

How the new Morningstar Ratings for mutual funds have been determined since mid-2002

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Summary: As of June 30, 2002, Morningstar, Inc. began to use significantly revised methods to define its star ratings for mutual funds. This article summarizes Morningstar's new Morningstar Rating* methods as defined in its publications. Morningstar used the following summarized procedures to define its "new" stars beginning in July 2002. This summary was prepared by *The Skilled Investor*. Please refer to Morningstar, Inc. for their definitive and updated materials.¹ Mutual funds are segregated into 48 different categories (e.g. large growth, small blend, specialty real estate, convertibles, Pacific/Asia, government long-term bonds, muni short-term, etc.) Mutual funds are compared within categories. Morningstar stated that "the relative star ratings of two funds should be affected more by manager skill than by market circumstances or events that lie beyond the fund manager's control. Accordingly, the new Morningstar Rating calculation is based on fund categories."² Fund categories are determined by: types of fund portfolio investments whether a single benchmark could validly compare performance a determination that funds in the same category could be substitutes for portfolio construction the fund's style profile If a fund shifted its style or category over time, Morningstar performed a category weighting procedure. Morningstar's measurement of the total returns of each mutual fund's monthly returns are adjusted for the following factors: Dividends and other distributions are assumed to be reinvested. If a fund had front- and/or back-end loads, adjustments are made to amortize loads over the period of measurement. [TSI Commentary: Loaded and no-load funds are grouped together for star rating purposes. This is very important to note, because the scientific investment literature indicates that luck rather than skill in securities selection is more likely to account for any performance differences between funds of similar styles. Random fluctuations in the portfolio performance of some loaded funds can be large enough to offset Morningstar's load handicap, and loaded funds can get high star ratings. Because the stars do not seem to predict superior future performance, an investor who is induced by a paid broker or advisor to pay a load for a fund with high star rating is more likely to be disappointed and obtain less than optimal results.

Because mutual funds' reported Net Asset Values already subtract out periodic management expenses or fees, no further return adjustments are necessary. Star ratings reflect pretax mutual fund returns. The only tax-related exception is for municipal bond mutual funds. Morningstar adjusts muni fund returns to reflect the municipal bond tax advantage. Mutual fund risk is modeled using an individual investor economic expected utility model. For purposes of defining its stars, Morningstar sets this risk model to reflect what it believes would be the average risk preferences of typical risk-averse retail investors. Morningstar calls their risk adjusted return measure, the "Morningstar Risk-Adjusted Return" or MRAR. Morningstar states that "the theoretical foundation (of the MRAR) is acceptable to sophisticated investors and investment analysts."³ Morningstar also argues that its star rating risk adjustments are preferable to alternative measures of risk-adjusted return, such as the Sharpe Ratio, because the

star rating system is more intuitive to retail investors.⁴ [TSI Commentary: Just because an investment indicator seems to be more intuitive does not make it better. Some good news about the new rating system is that now the risk model embedded in the stars is closer to risk indicators used in the scientific investment literature. Before, Morningstar had used a proprietary procedure, which made it more difficult to evaluate the meaning of the stars. (See: [The quality of the](#)

[Morningstar Ratings prior to mid-2002](#))] For any particular period, mutual fund return and risk are combined into a single blended MRAR score for each mutual fund. Annualized averages are calculated for 3-, 5- and 10-year periods based upon the most recent 36, 60, and 120 months of data for those periods, respectively. The risk measure is subtracted from the return measure to derive the MRAR. Star ratings are not assigned to any mutual fund with less than 36 months of returns.

All mutual funds within a particular category are then rank ordered for each of the 3-, 5-, and 10-year time periods, and a star rating is calculated. For each of these rating periods, stars are allocated as follows: 10% receive 5 stars 22.5% receive 4 stars 35% receive 3 stars 22.5% receive 2 stars 10% receive 1 star. For funds with

between 36 and 59 months of data, a 3-year MRAR is calculated and a star rating is assigned according to the distribution percentages above. Morningstar uses the most recent 36 months of data, and data greater than 36 months old is ignored.

For funds with between 60 and 119 months of data, a 5-year MRAR is calculated and a star rating is assigned according to the distribution percentages above. Morningstar uses the most recent 60 months of data, and data greater than 60 months old is ignored.

[TSI Commentary: Note that a 5-year rating simply means that two more years of older data are used when available. An investor needs to decide whether this older data is helpful. "Superior" performance data from the more distant past could mask poorer recent performance.]

For funds with 120 or more months of data, a 10-year MRAR is calculated and a star rating is assigned according to the distribution percentages above. Morningstar uses the most recent 120 months of data, and data greater than 120 months old is ignored.

