to increase the number of no load funds receiving five stars and reduce the number of load funds receiving five stars. The reason is that in assigning stars Morningstar utilizes load-adjusted returns, which handicap load funds relative to no load funds. For some purposes, this handicap is justified, but not for an investor who decides only to invest in load funds. The precise effect of this handicap must ultimately be measured empirically.

Of the 1,997 funds classified as domestic equity on June 1997, 1,033 were no loads and 964 had some combination of front and back end loads (Table II, Panel A). Of the 164 funds to which Morningstar assigned an overall rating of five stars, 123 were no loads and 41 have some type of load. The 123 no load funds represent 11.9 percent of all no load funds, while the 41 load funds represent 4.3 percent of all load funds. Thus, no load funds tend to receive higher ratings from Morningstar than load funds, which is consistent with how Morningstar accounts for loads. The remainder of the paper will contain results only for the overall ratings, which Morningstar highlights in its publications. The results for the ratings for three, five, and ten years are similar, as they should be, since the overall ratings are averages of these ratings.

If domestic equities are divided into two investment classes, one for no loads and the other for loads, and the Morningstar ratings are recalculated, the number of no load funds receiving five stars drops by 49 from 123 to 74 and the number of load funds receiving five

stars coincidentally increases by 49 from 41 to 90.[4] Similarly, the number of no load funds receiving four stars drops by 43 funds and the number of load funds receiving four stars increases by 54. The number of no load funds receiving three or fewer stars increases and the number of load funds receiving three or fewer stars drops.

The increases and decreases in the number of stars are net numbers. The gross numbers show much more movement in the number of stars (Table III). There are 123 no load funds with five stars when the investment class is all domestic equity funds. When the investment class is changed to only no load domestic equity funds, 49 of these 123 drop to four stars. The situation is more complex for the four star category. There are 310 no load funds with four stars when the investment class is all domestic equity funds. When the investment class is changed to only no load domestic equity funds, there are two effects: First, 49 funds that formerly had five stars now have four stars. Second, 92 funds that formerly had four stars now have three stars. The new number of four star funds is thus 310 plus 49 less 92, or 267 for a net change of 43 funds.

[4]Morningstar provides monthly returns for the funds in its data base as well as the monthly returns for the three-month Treasury Bill, from which R_k and R_f can be calculated. If Morningstar published its load adjustment L_k, it would be a straightforward matter to recalculate the number of stars for an alternative investment class. Although Morningstar does not publish sufficient detail about back end loads to calculate L_k directly, it does provide sufficient information to determine L_k indirectly. Morningstar publishes $MnRet_k$ for five and ten years, and using this number, one can solve for L_k in (2). (It also publishes $MnRet_k$ for one year, but this number is not needed as it is not used in calculating the overall ratings.) Although Morningstar does not publish $MnRet_k$ for three years, this number can be recovered from $MnRetRate_k$, which it does publish. If one knew $AvgMnRet$, one could immediately determine $MnRet_k$ from (3), and it is possible to determine $AvgMnRet$ without knowing the individual components: First, calculate $MnRet_k$ for all no load funds in the domestic equity investment class. Second, for these funds, regress $MnRetRate_k$ on $MnRet_k$ with the intercept set to zero. The slope coefficient is an estimate of the reciprocal of $AvgMnRet$. In principle, one could solve for $AvgMnRet$ in (3) with just one no load fund, but in practice, this approach fails because Morningstar does not provide enough significant figures for $MnRetRate_k$. As a check of these calculations, the overall Morningstar ratings were recalculated for domestic equity funds, the same class as used by Morningstar, with identical results.

5 The Impact of Comparison Groups

The 1,997 funds which Morningstar includes in its domestic equity investment class fall into three major types: 1,409 diversified domestic equity funds, 194 sector funds, which Morningstar calls specialty funds, and 394 miscellaneous funds, which consist of 31 convertible bond funds and 363 domestic hybrid funds (Table IV). An investor who is evaluating only diversified domestic equity funds would want to exclude these sector and miscellaneous funds from the investment class.

