MORNINGSTAR®

Morningstar Quantitative Rating™ for Funds
Frequently Asked Questions

Morningstar Quantitative Research
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Jeffrey Ptak, CFA
Global Director, Manager Research
+1 312 384-4928

Lee Davidson, CFA
Head of Quantitative Research
+1 312 244-7541

Executive Summary

Background

Morningstar has been conducting independent investment research since 1984. Traditionally, our approach has been to provide analyst-driven, forward-looking, long-term insights to help investors better understand investments. Morningstar has one of the largest independent manager research teams in the world with more than 100 analysts globally covering more than 3,700 unique funds.

The Morningstar Analyst Rating for Funds™ (the Analyst Rating) provides a forward-looking evaluation of how these funds might behave in a variety of market environments to help investors choose superior funds. It's based on an analyst's conviction in a fund's ability to outperform its peer group and/or relevant benchmark on a risk-adjusted basis through a full market cycle of at least five years.

Initial Launch of the new Morningstar Quantitative Rating™ for funds

The number of funds that receive an Analyst Rating is limited by the size of the Morningstar analyst team. To expand the number of funds we cover, we have developed a machine-learning model that uses the decision-making processes of our analysts, their past ratings decisions, and the data used to support those decisions. The machine-learning model is then applied to the "uncovered" fund universe and creates the Morningstar Quantitative Rating™ for funds (the Quantitative Rating), which is analogous to the rating a Morningstar analyst might assign to the fund if an analyst covered the fund. These ratings predictions make up what we call the Quantitative Rating. With this new quantitative approach, we can rate nearly six times more funds in the U.S. market.

In the first phase of the launch, the Quantitative Rating for U.S. open-end and exchange-traded funds is available within the grid view in Morningstar Direct. Later in 2017, it will be available in the Best Interest Scorecard within in Advisor Workstation. We anticipate making the Quantitative Rating available for funds in some non-U.S. markets, and available in other products, in the future.

Eligibility

Only U.S. open-end funds and ETFs that don't currently have an Analyst Rating and are in a category that Morningstar currently rates are eligible to receive a Quantitative Rating. Today, the Quantitative Rating is available for more than 9,500 open-end funds and exchange-traded funds representing more than 24,000 share classes in the United States. With the introduction of the Quantitative Rating, we're extending a useful analytic tool to thousands of additional funds, providing investors with much greater

breadth of coverage from the independent perspective they have come to know and trust from Morningstar.

Frequently Asked Questions

General

Why are you launching the Morningstar Quantitative Rating™ for funds?
We're launching the Quantitative Rating to enlarge the universe of funds under coverage based on the research and data used by our analysts in their decision-making process. However, because analysts can cover only a finite number of funds, it limits the size of the coverage universe. We created the Quantitative Rating to algorithmically learn and emulate the analysts' work. By leveraging those learnings, the Quantitative Rating can be used to evaluate the full universe of funds, including those that analysts don't cover.

Where is the Quantitative Rating available?
It is available now within the grid view in Morningstar Direct and will be part of the Best Interest Scorecard, which will be available in Advisor Workstation later in 2017.

Why is the Quantitative Rating available only in these products and just for U.S. funds?
We're planning the rollout of the Quantitative Rating in phases. The Quantitative Rating has been built and rigorously tested for U.S. funds. The Quantitative Rating is a key input in our new Best Interest Scorecard, which we believe will help U.S. investors as financial institutions look to comply with the U.S. Department of Labor Fiduciary Rule. We're also making the rating available to investors via the grid view in Direct. When we have finalized the global testing of the Quantitative Rating and are ready to launch it in markets outside the U.S., we'll also look to make the rating available in other Morningstar products.

Is a Quantitative Rating equivalent to a rating that an analyst assigns, or different?
It's equivalent. The Quantitative Rating and the Analyst Rating should be thought of as a cohesive whole. Investors can use the Quantitative Rating in the same way they do the Analyst Rating. For more specifics on what each rating denotes, please refer to the Quantitative Rating methodology document.

What are the criteria for a fund to receive a Quantitative Rating?
Only U.S. open-end funds and ETFs that don't currently have an Analyst Rating and are in a category that Morningstar currently rates are eligible to receive a Quantitative Rating.

