# Morningstar Medalist Rating
## Methodology

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**Important Disclosure**

## Summary

### The Morningstar Medalist Rating

An essential complement to Morningstar's database of investment information and Morningstar's suite of quantitative research tools, such as the Morningstar Rating (the "star rating") and the Morningstar Style Box, the Morningstar Medalist Rating and accompanying research report:

▶ Identify strategies Morningstar believes should be able to outperform their Morningstar Category average on a risk-adjusted basis over time;

▶ Call out strategies that Morningstar expects to underperform their Morningstar Category average on a risk-adjusted basis over time;

▶ Help investors and fund selectors assess whether strategies fit their goals, and, for analyst-driven Medalist Ratings, set expectations for the likely behavior of strategies in different market environments;

▶ Place a strategy and its vehicles in comparative and historical context in terms of criteria such as expenses, manager tenure, investment style, and asset size; and

▶ Monitor strategies for material changes that could affect their suitability or ratings.

### Independent Research

Morningstar is committed to the principle of independence. With the exception of our coverage in Australia and New Zealand, (see the below section titled "Australia and New Zealand"), Morningstar does not charge asset managers to rate their strategies and associated vehicles and does not permit asset managers to commission ratings from us. Morningstar also commercializes its manager research by including ratings and reports in various products and services and through licensing its intellectual property. Morningstar endeavors to conduct its analysis and research in a manner that is transparent and that also maintains the integrity and objectivity of its ratings and opinions.

Morningstar produces this analysis to assist investors, advisors, and institutions in developing a greater understanding of their investment options. Morningstar separates its researchers from any commercial relationships the company may have with asset managers in order to avoid any actual, potential, or perceived conflicts of interest. Morningstar's assessment aims to provide in-depth, accurate, and useful analysis that will help investors make informed decisions about fund strategies, avoid those that will underperform, and build more-cohesive portfolios. Morningstar's assessment is based on a robust analytical framework, conveying Morningstar's genuine opinion of a strategy and associated vehicles, including negative views when warranted.

**Australia and New Zealand**

While Morningstar has a global ratings model, Australia and New Zealand differ in the following aspects. From March 31, 2026, Medalist Ratings based on any algorithmically generated fundamental pillars (People, Process, and Parent) will be withdrawn from Australia. Fund costs will be accounted for in all analyst-assigned ratings in Australia (just as they are elsewhere) by the Medalist Rating Price Score, weighted as described elsewhere in this methodology and underpinned by the Total Cost Ratio - Prospective (Aus) data point.  The below details are applicable to analyst-assigned ratings in Australia and New Zealand, but not elsewhere:

- ▸ If an investment is domiciled in Australia, and it is required under Australian law to have a Target Market Determination, a rating will only be generated if Morningstar has been provided with that TMD.
- ▸ For the purpose of Parent Pillar assignment, the Advisor CompanyID is used in place of Branding Name ID.
- ▸ Superannuation funds are also eligible for coverage in Australia, Directly by Analyst. Please see the Morningstar Medalist Rating for Australian Superannuation Funds document on our Signature Research page for more information.

Also, while Morningstar does typically not charge asset managers to include their strategies and associated vehicles in the Morningstar Medalist Rating coverage universe, consistent with local practice in Australia, Morningstar will, starting from June 2026, also offer Issuer Initiated Ratings in Australia and New Zealand, where Morningstar will receive a fee from a fund manager or financial product issuer for the preparation of a Morningstar Medalist Rating on their financial product(s) domiciled in Australia or New Zealand. Morningstar Manager Research retains sole discretion to determine whether analyst-driven coverage can be initiated. This determination is primarily based on the disclosure and provision of sufficient information about the asset manager and the relevant strategy, as well as access to portfolio managers and the investment team.

For a period of time until further notice, Morningstar also intends to continue its coverage of Australia- and New Zealand-domiciled vehicles without charging the relevant fund managers or financial product issuers for the preparation of an associated Morningstar Medalist Rating on their financial product(s).

Morningstar will clearly identify each Issuer Initiated Rating and will provide disclosure relating to the party that has paid the associated fee. Fees for an Issuer Initiated Rating are not linked to the rating outcome, and the paying entity has no influence over the analytical process or rating outcome.

For both types of coverage, Morningstar conducts its analysis in a transparent manner and maintains the integrity and objectivity of its ratings through governance and conflict-management frameworks. Morningstar's researchers are operationally separated from Morningstar's commercial and sales activities to avoid any actual, potential, or perceived conflicts of interest.

**Forward-Looking Analysis**

The Morningstar Medalist Rating for funds is the summary expression of Morningstar's forward-looking analysis of investment strategies as offered via the specific vehicles. Vehicles can include but are not limited to open-end funds, closed-end funds, exchange-traded funds, insurance and pension funds, and separately managed accounts domiciled throughout the world. The Medalist Rating does not express a view on a given asset class or peer group; rather, it seeks to evaluate each strategy and associated vehicle within the context of an appropriate peer group of similar vehicles.

Morningstar assigns Morningstar Medalist Ratings at the vehicle level to capture the impact of fee differences on expected performance outcomes between different types of vehicles, including different share classes of the same fund. Morningstar's research and academic studies have repeatedly shown that a vehicle's ability to outperform erodes as fees become higher. Morningstar's analysis of each specific vehicle under coverage is designed to capture the most precise accounting possible of fees, if possible. For open-end funds, for example, this means that share classes of the same fund that charge different amounts may receive different Morningstar Medalist Ratings.

Morningstar expresses the Morningstar Medalist Rating on a five-tier scale running from Gold to Negative. For both actively and passively managed funds, Morningstar assigns Gold, Silver, and Bronze ratings to vehicles expected to add value over the long term when compared with a relevant Morningstar Category average after accounting for fees and risk.

Morningstar Medalist Ratings should be interpreted as follows:

### 🛡 Gold
Morningstar's top recommendations, these investments are expected to add the most value within their Morningstar Category.

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### 🛡 Silver
Just below Gold but still expected to add significant value within their Morningstar Category.

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### 🛡 Bronze
Not expected to perform as well as Gold or Silver but should add at least some value within their Morningstar Category.

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### Neutral
Not expected to outperform within their Morningstar Category but shouldn't subtract as much value as Negative.

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### Negative
Expected to be the worst performers, subtracting significant value within their Morningstar Category, or suffer from a key flaw that otherwise makes them a poor choice in our analysts' view.

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### Under Review
Denotes a change at a rated strategy that requires further review to determine its impact on the rating.