Over 60 percent of the sector funds receive one or two stars, and over 80 percent receive three or fewer stars. This preponderance of lower ranked funds is probably due to their lack of diversification and Morningstar's use of an overall risk measure in calculating its ratings. This disproportionate number of lower ranking funds of itself will cause the remaining funds in the investment class to have more stars than they would if they were evaluated in an investment class by themselves.

Over 60 percent of the 394 miscellaneous funds have three stars, well above the 35 percent that Morningstar utilizes in assigning stars for three, five and ten years. The disproportionate number of these miscellaneous funds in the three-star class by itself will squeeze the remaining funds into ratings with either more or fewer stars than they would have if they were evaluated in an investment class by themselves.

If only diversified domestic equity funds were included in the investment class, i.e., dropping these specialty and miscellaneous funds, the number of diversified domestic equity funds receiving one or five stars would probably fall with a corresponding increase in the number receiving three stars. In fact, the number of funds receiving five stars falls from 143 to 109 (Table V). There is also a decrease in the net number of funds receiving one star. The net number of funds receiving four stars also drops, while the net number receiving two or three stars increases.

6 No Load Diversified Domestic Equity Funds

As of June 1997, Morningstar evaluated 772 no load diversified domestic equity funds, and it awarded four or five stars to 375 of these 772 funds, nearly 50 percent (Table VI). The reason that so many no load diversified domestic equity funds receive such high ratings is that they are being compared to an investment class that includes load funds as well as sector and miscellaneous funds. As shown above, the inclusion of these other types of funds in the investment class tends to increase the number of stars which no load diversified domestic equity funds receive.

The appropriate investment class for an investor who intends to invest only in no load diversified domestic equity funds is the class which includes only no load diversified domestic equity funds. This investment class excludes all load funds, sector funds, and miscellaneous specialized funds. From the above, one would expect that the number of funds to which Morningstar currently assigns four or five stars would drop substantially in this more narrowly defined investment class.

When the investment class is changed to include only no load diversified domestic equity funds and the overall stars recalculated, only 58 funds receive five stars in comparison to the 115 funds which previously received five stars (Table VI). Further, in terms of this more narrowly defined investment class, only 201 no load diversified domestic equity funds receive four stars in comparison to the previous 260.

These are net numbers. As none of the funds with published stars of four or more gained a star, the net change in stars for the five-star category is the same as the gross change–roughly 50 percent (Table VII). Of the 260 funds originally awarded four overall stars by Morningstar, 116 would receive one less star—nearly 45 percent.

7 Conclusion

Morningstar ratings are extremely sensitive to the definition of the investment class in which funds are compared. This paper concentrated on the ratings for Morningstar's domestic equities, which includes a diverse group of funds.

On one dimension, Morningstar includes both load and no load funds in its investment class of domestic equities. In determining its ratings, Morningstar handicaps load funds by the amount of their load. This handicap drives down the number of stars for load funds, while at the same time increasing the number of stars for no load funds.

On another dimension, Morningstar includes a wide range of equity funds in its investment class of domestic equities: diversified domestic equities, sector models, and a miscellaneous category including convertible bonds and hybrid funds. Probably due to the poor diversification of sector funds and Morningstar's emphasis on the total volatility of a fund, Morningstar tends to assign low ratings to these funds, which increases the number of stars assigned to other funds in this investment class. As of June 1997, Morningstar assigned an average rating of three stars to a disproportionate number of funds in the miscellaneous category, which again distorts the ratings of other funds in this investment class.

In using this broad investment class, Morningstar places nearly 50 percent of the 772 no load diversified domestic equity funds that it has evaluated as of June 1997 into its top two categories. This ranking would be useful to an investor who was considering any fund in this broad class, but an investor who has already decided to invest in no load diversified domestic equity funds would find a ranking of these funds within their own universe more valuable. When this universe of no load diversified domestic equity funds is used as an investment class for ranking instead of the broader universe used by Morningstar, nearly 50 percent of the funds to which Morningstar now assigns four or five stars would lose one star.