Will Morningstar assign a Quantitative Rating to funds in which it has a commercial interest or relationship?
No. In line with Morningstar's current policies, manager research analysts do not provide qualitative, analyst-driven ratings or opinions for:
► Investable products that track Morningstar indexes;

▶ Investable products where a Morningstar investment management subsidiary performs services including, but not limited to, asset allocation, portfolio construction, or security selection of the investable product

▶ Model portfolios where a Morningstar investment management subsidiary serves as a strategist; or

▶ Suites of investable products, such as 529 college savings plans or target-date fund series, where one or more of the underlying investments tracks a Morningstar index or a Morningstar investment management subsidiary performs services including, but not limited to, asset allocation, portfolio construction, or security selection.

How does the Quantitative Rating work?
The Quantitative Rating relies on the predictions from a machine-learning model that has been trained to learn and emulate how our analysts make decisions. The machine-learning model ingests current and historical ratings decisions of Morningstar analysts as well as the data used to support those decisions. The model can then process the data for a fund and assign a Quantitative Rating. For a full discussion of the methodology, please review the methodology document.

What is the Quantitative Rating scale?
The Quantitative Rating follows the same ratings scale as the Analyst Rating—Gold, Silver, Bronze, Neutral, and Negative. It will slightly differ in only one respect: To help users identify which Analyst Ratings were assigned by analysts and which by Quantitative Rating, we'll maintain the Quantitative Rating and the Analyst Rating as two separate data points.

Will you assign a Quantitative Rating to funds and ETFs that already receive an Analyst Rating?
No, we will assign a Quantitative Rating only to U.S. open-end funds and ETFs that analysts don't cover. In other words, funds will receive either a Morningstar Analyst Rating or a Morningstar Quantitative Rating, but not both. However, if our analysts initiate coverage on a fund, the Analyst Rating will appear alongside the Quantitative Rating until the following month-end, at which point the Quantitative Rating will cease.

Will you generate Quantitative Ratings for the five pillars of the Analyst Rating?
Yes. Funds that receive a Quantitative Rating will also receive quantitative ratings of Positive, Neutral, or Negative for each of the five pillars—Parent, People, Performance, Price, and Process. As with the Analyst Rating, these pillars combine to determine the overall Quantitative Rating. The quantitative pillars will also be differentiated as separate data points in Direct.

How many U.S. funds will receive Quantitative Rating?
As of the launch, more than 9,500 open-end funds and ETFs will receive Quantitative Ratings. This translates to more than 24,000 share classes.

Is this the first time you've employed a quantitative approach to assign ratings?
No. The Analyst Rating and the Quantitative Rating fit together in much the same way that our equity ratings do. The Morningstar Rating for Stocks is the summary expression of our analyst-driven,

fundamental equity research and provides an investment recommendation. The Morningstar Quantitative Equity Rating seeks to replicate, using a rules-based automated approach, the equity ratings from our analyst team. These ratings are available for more than 50,000 companies in 86 countries that trade on 64 exchanges, allowing investors to obtain a much greater breadth of the independent perspective they know and trust from Morningstar.

How does the Quantitative Rating differ from the Morningstar Rating™ for funds (the "star rating"), which is also quantitative?
The star rating is a backward-looking measure based entirely on past performance, while the Quantitative Rating is forward-looking and based on factors that figure into the analysts' qualitative assessment of funds.

Will historical Quantitative Rating data be available for U.S. funds?
Yes. At launch, the Quantitative Rating will rate funds with an "As Of" date of May 31, 2017. Going forward, the accumulated history of the Quantitative Rating and the Quantitative pillars will be retained and accessible to users of Direct.

About Morningstar Manager Research

Morningstar Manager Research provides independent, fundamental analysis on managed investment strategies. Analyst views are expressed in the form of Morningstar Analyst Ratings, which are derived through research of five key pillars—Process, Performance, Parent, People, and Price. A global research team issues detailed Analyst Reports on strategies that span vehicle, asset class, and geography. Analyst Ratings are subjective in nature and should not be used as the sole basis for investment decisions. An Analyst Rating is an opinion, not a statement of fact, and is not intended to be nor is a guarantee of future performance.

About Morningstar® Quantitative Research

Morningstar Quantitative Research is dedicated to developing innovative statistical models and data points, including the Quantitative Equity Ratings and the Global Risk Model.

For More Information

+1 312 384-4928
jeffrey.ptak@morningstar.com

+1 312 244-7541
lee.davidson@morningstar.com

M⃝RNINGSTAR®

22 West Washington Street
Chicago, IL 60602 USA