## Methodology

In more than two decades of manager research, Morningstar's global analyst team has identified four key areas that evidence suggests are crucial to estimating the future performance of strategies and their associated vehicles: People, Parent, and Process Pillars (referred to elsewhere in this methodology as *fundamental pillars*), and the Medalist Rating Price Score. These pillars form the spine of Morningstar's research approach, with analysis coalescing around an evaluation of the strategy's management team, the parent firm, the quality and repeatability of the underlying investment process, and the cost of the vehicle at the share class level. In this way, the analysis considers not just each pillar in isolation but also the interaction between them, which is crucial to understanding a vehicle's overall merit.

To provide a consistent repeatable framework for the Morningstar Medalist Ratings, reflective of the opportunity set within their Morningstar Category, Morningstar assigns ratings as follows:

### Score Pillars

Morningstar assigns scores to the People, Process, and Parent Pillars (the "fundamental pillars") ranging from negative 2 to positive 2. Those scores correspond to the pillar ratings assigned to a vehicle based either on an analyst's qualitative assessment or—where a pillar is not scored by an analyst—the use of algorithmic techniques (as explained in further detail in the "Pillar Evaluation" section of this methodology). The pillar ratings take the form of Low (-2), Below Average (-1), Average (0), Above Average (+1), and High (+2). The cost of a product is evaluated using the Medalist Rating Price Score. MPS is a continuous score (as opposed to an integer value) running from negative 2.5 to positive 2.5 based on the percentile rank of a vehicle's expense ratio within its Morningstar Category.

### Calculate Weighted Medalist Rating Score

For both actively managed and passively managed vehicles, Morningstar uses the pillar scores and MPS in conjunction with set weights to calculate a weighted score that indicates our view of the likelihood and degree to which a vehicle will outperform its Morningstar Category average.

**Weighted Medalist Rating Score for Actively Managed Strategies**
For actively managed vehicles, the pillars and MPS are weighted as follows:

**Exhibit 1** Pillar Weights for Actively Managed Vehicles

| Fundamental Pillars: 70% of overall Medalist Rating score | People: 45% of fundamental pillars<br>Process: 45% of fundamental pillars<br>Parent: 10% of fundamental pillars |
|---|---|
| Medalist Rating Price Score: 30% of overall Medalist Rating score | |

The equation to derive an actively managed vehicle's weighted Medalist Rating score is as below. For target-date funds only, the weighted Medalist Rating score is averaged across the share class type for each target-date series, ensuring all shares of the same type within a given target-date series receive the same Medalist Rating:

$$0.70 * ((0.45 * People\ Score) + (0.45 * Process\ Score) + (0.10 * Parent\ Score))$$
$$+(0.30 * MPS)$$

**Weighted Medalist Rating Score for Passively Managed Strategies**

For passively managed vehicles, the Process Pillar and MPS are given higher weights to reflect the importance of the construction of the underlying index relative to other factors and the importance of price for index-tracking vehicles:

**Exhibit 2**  Pillar Weights for Passively Managed Vehicles

| Fundamental Pillars: 60% of overall Medalist Rating score | People: 10% of fundamental pillars<br>Process: 80% of fundamental pillars<br>Parent: 10% of fundamental pillars |
|---|---|
| Medalist Rating Price Score: 40% of overall Medalist Rating score | |

The equation to derive a passively managed vehicle's weighted Medalist Rating score is as follows:

$$0.60 * ((0.10 * People\ Score) + (0.80 * Process\ Score) + (0.10 * Parent\ Score))$$
$$+(0.40 * MPS)$$

**Derive the Overall Medalist Rating From the Weighted Medalist Rating Score**

Once Morningstar has calculated the weighted Medalist Rating score for a vehicle, it compares the score to a set of fixed numeric thresholds set by Morningstar's research leaders and employed consistently across Morningstar Categories and regions, with separate thresholds for actively managed investments and passively managed investments. The thresholds are set at levels designed to ensure efficacy of the ratings and deliver a rated universe that is sufficient for portfolio construction across investor types, asset classes, and markets. For consistency and alignment with these goals, Manager Research intends to review the rating thresholds at least annually.

The ratings thresholds are set per rating level as below:

### 🛡 Gold

Actively managed vehicles: Weighted Medalist Rating score greater than or equal to 1.2

Passively managed vehicles: Weighted Medalist Rating score greater than or equal to 1.4

### 🛡 Silver
Actively managed vehicles: Weighted Medalist Rating score greater than or equal to 0.8, but less than 1.2
Passively managed vehicles: Weighted Medalist Rating score greater than or equal to 1.0, but less than 1.4

### 🛡 Bronze
Actively managed vehicles: Weighted Medalist Rating score greater than or equal to 0.5, but less than 0.8
Passively managed vehicles: Weighted Medalist Rating score greater than or equal to 0.7, but less than 1.0

### Neutral
Actively managed vehicles: Weighted Medalist Rating score greater than or equal to negative 0.5, but less than 0.5
Passively managed vehicles: Weighted Medalist Rating score greater than or equal to negative 0.3, but less than 0.7

### Negative
Actively managed vehicles: Weighted Medalist Rating score less than negative 0.5
Passively managed vehicles: Weighted Medalist Rating score less than negative 0.3

**Medalist Ratings Buffers and Ratings Caps**

To prevent frequent ratings changes when a vehicle's weighted Medalist Rating Score or a fundamental pillar score is near the threshold between ratings levels, Morningstar applies a buffer as follows:

**Buffers: Active People, Active Process, Passive Process, Parent**

In cases where the discrete negative 2 to positive 2 score differs from that of the previous month, look at the raw score underpinning it. If the current month's raw score is within a certain "buffer" of the relevant threshold, then override the discrete score with its previous value, thereby preventing the change.

- Active People/Process Pillar scores must cross the ratings threshold in question by more than 5% to change scores
- Parent Pillar scores must cross the relevant threshold by more than 0.4 to change scores
- Passive Process Pillar scores must cross the relevant threshold by more than 0.125 to change scores

**Rating Caps**

Morningstar also typically applies Medalist Rating caps as follows:

Actively Managed and Passively Managed vehicles:

- Where the Parent Pillar is rated Low (-2), the Medalist Rating is capped at Neutral.

Actively Managed vehicles only:

- Where both the People and Process Pillars are rated Average (0), the Medalist Rating is capped at Bronze.
- Where the People or Process Pillar is rated Below Average (-1) or Low (-2), the Medalist Rating is capped at Neutral.

Passively Managed Vehicles only:

- Where the Process Pillar is rated Average (0), the Medalist Rating is capped at Bronze.
- Where the Process Pillar is rated Below Average (-1) or Low (-2), the Medalist Rating is capped at Neutral.

Model Portfolios only:
- ▸ If 18 months have not elapsed since model activation, the Medalist Rating is capped at Bronze.

**Performance**

Morningstar evaluates a vehicle's performance as part of its overall assessment. However, performance is not a distinct pillar. Rather, Morningstar considers performance within the context of the other pillar assessments it conducts, notably People and Process. This ensures that performance does not play an outsize role in the overall assessment while tying performance analysis to factors that Morningstar's research has found are better indicators of future outcomes, like the prudence and repeatability of a vehicle's investment approach; the depth, breadth, and continuity of the management team implementing the strategy; and the investor-centricity of the parent firm that stands behind the vehicle concerned.