References

1. 1997 Mutual Fund Fact Book (Investment Company Institute, Washington, DC).

2. Sharpe, W. 1997. "Morningstar Performance Measures." (web page, www-sharpe.stanford.edu, July 8).

Table I

Distribution of Published Stars for Specific Number of Years and Overall Domestic Equity Funds June 1997

The three panels tabulate the number and percentage of domestic equity funds receiving one to five stars as of June 1997 cross-classified by various criteria. Panel A contains the distribution of three-year ratings, five-year ratings, and ten-year ratings. Any fund with a ten-year rating will also have three-year and five-year ratings. Likewise, any fund with a five-year rating will also have a 3-year rating. Panel B contains the distribution of overall ratings. Note that less than 10 percent of the funds receive a five-star rating due to the averaging and survivorship effect. Panel C contains the distribution of overall ratings according to number of years of available data. For funds with fewer than five years of data, the overall rating is the same as the three-year ratings. For funds with ten or more years of data, the overall rating is based upon an average of stars for three, five, and ten years, reducing the percentage of such funds receiving five stars.

A. Stars Determined by Rating for Specific Number of Years

Stars	Number of Funds			Percentage of Funds		
	3 Years	5 Years	10 Years	3 Years	5 Years	10 Years
*****	199	113	61	10.0	10.0	9.9
****	450	255	139	22.5	22.5	22.5
***	698	397	217	35.0	35.0	35.1
**	450	255	139	22.5	22.5	22.5
*	200	114	62	10.0	10.0	10.0
Total	1997	1134	618	100.0	100.0	100.0

B. Stars Determined by Overall Rating

Stars	Number of Funds	Percentage of Funds
*****	164	8.2
****	490	24.5
***	710	35.6
**	452	22.6
*	181	9.1
Total	1997	100.0

C. Distribution of Overall Stars Classified by Number of Years of Available Data

Stars	Number of Funds			Percentage of Funds		
	$3 \leq N < 5$ Years	$5 \leq N < 10$ Years	$N \geq 10$ Years	$3 \leq N < 5$ Years	$5 \leq N < 10$ Years	$N \geq 10$ Years
*****	78	37	49	9.0	7.2	7.9
****	193	142	155	22.4	27.5	25.1
***	283	177	250	32.8	34.3	40.5
**	213	117	122	24.7	22.7	19.7
*	96	43	42	11.1	8.3	6.8
Total	863	516	618	100.0	100.0	100.0

Table II

The Impact of Loads on Overall Stars
Domestic Equity Funds
June 1997

The numbers in this table measure the impact of changing the investment class for domestic equity funds to separate investment classes for each of the no load and load funds. Panel A gives the number and percentage of load and no load funds receiving one to five stars as of June 1997 based upon the overall ratings that Morningstar publishes. Panel B gives similar numbers and percentages but with the overall stars recalculated using no load domestic equity funds as the investment class to rank these funds and using load domestic equity funds as the investment class to rank these funds. In effect, Morningstar's original investment class is divided into two separate classes. Panel C shows the number of funds receiving one to five stars from this redefinition of investment class.

A. Funds Classified by Published Stars

Stars	Number of Funds			Percentage of Funds		
	Total	No Load	Load	Total	No Load	Load
*****	164	123	41	8.2	11.9	4.3
****	490	310	180	24.5	30.0	18.7
***	710	330	380	35.6	31.9	39.4
**	452	196	256	22.6	19.0	26.6
*	181	74	107	9.1	7.2	11.0
Total	1997	1033	964	100.0	100.0	100.0