[TSI Commentary: Note that a 10-year rating simply means that five more years of older data are used when available. An investor needs to decide whether this older data is helpful. "Superior" performance data from the distant past could mask poorer recent performance.]

In addition to its 3-, 5- and 10-year star ratings, Morningstar also calculates an "overall" weighted average star rating according to the following rules:

For funds with between 36 and 59 months of data, the 3-year star rating is used. For funds with between 60 and 119 months of data, a weighted average of the 3-year and 5-year star ratings is calculated. Morningstar weights the 3-year rating at 40% and the 5-year rating at 60%.

[TSI Commentary: For example, a mutual fund with a 3-year 1 star rating and a 5-year 5 star rating would receive a 3 star combined overall rating. $[(1 \times .4) + (5 \times .6) = 3.4$, which is rounded down to the nearest integer or 3, thus yielding a 3 star rating.]

->This illustrates why investors would want to be more careful when comparing Morningstar star ratings across funds, when different periods are involved. Since fund ages vary, this is always something that an investor should keep in mind.]

For funds with between 120 or more months of data, a weighted average of the 3-year, 5-year, and 10-year star ratings is calculated. Morningstar weights the 3-year rating at 20%, the 5-year rating at 30%, and the 10-year rating at 50%.

[TSI Commentary: A mutual fund with a 3-year 1 star rating, a 5-year 5 star rating, and a 10-year 5 star rating would receive a 4 star combined overall rating. $[(1 \times .2) + (5 \times .3) + (5 \times .5) = 4.2$, which is rounded down to the nearest integer or 4, thus yielding a 4 star rating.]

->This case illustrates why investors might want to be more careful when comparing Morningstar star ratings across funds, when different periods are involved.]

[TSI Commentary: Note that data can be double and triple counted in the development of the overall star index for mutual funds with at least 5 or 10 years of data. For the overall star calculation for funds with at least 5 years of data the most recent 36 months of data are involved

in the calculation of both the 3-year and the 5-year star rating. Therefore, in the combined star rating, the actual "data weighting" rounded to the nearest percent for the most recent 36 months is 71% and the weighting for months 37 to 60 is 29%. For the overall star calculation for funds with at least 10 years of data the most recent 36 months of data are involved and thus triple-counted in the calculation of the 3-year, 5-year, and 10-year star ratings. Months 37 to 60 are double counted in the 5-year and 10-year star ratings. Therefore, in the combined star rating the actual "data weighting" rounded to the nearest percent for the most recent 36 months is 42%. The weighting for prior months 37 to 60 is 23%, and the weighting for prior months 61 to 120 is 35%.]

Also, see these related rating service articles on Morningstar: ->[Investment astrology – should you pick investments according to the Morningstars?](#) ->[Morningstar Ratings should be used with caution](#) ->[Do the "new" Morningstar star Ratings predict superior fund performance?](#) ->[What does Morningstar, Inc. say its mutual fund stars can do?](#) ->[What does Morningstar, Inc. say its mutual fund stars cannot do?](#) ->[Simplifying investment decision making can be taken too far](#) ->[High Morningstar Ratings can lure you into funds with costly sales loads](#) ->[How Morningstar Ratings for mutual funds are used as a marketing tool](#) ->[How stable have Morningstar Ratings for mutual funds been over time?](#) ->[What the instability of mutual fund Morningstar Ratings means for long-term investors – Commentary](#) ->[Do mutual fund Morningstar Ratings changes influence individual investors?](#) ->[Does it pay to trade when the Morningstar Rating of a mutual fund changes?](#) ->[Do Morningstar Ratings predict risk-adjusted equity mutual fund performance?](#) ->[What might be wrong with buying a mutual fund with a 4 or 5 star Morningstar Rating?](#) * The Morningstar Rating is a trademark of Morningstar, Inc. The Morningstar Rating has also been referred to in the media as the Morningstar stars, the star rating, the star rating system, etc. 1) Morningstar's detailed description of their rating methods is available in "The New Morningstar Rating Methodology"; Morningstar Research Report, 22 April 2002 at the datalab.morningstar.com website, which is a Morningstar website for its institutional and advisory clients. http://datalab.morningstar.com/Midas/PDFs/Research_StarRating.pdf Certain summary information can also be found on the www.morningstar.com website with a little digging. Click on "About Company", which will take you to <http://corporate.morningstar.com> Then, select "Newsroom" and then "View Archive" under the Research heading to find a list of Fact Sheets and other documents that discuss their methodologies. 2) "The New Morningstar Rating Methodology"; Morningstar Research Report, 22 April 2002. Page 6 http://datalab.morningstar.com/Midas/PDFs/Research_StarRating.pdf 3) Ibid, page 10 4) Ibid, page 3