## Pillar Evaluation

The following sections detail the process by which Morningstar assigns pillar ratings to vehicles. Broadly speaking, Morningstar assigns the fundamental pillar ratings—People, Process, and Parent Pillar ratings—to vehicles in one of four ways (the Medalist Rating Price Scores are derived quantitatively):

| Approach | Description |
|---|---|
| Directly, by Analysts | Pillar ratings assigned by analysts to vehicles they cover, based on their qualitative assessment. When analysts cover a vehicle, they assign all three pillars: People, Process, and Parent. |
| Indirectly, by Analysts | Pillar ratings assigned to vehicles that are not covered directly by analysts. This is achieved by mapping the pillar ratings analysts have assigned to vehicles they cover to uncovered vehicles that are related in some way to the vehicles they cover. These relationships can take a few forms, such as when an uncovered vehicle follows the same strategy as a covered vehicle or when an uncovered vehicle shares the same parent firm as a covered vehicle. |
| Directly, by Algorithm | Pillar ratings assigned algorithmically to vehicles not assigned pillar ratings directly or indirectly by an analyst. |
| Indirectly, by Algorithm | Pillar ratings assigned to vehicles that are not covered directly by the algorithm. For instance, vehicles in the variable annuity, variable life, and collective investment trusts universes are not rated Directly, by Algorithm, but can inherit algorithmic pillar ratings from open-end funds, exchange-traded funds, separate accounts, or model portfolios under the same strategy (as codified by StrategyID). While separate accounts and model portfolios can be rated Directly, by Algorithm, they will preferably inherit algorithmic scores from open-end funds and ETFs when possible. |

For any fundamental pillar—for example, Process—a pillar rating may be assigned either by an analyst—directly or indirectly—or by algorithm, but not both. In other words, a vehicle will not receive a pillar rating assigned by an analyst and a pillar rating assigned algorithmically for the same pillar. It will

receive one or the other, depending on whether the vehicle is being directly or indirectly covered by analysts.

That said, it is possible for a vehicle to receive one or more pillar ratings assigned Indirectly, by Analysts, and one or more pillar ratings assigned algorithmically. For instance, an uncovered vehicle could be indirectly assigned People and Process Pillar ratings produced by analysts and directly assigned a Parent Pillar rating by the algorithm.

The Morningstar Medalist Analyst-Driven Percentage data point displays the weighted percentage of a vehicle's fundamental pillar ratings assigned directly or indirectly by analysts. For example, if the People and Parent ratings are assigned directly or indirectly by analysts but the Process rating is assigned algorithmically, the Analyst-Driven Percentage for an actively managed vehicle would disclose that 55% of the pillar weight was assigned by analysts and the Analyst-Driven Percentage for a passively managed vehicle would disclose that 20% of the pillar weight was assigned by analysts.

The following sections describe the pillar evaluation process under each of these three approaches in further detail.

**Pillar Assignment: Directly, by Analysts**

This section explains how Morningstar determines which vehicles it will assign to analysts for coverage and provides an overview of the assessments analysts make when evaluating the People, Process, and Parent Pillars in assigning ratings to the vehicles they cover.

**How Morningstar Makes Coverage Decisions**

Morningstar analysts only directly assign pillar ratings to vehicles on their coverage lists. In making coverage decisions, Morningstar seeks to ensure that users of its research have access to analysis on a broad spectrum of vehicles that are important to them and meet their needs for portfolio construction. Hence, Morningstar does not determine coverage strictly based on quantitative screens of investment returns, net assets, or performance history. Moreover, analyst teams have ample discretion in determining their coverage universe, focusing on investment merit, investor interest, and client demand.

Although these criteria can tilt coverage toward vehicles that are larger in terms of assets under management, analysts will cover new and/or small vehicles if they have merit. In addition, Morningstar frequently canvases its analyst team, internal consulting units, and external users of Morningstar's research to identify offerings that might merit coverage. Regional coverage committees internal to the manager research team must approve all coverage decisions. Morningstar uses the same coverage criteria globally; for Australia and New Zealand in particular, please refer to the section above titled "Australia and New Zealand."

Certain investments are designated as ineligible for analyst-assigned ratings in Morningstar's Investment Research Integrity Policy for Manager Research. These include investments managed by Morningstar and investments that track Morningstar indexes that incorporate discretionary inputs

assigned by Morningstar employees on an ongoing basis, such as Morningstar Economic Moat Ratings or ESG Risk Ratings.

**People: Actively Managed Strategies**

For actively managed strategies, the overall quality of a strategy's investment team is a significant key to a strategy's ability to deliver superior performance relative to its benchmark and/or peers. Evaluating an investment team requires that analysts assess, among other things, the individuals who make the key decisions on the portfolio; if there is more than one person in charge, how conflicts are resolved; resources that directly support the managers' work on the strategy; other resources that are not part of the team; the expertise and relevance of available resources to the strategy; and how incentive pay influences decision-making and team stability.

The relevant personnel are judged along several axes:

► Experience & ability
► Fit & structure
► Workload
► Communication/information flow
► Temperament
► Alignment of interests
► Key-person risk
► Team stability

**People: Passively Managed Strategies**

For passively managed strategies, the People Pillar is evaluated based on the relevant team/personnel responsible for the vehicles on their ability to closely track an index. The evaluation is performed at the Morningstar Category Broad Group-level within a given asset manager, as defined by Morningstar's Branding Name data point. For example, all passive vehicles evaluated by analysts tracking equity indexes at a given Branding Name will receive the same People Pillar rating. Exceptions can be made with ratings committee approval, but these cases are rare and are expected to remain so.

The relevant team/personnel is evaluated on similar axes as actively managed strategies but with a focus on the ability to deliver tight tracking performance, including use of technology in assisting one's job.

**Process: Actively Managed Strategies**

For actively managed strategies, Morningstar analysts are style-agnostic, meaning that, for equity strategies, they do not prefer value to growth or momentum, or vice versa. For fixed-income strategies, both high-quality and credit-sensitive styles are viable. For multi-asset strategies, a wide range of approaches to asset allocation can succeed. Analysts look for strategies with a performance objective and investment process (for both security selection and portfolio construction) that is sensible, clearly defined, and repeatable. It must also be implemented effectively. In addition, the portfolio should be

constructed in a manner that is consistent with the investment process and performance objective. Analysts seek to understand the context in which managers think about risk and how this is expressed when constructing the portfolio. Morningstar analysts make extensive use of Morningstar's global database and holdings-based analytical capabilities to evaluate the portfolio. Analysts look for strategies with a process distinctive enough to increase the potential for long-term success.