B. Funds Reclassified Separately within Load and No Load Classes

Stars	Number of Funds			Percentage of Funds		
	Total	No Load	Load	Total	No Load	Load
*****	164	74	90	8.2	7.2	9.3
****	501	267	234	25.1	25.8	24.3
***	697	355	342	34.9	34.4	35.5
**	446	241	205	22.3	23.3	21.3
*	189	96	93	9.5	9.3	9.6
Total	1997	1033	964	100.0	100.0	100.0

C. Change in Number of Stars

Stars	Number of Funds		
	Total	No Load	Load
*****	0	(49)	49
****	11	(43)	54
***	(13)	25	(38)
**	(6)	45	(51)
*	8	22	(14)
Total	0	0	0

Table III

Stars Cross-Classified by Published Overall Stars and Recalculated Stars for No Load and Load Domestic Equity Funds Viewing Each as a Separate Investment Class June 1997

This table shows in detail how the net changes in Table II come about. Panel A covers no load funds, and Panel B covers load funds. To illustrate, Morningstar assigned four stars overall to 310 funds, but when the investment class is changed to include only no load funds, the number of funds receiving four stars as recalculated falls to 267 - a net decrease of 43. The number of funds receiving four stars as recalculated is derived by adding 49 funds which formerly had five stars to 310 and then substracting 92 funds which formerly had four stars and now have three stars.

A. No Load Funds as an Investment Class

Published Stars	Recalculated Stars					
	*****	****	***	**	*	Total
*****	74	49				123
****		218	92			310
***			263	67		330
**				174	22	196
*					74	74
Total	74	267	355	241	96	1033

B. Load Funds as an Investment Class

Published Stars	Recalculated Stars					
	*****	****	***	**	*	Total
*****	41					41
****	49	131				180
***		103	277			380
**			65	191		256
*				14	93	107
Total	90	234	342	205	93	964

Table IV

Distribution of Overall Published Stars by Type of Fund
Domestic Equity Funds
June 1997

Morningstar publishes overall ratings for 1,997 domestic equity funds as of June 1997. The numbers in this table give the distribution of published overall stars by three classes: diversified domestic equity funds, sector funds, and miscellaneous funds.

	Number of Funds				Percentage of Funds			
Stars	Total	Diversified Domestic Equities	Sector Funds	Miscellaneous	Total	Diversified Domestic Equities	Sector Funds	Miscellaneous
*****	164	143	16	5	8.2	10.1	8.2	1.3
****	490	417	14	59	24.5	29.6	7.2	15.0
***	710	431	39	240	35.6	30.6	20.1	60.9
**	452	277	95	80	22.6	19.7	49.0	20.3
*	181	141	30	10	9.1	10.0	15.5	2.5
Total	1997	1409	194	394	100.0	100.0	100.0	100.0

Table V

The Impact of Excluding Sector and Miscellaneous Funds on Overall Stars
Diversified Domestic Equity Funds
June 1997

The numbers in this table measure the impact of changing the investment class for diversified domestic equity funds to an investment class containing only these funds. The first column cross-classifies the number of diversified domestic equity funds by the number of stars that Morningstar has assigned as its overall rating as of June 1997. The investment class is all domestic equity funds. The second column cross-classifies the number of diversified domestic equity funds by the number of stars as recalculated for the investment class that includes only diversified domestic equity funds. The third column gives the net change. The fourth and fifth columns contain percentage distributions.

	Number of Funds			Percentage of Funds	
	Comparison Class			Comparison Class	
Stars	All Domestic Equity	Diversified Domestic Equity	Net Change	All Domestic Equity	Diversified Domestic Equity
*****	143	109	(34)	10.1	7.7
****	417	364	(53)	29.6	25.9
***	431	492	61	30.6	34.9
**	277	309	32	19.7	21.9
*	141	135	(6)	10.0	9.6
Total	1409	1409	0	100.0	100.0

Table VI

The Impact of Excluding Load, Sector and Miscellaneous Funds on Overall Stars
No Load Diversified Domestic Equity Funds
June 1997

The numbers in this table measure the impact of changing the investment class for no load diversified domestic equity funds to an investment class containing only these funds. The first column cross-classifies the number of diversified domestic equity funds by the number of stars that Morningstar has assigned as its overall rating as of June 1997. The investment class is all domestic equity funds. The second column cross-classifies the number of no load diversified domestic equity funds by the number of stars as recalculated for the investment class that includes only no load diversified domestic equity funds. The third column gives the net change. The fourth and fifth columns contain percentage distributions.