More specifically, analysts seek to understand:

▶ The investment philosophy that underpins the strategy;
▶ The key "edge" of the process as executed by the manager;
▶ Elements that are systematic and repeatable, if any;
▶ The fit of the process with the resources backing the strategy and with the size of the asset base tied to the strategy (including all vehicles across all domiciles);
▶ Whether the process has been consistently applied, as demonstrated by the composition of the portfolio over time;
▶ The risks entailed in the process, from a portfolio-bias point of view and from an ability-to-execute point of view;
▶ The managers' approach to risk management;
▶ Analysts' expectations for performance in different market environments, assuming the process is adhered to;
▶ Whether there is reason to believe the process can add value across the cycle versus the relevant benchmark or category on a risk-adjusted basis;
▶ The suitability of the strategy for different types of investors given the risks one would expect to see in its portfolio; and
▶ Any historical changes in approach or style, and the reasons for those changes.

**Process: Passively Managed Strategies**

For passively managed strategies, Morningstar analysts evaluate the Process Pillar by considering the construction of the index being tracked and the approach employed by the asset manager in tracking the index. All funds in similar opportunity sets tracking the same index will therefore receive the same Process Pillar rating unless the ratings committee approves an exception based on a given manager's competence in tracking the index effectively. Analysts look for strategies tracking an index with characteristics that can increase the potential for long-term success relative to their category peers on a risk-adjusted basis over time.

More specifically, the following factors are examined:

▶ The opportunity for actively managed investments to outperform passively managed investments in the investment opportunity set for funds in the category;
▶ The extent to which the portfolio of the index is representative of the investment opportunity set for funds in the category;
▶ The level of diversification of the portfolio of the index;

▸ Nuances in the construction of the index that affect the investment merit and/or that result in additional risks;

▸ For strategic-beta strategies,[1] whether there is reason to believe the process can add value across the cycle versus the relevant benchmark or category on a risk-adjusted basis;

▸ Portfolio management approaches and techniques in tracking the index performance and handling the changes of the index, such as index rebalancing and reconstitutions.

**Parent**

Morningstar believes the parent organization is important in evaluating both active and passive funds. Although other factors may have more immediate impact, they would not be durable without backing from the asset management firm. Further, the asset manager and its management set the tone for key elements of Morningstar's evaluation, including capacity management, risk management, recruitment and retention of talent, and firmwide policies, such as incentive pay, which drive or impede the alignment of the firm's interests with those of fund investors.

Beyond these operational areas, Morningstar analysts prefer firms that have a culture of stewardship and put investors first to those that are too heavily weighted to salesmanship. The former tend to operate within their circle of competence, do a good job of aligning manager interests with those of investors in their funds, charge reasonable fees, communicate well with strategy investors, and treat investors' capital as if it were their own. Firms oriented to putting their own interests too much to the fore might be characterized by their view of investors as sales opportunities—they tend to offer faddish products in an attempt to gather assets and have higher charges and incentive programs that do a poor job of aligning managers' interests with those of investors. Although relatively few firms fall obviously to one extreme or another, determining where an asset manager falls on the spectrum is a key part of the parent research approach.

Key areas of evaluation include:

▸ Recruitment and retention of talent
▸ Organizational structure
▸ Capacity management
▸ Organizational and business strategy
▸ Quality of product lineup
▸ Alignment of interests with investors
▸ Regulatory compliance
▸ Investment/group culture

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1 Strategic-beta strategies are vehicles that track indexes employing rules-based strategies to generate excess returns and/or to alter the risk profile relative to more-traditional benchmarks. The Medalist Rating methodology does not, however, treat vehicles tracking market-capitalization-weighted value or growth indexes as strategic beta, irrespective of any strategic-beta flag associated with them.

**Pillar Assignment: Indirectly, by Analyst**

In some circumstances, Morningstar will map fundamental pillar ratings assigned to vehicles that are not covered Directly, by Analysts. This is achieved by mapping the pillar ratings that analysts have assigned to vehicles they cover to uncovered vehicles that are related in some way to the vehicles analysts cover. These relationships can take a few forms, such as when an uncovered vehicle follows the same strategy as a covered vehicle or when an uncovered vehicle shares the same parent firm as a covered vehicle.

The following section explains these relationships, breaking the mapping down by strategy type and pillars that are mapped.

**Actively Managed and Passively Managed Strategies**
*People and Process Pillars Mapped*
When an analyst covers a vehicle that follows a given strategy (as codified by Morningstar's StrategyID data point), Morningstar maps the covered vehicle's People and Process Pillar ratings to any other uncovered vehicles that follow the same strategy (that is, share the same StrategyID). Morningstar maps the People and Process Pillar to uncovered variable annuity or variable life insurance vehicles using the SecID of the covered vehicle underlying the variable product.

This ensures that the analyst's view is leveraged whenever available and promotes consistency when assigning People and Process Pillar ratings to vehicles that follow the same strategy.

**Actively Managed and Passively Managed Strategies**
*Parent Pillar Mapped*
When an analyst covers a vehicle that is associated with a given parent firm (as codified by Morningstar's Branding Name ID data point), Morningstar maps the covered vehicle's Parent Pillar ratings to any other uncovered vehicles associated with the same parent (that is, share the same Branding Name ID).

This ensures that the analyst's view is leveraged whenever available and promotes consistency when assigning Parent Pillar ratings to vehicles associated with a given parent firm.

**Passively Managed Strategies**
*People Pillar Mapped*
When an analyst covers a passive vehicle, Morningstar associates the People Pillar rating assigned to that vehicle with all passive offerings with the same Branding Name/Morningstar Category Broad Group combination. This results in all passively managed vehicles in the same Morningstar Category Broad Group, offered by the same asset manager, inheriting the same analyst-assigned People rating.

This ensures that the analyst's view is leveraged whenever available and promotes consistency when assigning People Pillar ratings to vehicles associated with a given manager.

**Passively Managed Strategies**

*Process Pillar Mapped*

When an analyst covers a passively managed vehicle that tracks a particular index (as codified by Morningstar's FundID data point for indexes), Morningstar associates the Process Pillar rating assigned to that vehicle with the index concerned.

Morningstar then maps the Process Pillar rating associated with a given index (identified by the index's FundID data point) to any other uncovered passively managed vehicles where the index tracked shares the same FundID, provided the uncovered vehicles do not share the same StrategyID as any of the covered vehicles from which the index's Process Pillar rating was mapped. If they do share the same StrategyID, they inherit the Process rating via Strategy ID rather than via the index. If the Process Pillar rating associated with an index in a given Morningstar Category differs from those in other Morningstar Categories, uncovered passive vehicles tracking the same index in that category can only inherit the rating associated with that index/category combination. Where there are no covered vehicles tracking the same index as an uncovered vehicle in a category, the uncovered vehicles inherit the Process Pillar rating from the vehicle with the largest asset base tracking the same index, regardless of category.

This ensures that the analyst's view is leveraged whenever available and promotes consistency when assigning Process Pillar ratings to passively managed vehicles associated with a given index.

**Pillar Assignment: Directly, by Algorithm**

Morningstar manager research analysts and quantitative researchers have developed rules-based, algorithmic models to expand their coverage beyond ratings assigned directly or indirectly by analysts. These models algorithmically derive pillar ratings for vehicles not assigned ratings directly or indirectly by analysts. These pillar ratings are then used to derive each vehicle's Morningstar Medalist Rating as described elsewhere in this methodology.

With this algorithmic approach, Morningstar can expand its coverage of eligible vehicles. Additionally, the algorithmic approach allows for monthly updates of each vehicle's rating, a much higher frequency than the roughly annual update schedule that analysts observe when assigning ratings. When pillar ratings are assigned Directly, by Algorithm, the overall rating is assessed on a monthly cadence—utilizing a month-end date, on an approximate one-month lag.

To be eligible for pillar ratings assigned by algorithm, a vehicle should meet the following requirements:

▸ The oldest share class of the Strategy (as codified by Morningstar's StrategyID data point) should be at least one year old.
▸ It should not be dormant.
▸ It should be associated with a valid Branding Name.
▸ It should be classified as one of the following investment types: open-end fund, exchange-traded fund, separately managed account, model portfolio, collective investment trust, variable annuity subaccount, or variable life subaccount.

▶ It should not currently have a pillar rating for the pillar being rated assigned directly or indirectly by an analyst.

▶ It should reside in a Morningstar Category that Morningstar has classified as eligible to receive ratings. (Some Morningstar Categories are ineligible for rating; this is typically because they are either too small or too heterogeneous to support credible comparative ratings.)

▶ It should be in one of the following Morningstar Category Groups: equity, fixed income, municipal fixed income, allocation, target date, preferred stock, or convertibles.

▶ It should be classified in one of the following regional Morningstar Category systems: US, EAA, Canada, Korea, India, or Japan.

**Algorithmic Pillar Evaluation Methodology**

Morningstar uses a series of rules-based models working in unison to algorithmically assess a vehicle and assign the People, Process, and Parent Pillar ratings to it. Distinct models are applied to actively and passively managed vehicles to evaluate the People and Process Pillars. The model used to rate the Parent Pillar is the same for both actively and passively managed vehicles. Medalist Rating Price Scores are algorithmically determined for both analyst-covered and uncovered vehicles by generating a score based on vehicles' fee ranks within their Morningstar Categories. The models are designed to be transparent and consistent and to deliver efficacious ratings on a category-relative basis across the universe of funds not covered by Morningstar analysts. Morningstar Medalist Ratings are derived from the pillar ratings, whether algorithmic or analyst-driven, as specified elsewhere in this methodology.

**Active People Pillar Evaluation Methodology**
*(45% of fundamental pillar ratings for actively managed strategies)*
For actively managed strategies, Morningstar's methodology focuses on identifying those managers who have demonstrated the most risk-adjusted success relative to the category index over the past one, three, and five years. The model examines consistency and magnitude of that success over time. However, a penalty is applied where the firm behind the vehicle, as defined by its Branding Name, has had trouble retaining fund managers, as this suggests that a manager at the firm has a below-average chance of remaining in place. The model also provides a reward if a manager invests more than USD 500,000 into any vehicle in the StrategyID being rated, reflecting our research showing that managers with significant amounts of their own money invested in a fund have fared better on a risk-adjusted basis over time than those who do not.

To perform the above evaluations for the People Pillar for actively managed strategies, Morningstar uses the following data points. Data with a currency parameter not in USD—for example, performance data for most vehicles ex-US are converted to USD for comparability.[2] The data points, except for (1) those at branding level and (2) Fund Manager Successful Experience, are percentile-ranked within their Morningstar Category before being included in the score. Branding-level data points are percentile-ranked against those of other brands globally before being included in the score. The Fund Manager

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2 Data points are converted at the relevant monthly spot rate. For performance, each month's return is converted to USD at the relevant spot rate for that month, and the converted monthly returns are used to calculate longer-term performance.

Successful Experience data point is percentiled within its Morningstar Category Region (for example, US, EAA, India, and so on) filtered by Morningstar Category Broad Group. As percentile ranks may differ for the same data point and differ across vehicles under the same strategy, they are averaged by asset weight to ensure consistency.

To derive the People Pillar rating from the data points below, Morningstar takes the weighted average score plus the Max Manager Ownership adjustment factor and applies the following thresholds:
>= 0, <= 0.1 → Low (-2)
> 0.1, <= 0.325 → Below Average (-1)
> 0.325, <= 0.675 → Average (0)
> 0.675, <= 0.9 → Above Average (1)
> 0.9, <= 1 → High (2)

**Fund Manager Successful Experience (67.5%)**
Tenure-weighted average of the successful manager experience values for the managers listed on the fund. The successful manager experience value for each manager is the total number of months over the past 10 years in which a manager achieved a positive gross-of-fee excess return over the category index, minus the number of months with negative ones.
*Percentile Group: Morningstar Category Region, filtered by Morningstar Category Broad Group*
*Percentile Level: Fund (FundID)*
*Strategy Averaging: Yes, asset-weighted*
*Smoothing: No*
*Missing Data Protocol: Rescale weights of other data points*

**Manager Information Ratio 1-Year (gross-of-fee): 7.5%**
**Manager Information Ratio 3-Year (gross-of-fee): 10%**
**Manager Information Ratio 5-Year (gross-of-fee): 15%**
Equal-weighted average of the gross-of-fee information ratios of the managers listed on the fund over each period. Manager Information Ratio is calculated by dividing manager annualized cumulative excess return over the category index by annualized manager tracking error, each calculated using a manager's entire available history of actively managed funds, including obsolete offerings. Each of the above Manager Information Ratios are further averaged over 12 monthly values to limit month-to-month volatility.
*Percentile Group: Morningstar Category*
*Percentile Level: Fund (FundID)*
*Strategy Averaging: Yes, asset-weighted*
*Smoothing: Averaged over 12 months*
*Missing Data Protocol:*
*1-year: Replace with 1-year Brand Information Ratio*
*3-year: If 1- and 3-year are both missing, replace with 3-year Brand Information Ratio; otherwise, rescale weights of other data points*

*5-year: If 1-,3-, and 5-year are all missing, replace with 5-year Brand Information Ratio; otherwise, rescale weights of other data points*