	Number of Funds			Percentage of Funds	
	Comparison Class			Comparison Class	
Stars	All Domestic Equity	No Load Diversified Domestic Equity	Net Change	All Domestic Equity	No Load Diversified Domestic Equity
*****	115	58	(57)	14.9	7.5
****	260	201	(59)	33.7	26.0
***	198	262	64	25.6	34.0
**	138	180	42	17.9	23.3
*	61	71	10	7.9	9.2
Total	772	772	0	100.0	100.0

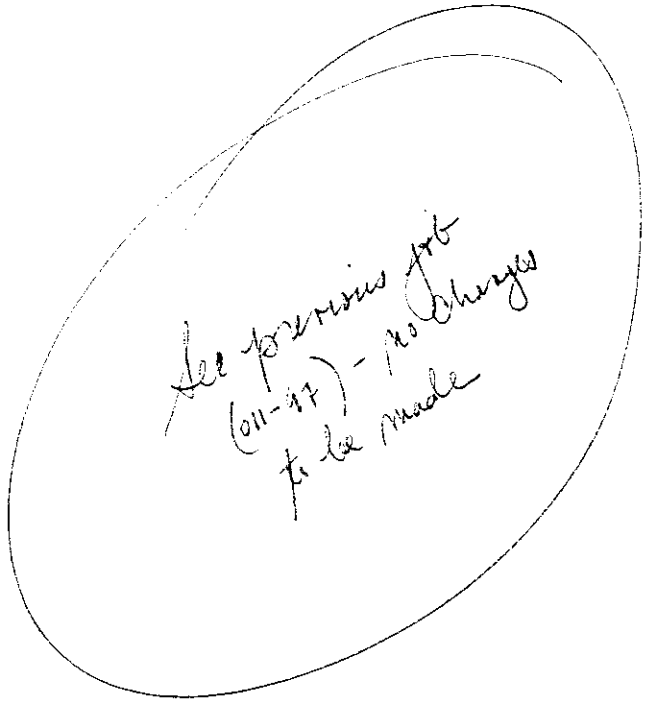
Table VII

Stars Cross-Classified
by Published Overall Stars and Recalculated Stars
for No Load Domestic Diversified Equities
Using No Load Domestic Diversified Equities as the Investment Class
June 1997

This table shows in detail how the net changes in Table VI come about. To illustrate, Morningstar assigned four stars overall to 260 funds, but when the investment class is changed to include only no load diversified domestic equity funds, the number of funds receiving four stars as recalculated falls to 201 - a net decrease of 59. The number of funds receiving four stars as recalculated is derived by adding 57 funds which formerly had five stars to 260 and then subtracting 116 funds which formerly had four stars and now have three stars.

Published Stars	Recalculated Stars					
	*****	****	***	**	*	Total
*****	58	57				115
****		144	116			260
***			146	52		198
**				128	10	138
*					61	61
Total	58	201	262	180	71	772

MARGIN TO BE
2"



Members of the Center
1997-1998

Directing Members

Ford Motor Company Fund
Geewax, Terker & Company
Merck & Co., Inc.
Miller, Anderson & Sherrerd
The Nasdaq Stock Market Educational Foundation, Inc.
The New York Stock Exchange, Inc.

Members

Aronson + Partners
Banque Paribas
EXXON
Goldman, Sachs & Co.
Spear, Leeds & Kellogg

Founding Members

Ford Motor Company Fund
Merrill Lynch, Pierce, Fenner & Smith, Inc.
Oppenheimer & Company
Philadelphia National Bank
Salomon Brothers
Weiss, Peck and Greer