**Average Brand Information Ratio 1/3/5-Year (gross-of-fee)**
Equal-weighted averages of the gross-of-fee information ratios of the funds under a given Branding Name over each period. These data points only include actively managed funds under a brand in ratable regions, Morningstar Category Broad Groups, categories, and security types (limited to open-end funds, ETFs, separate accounts, and model portfolios). These data points substitute for Manager Information Ratios where the former are unavailable but are not otherwise used in the People Pillar score. Each of the above brand information ratios are further averaged over 12 monthly values to limit month-to-month volatility.
*Percentile Group: Global*
*Percentile Level: Branding Name*
*Strategy Averaging: Yes, asset-weighted*
*Smoothing: Averaged over 12 months*
*Missing Data Protocol (only applies if the Manager Information Ratio for the same period is also missing):*
*1-year: No pillar rating generated, no Medalist Rating generated*
*3-year, 5-year: Rescale weights of other data points*

**Average Brand Retention Ratio 5-Year**
Average manager retention of the brand across the past five single-year windows. This data point is not calculated for brands where the average manager count across all five one-year periods is below 5. If it is in the bottom decile of all brands globally, the raw People Pillar score for the strategy is decreased by 0.10.
*Percentile Group: Global*
*Percentile Level: Branding Name*
*Strategy Averaging: Yes, asset-weighted*
*Smoothing: No*
*Missing Data Protocol: No adjustment*

**Average Brand Longest Manager Tenure**
Asset-weighted average of the longest manager tenure associated with each fund under the brand. Longest manager tenure for a fund is defined as the number of days that the longest-tenured manager on the fund has been listed on that fund. If it is in the bottom decile of all brands globally, the raw People Pillar score for the strategy is decreased by 0.10.
*Percentile Group: Global*
*Percentile Level: Branding Name*
*Strategy Averaging: Yes, asset-weighted*
*Smoothing: No*
*Missing Data Protocol: No adjustment*

**Max Manager Ownership**

The maximum manager investment into any fund under the strategy. If Max Manager Ownership is at or above USD 500,001, the raw People Pillar score percentile for the strategy is increased by 0.10. This rewards the strategy being evaluated without affecting the rating of other strategies in the category.

*Percentile Group: NA*
*Percentile Level: NA*
*Strategy Averaging: No*
*Smoothing: No*
*Missing Data Protocol: No adjustment*

**Passive People Pillar Evaluation Methodology**
*(10% of fundamental pillar ratings for passively managed strategies)*

Most passively managed vehicles are either rated directly by an analyst or inherit an analyst-assigned People Pillar score. This occurs because, for passively managed vehicles, analysts rate the People Pillar at the Branding Name level, subdivided by Morningstar Category Broad Group, and this pillar rating is mapped to uncovered managed vehicles with the same Branding Name/Morningstar Category Broad Group combination, enabling analysts' People evaluations to cover large numbers of funds. Given this and the marginal impact we observe for quantitative People factors and passive outcomes, the algorithmic People evaluation sets all People Pillar ratings to Average for passive vehicles that are not rated directly by an analyst and that do not inherit an analyst-assigned People Pillar rating.

*Percentile Group: NA*
*Percentile Level: NA*
*Strategy Averaging: No*
*Smoothing: No*

**Active Process Pillar Evaluation Methodology**
*(45% of fundamental pillar ratings for actively managed strategies)*

For actively managed and strategic-beta strategies (see footnote 1 above), Morningstar's methodology focuses first on identifying those strategies that have demonstrated the most risk-adjusted success relative to the category index over the past one, three, and five years. The risk-adjusted success of strategies within the same Morningstar Category Broad Group under the same brand is also considered over three, five, and 10 years. This helps to recognize whether a strategy is backed by organizational strength in its Morningstar Category Broad Group rather than succeeding against the odds.

Similarly, to identify when past performance may be less repeatable, penalties are applied as follows: For equity strategies, Morningstar deducts 0.05 from the raw Process score when their Size/Style drift is in the category's top decile (highest decile of drift) over the last three years. For fixed income and allocation strategies, Morningstar deducts 0.05 from their raw Process scores when their weighted R-squared falls in the category's bottom decile. In both cases, the scores demonstrate characteristics that, while not inherently bad, may impinge on the future repeatability of the strategy's past performance relative to category peers.

To perform the above evaluations for the Process Pillar for actively managed strategies, Morningstar uses the following data points. Data with a currency parameter not in USD—for example, performance data for most vehicles ex-US—are converted to USD for comparability (see footnote 2). The data points are percentile-ranked within their Morningstar Category before being included in the score. As percentile ranks may differ for the same data point across vehicles under the same strategy, they are averaged by asset weight to ensure consistency.

To derive the Process Pillar rating from the data points below, Morningstar takes the weighted average score plus the Max Manager Ownership adjustment factor and applies the following thresholds. However, if a fund is missing its three- and five-year information ratios, the Process score cannot be scored either High (2) or Low (-2), as the limited data availability implies a lower degree of certainty in our evaluation:

>= 0, <= 0.1 → Low (-2)

> 0.1, <= 0.325 → Below Average (-1)

> 0.325, <= 0.675 → Average (0)

> 0.675, <= 0.9 → Above Average (1)

> 0.9, <= 1 → High (2)

**Information Ratio 1-Year (gross-of-fee): 15%**
**Information Ratio 3-Year (gross-of-fee): 20%**
**Information Ratio 5-Year (gross-of-fee): 35%**
The gross-of-fee information ratio of the share class over each period. Calculated by dividing annualized cumulative excess return over the category index by annualized tracking error. Each of the above information ratios are further averaged over 12 monthly values to limit month-to-month volatility.
*Percentile Group: Morningstar Category*
*Percentile Level: Share Class*
*Strategy Averaging: Yes, asset-weighted*
*Smoothing: Averaged over 12 months*
*Missing Data Protocol:*
*1-year: No pillar rating generated, no Medalist Rating generated*
*3-year: Rescale weights of other data points*
*5-year: Rescale weights of other data points*

**Brand / Asset Class Risk-Adjusted Success Ratio 3-Year: 7.5%**
**Brand / Asset Class Risk-Adjusted Success Ratio 5-Year: 11.25%**
**Brand / Asset Class Risk-Adjusted Success Ratio 10-Year: 11.25%**
The percentage of actively managed funds in a given Morningstar Category Broad Group under a brand that both survive (don't go obsolete) and rank in the top half of the category on a gross-of-fee, risk-adjusted basis (as defined by information ratio using the category index as the benchmark).
*Percentile Group: Morningstar Category*
*Percentile Level: Fund*
*Strategy Averaging: Yes, asset-weighted*

*Smoothing: No*
*Missing Data Protocol:*
*3-year: Rescale weights of other data points*
*5-year: Rescale weights of other data points*
*10-year: Rescale weights of other data points*

**Size/Style Drift 3-Year (Equity)**
Calculated as an equal-weighted average of the fund's three-year size drift and three-year style drift, each percentile-ranked within Morningstar Category at the FundId level. If it is in the category's top decile (highest decile of drift), the raw Process score for the strategy is decreased by 0.05. This data point is only used for funds that are classified in the Equity Morningstar Category Broad Group.

Component definitions:
3-Year Size Drift: Standard deviation of the size scores of all available portfolios over the previous three years.
3-Year Style Drift: Standard deviation of the style scores of all available portfolios over the previous three years.
*Percentile Group: Morningstar Category*
*Percentile Level: Fund*
*Strategy Averaging: Yes, asset-weighted*
*Smoothing: No*
*Missing Data Protocol: No adjustment*

**Weighted R-Squared (Fixed Income, Allocation)**
Calculated as a weighted average of a share class' one-year (20%), three-year (30%), and five-year (50%) R-squared values, which have each been smoothed over 12 months. R-squared is obtained from capital asset pricing model regression using gross-of-fee returns converted to USD, with the Morningstar Category index as the benchmark (see footnote 2). If it is in the category's bottom decile (lowest decile of Weighted R-Squared), the raw Process score for the strategy is decreased by 0.05. This data point is only used for funds that are classified in the Fixed Income or Allocation Morningstar Category Broad Groups.
*Percentile Group: Morningstar Category*
*Percentile Level: Fund*
*Strategy Averaging: Yes, asset-weighted*
*Smoothing: Averaged over 12 months*
*Missing Data Protocol: No adjustment*

**Passive Process Pillar Evaluation Methodology**
*(80% of fundamental pillar ratings for passively managed strategies)*
The Process Pillar rating is the most important of the three fundamental pillars in the passives rating. As with analyst-driven passives Process Pillars, the algorithmic Process Pillar rating attempts to (1) identify the attractiveness of a passive approach in a given Morningstar Category relative to actively managed offerings, and (2) assess the attractiveness of the index being tracked based on its characteristics

relative to the typical opportunity set in the category. In the latter step, the index's representativeness of the overall opportunity set for funds in the category, its level of diversification, and turnover rates that might affect potential tracking error are all considered. All vehicles tracking the same index receive the same Process Pillar rating. The Process score for passives is averaged by benchmark, FundID, and StrategyID to ensure consistency.

The Passive Process model calculates base and swing scores to set the overall negative 2 to positive 2 Process Pillar rating. First, a negative 1 to positive 1 base score is assigned based on whether active or passive funds perform better in each category. If actively managed funds perform better in a given category, the model assigns a lower base score; if passive funds perform better, a higher base score is assigned. The swing score can increase or decrease the base score by 1 point. The base and swing scores are calculated and combined as below:

**Base Score Overview**

The base score is derived from two data points that assess how passively managed funds perform relative to actively managed funds in a Morningstar Category. The scoring outcome for each of the two data points, as determined by their thresholds and corresponding score values, are summed together to arrive at the base score.

1. Active vs Passive Information Ratio - 10 Yr

Measures how active funds in a category perform relative to passive funds, adjusted for volatility. This data point is derived by first calculating gross-of-fee asset-weighted average returns for both actively and passively managed funds within the category. A category level information ratio is then calculated using the active/passive category average returns, by calculating 1) the average monthly excess return of the active category average versus the passive category average and dividing that by 2) the tracking error of the active category average, utilizing the passive category average as a benchmark.

$$\text{Active vs Passive Information Ratio} = \frac{\text{Active Cat Avg Return - Passive Cat Avg Return}}{\text{Tracking error of Active Category Average Against Passive Category Average}}$$

*Score thresholds: 0.20, 0.35, 0.65, 0.80*
*Score outcomes per threshold: 0.5, 0.25, 0, -0.25, -0.5*
*Percentile Group: Morningstar Category Broad Group*
*Percentile Level: Share Class*
*Strategy Averaging: No*
*Smoothing: Averaged over 12 months*
*Missing Data Protocol:*
*If there is less than 10 years of data, periods of three years or more will be used*
*Otherwise, impute neutral score of 0*

2. Average Active vs Passive Information Ratio - 3 yr rolling over 25 years

As above, but calculated over monthly rolling three-year periods extending back 25 years from the latest month-end prior to ratings production. The average of all 300 rolling three-year observations is then calculated for each Morningstar Category and percentiled against all passively managed share classes in the relevant Morningstar Category Broad Group.

*Score thresholds: 0.20, 0.35, 0.65, 0.80*
*Score outcomes per threshold: 0.5, 0.25, 0, -0.25, -0.5*
*Percentile Group: Morningstar Category Broad Group*
*Percentile Level: Share Class*
*Strategy Averaging: No*
*Smoothing: Averaged over 12 months*
*Missing Data Protocol: Impute neutral score of 0*

**Swing Score Overview**

The swing score can be broken down into three subscores:

- ▸ Representativeness: Measures how closely the fund's portfolio represents typical category exposures. More representative portfolios score higher, while less representative portfolios score lower.
- ▸ Diversification: Measures the level of a portfolio's diversification. More concentrated portfolios score lower, while more diversified portfolios score higher.
- ▸ Tracking approach (only applicable for equity): Penalizes funds with portfolios that might cause tracking issues—for example, a high turnover ratio.

Each of these sub pillar scores are summed together for each share class to obtain the total raw swing score. This score is then normalized (z-scored), divided by 2, and capped at negative 1 to positive 1 to obtain the final swing score. In the final step, the negative 1 to positive 1 base score and negative 1 to positive 1 swing score are averaged across all share classes tracking the same benchmark. They are then combined and rounded to the nearest integer to obtain the final overall negative 2 to positive 2 process score. If a benchmark is unavailable, the scores are averaged across all share classes in the same strategy (as codified by StrategyID); if StrategyID is not available, the scores are averaged across all share classes in the fund (as codified by FundID).

**Swing Score Data Points for Passively Managed Equity Vehicles**

To calculate the swing score for equity vehicles, Morningstar uses the following data points. Data with a currency parameter not in USD—for example, performance data for most vehicles ex-US—are converted to USD for comparability (see footnote 2).

- ▸ Equity Process Data Points
    - ▸ Representativeness:
        - ▸ Tracking Error 1-Year
        - ▸ Tracking Error 3-Year

Tracking error of a vehicle's net-of-fee return against the Morningstar Category index over the indicated periods. Lower tracking errors are rewarded.

*Score thresholds: 0.10, 0.325, 0.675, 0.90*
*Score outcomes per threshold: 1.67, 1.33, 1, 0.67, 0.33*
*Percentile Group: Morningstar Category Broad Group*
*Percentile Level: Share Class*
*Strategy Averaging: No*
*Smoothing: No*
*Missing Data Protocol:*
*Fill with strategy or benchmark median*
*Otherwise, impute neutral score of 1*

▸ R-squared 3-Year

R-squared of a vehicle's net-of-fee returns regressed against the Morningstar Category index returns for the period. Higher R-squareds are rewarded.

*Score thresholds: 0.10, 0.325, 0.675, 0.90*
*Score outcomes per threshold: 0.33, 0.67, 1, 1.33, 1.67*
*Percentile Group: Morningstar Category Broad Group*
*Percentile Level: Share Class*
*Strategy Averaging: No*
*Smoothing: No*
*Missing Data Protocol:*
*Fill with strategy or benchmark median*
*Otherwise, impute neutral score of 1*

▸ Number of Equity Holdings

The number of equity holdings in the portfolio, percentile ranked relative to the number of equity holdings for each passively managed vehicle in the same category. Higher percentile ranks of equity holdings, indicating a higher number of equity holdings relative to peers, are rewarded.

*Score thresholds: 0.10, 0.325, 0.50, 0.75*
*Score outcomes per threshold: 1, 2, 3, 4, 5*
*Percentile Group: Morningstar Category*
*Percentile Level: Share Class*
*Strategy Averaging: No*
*Smoothing: No*
*Missing Data Protocol:*
*Replace with benchmark median*
*Otherwise, impute neutral score of 3*

▸ Average Market Cap

The average market capitalization of a fund's holdings relative to the category average for passives. Lower deviation in average market cap from the category average is rewarded.

*Score thresholds: -1, -0.5, 0.5, 1*

*Score outcomes per threshold: 0.5, 1.5, 2.5, 1.5, 0.5*

*Scaling: Z-scored within Morningstar Category*

*Scaling Level: Share Class*

*Strategy Averaging: No*

*Smoothing: No*

*Missing Data Protocol:*

*Replace with benchmark median*

*Otherwise, impute neutral score of 1.5*

► Euclidian Distance of Equity Sector Weights From Category Index's

Measures the difference in a fund's sector weights from those of the category index. This is calculated as the square root of the sum of the differences in each sector's weight. For example, the formula for comparing a fund (F) with an index (I), each with 11 sectors, would be as below. Lower values are rewarded.

$$d(F, I) = \sqrt{\sum_{i=1}^{11} (F_i - I_i)^2}$$

*Score thresholds: 0.10, 0.325, 0.675, 0.90*

*Score outcomes per threshold: 5, 4, 3, 2, 1*

*Percentile Group: Morningstar Category*

*Percentile Level: Share Class*

*Strategy Averaging: No*

*Smoothing: No*

*Missing Data Protocol:*

*Fill with strategy or benchmark median*

*Otherwise, impute neutral score of 3*

► Size Factor Exposure

Morningstar Risk Model measure of a vehicle's exposure to the size factor when compared with category peers. Lower deviations from the category average are rewarded.

*Score thresholds: -1, -0.5, 0.5, 1*

*Score outcomes per threshold: 0.5, 1.5, 2.5, 1.5, 0.5*

*Scaling: Z-scored within Morningstar Category*

*Scaling Level: Share Class*

*Strategy Averaging: No*

*Smoothing: No*

*Missing Data Protocol:*

*Replace with benchmark median*

*Otherwise, impute neutral score of 1.5*

▶ Value/Growth Factor Exposure

Morningstar Risk Model measure of a vehicle's exposure to the value/growth factor when compared with category peers. Lower deviations from the category average are rewarded.

*Score thresholds: -1, -0.5, 0.5, 1*
*Score outcomes per threshold: 1, 3, 5, 3, 1*
*Scaling: Z-scored within Morningstar Category*
*Scaling Level: Share Class*
*Strategy Averaging: No*
*Smoothing: No*
*Missing Data Protocol:*
*Replace with benchmark median*
*Otherwise, impute neutral score of 3*

▶ Diversification

▶ % of Asset in Top 10 Holdings

The percentage of assets in the vehicle's top-10 holdings. Higher concentration levels are penalized.

*Score thresholds: 50, 50.5, 51, …74.5, 75*
*Score outcomes per threshold: 0, -0.1, -0.2, … -4.9, -5*
*Percentile Group: NA*
*Percentile Level: NA*
*Strategy Averaging: No*
*Smoothing: No*
*Missing Data Protocol:*
*Replace with benchmark median*
*Otherwise, impute neutral score of 0*

▶ Number of Equity Holdings/Category Average

Number of equity holdings divided by the average number of equity holdings in the Morningstar Category (including both actively and passively managed vehicles). A value of 0.5 would mean the fund has half as many equity holdings as the category average, while a value of 2 would mean the fund has double the equity holdings as the average fund in the category. High values are rewarded, and low values are penalized.

*Score thresholds: 0.5, 0.51, … 1.99, 2*
*Score outcomes per threshold: -2.5, -2.45, … 2.48, 2.5*
*Percentile Group: NA*
*Percentile Level: NA*
*Strategy Averaging: No*
*Smoothing: No*
*Missing Data Protocol:*
*Replace with benchmark median*
*Otherwise, impute neutral score of 0*

    ▸ Tracking Approach

        ▸ Turnover Ratio

Measure of how often a fund's holdings are trading, stated as percentage figure. High turnover is penalized.

*Score thresholds: 50, 51, … 99, 100*

*Score outcomes per threshold: 0, -0.1, … -4.9, -5*

*Percentile Group: Morningstar Category*

*Percentile Level: Share Class*

*Strategy Averaging: No*

*Smoothing: No*

*Missing Data Protocol:*

*Fill with strategy median*

*Otherwise, impute neutral score of 0*

**Swing Score Data Points for Passively Managed Fixed-Income Vehicles**

To calculate the swing score for passively managed fixed-income vehicles, Morningstar uses the following data points. Data with a currency parameter not in USD—for example, performance data for most vehicles ex-US—are converted to USD for comparability (see footnote 2).

▸ Fixed-Income Process Data Points

    ▸ Representativeness

        ▸ Tracking Error 1-Year

        ▸ Tracking Error 3-Year

Tracking error of a vehicle's net-of-fee return against the Morningstar Category index over the indicated periods. Lower tracking errors are rewarded.

*Score thresholds: 0.10, 0.325, 0.675, 0.90*

*Score outcomes per threshold: 1.67, 1.33, 1, 0.67, 0.33*

*Percentile Group: Morningstar Category Broad Group*

*Percentile Level: Share Class*

*Strategy Averaging: No*

*Smoothing: No*

*Missing Data Protocol:*

*Fill with strategy or benchmark median*

*Otherwise, impute neutral score of 1*

        ▸ R-squared 3-Year

R-squared of a vehicle's net-of-fee returns regressed against the Morningstar Category index returns for the period. Higher R-squareds are rewarded.

*Score thresholds: 0.10, 0.325, 0.675, 0.90*

*Score outcomes per threshold: 0.33, 0.67, 1, 1.33, 1.67*

*Percentile Group: Morningstar Category Broad Group*

*Percentile Level: Share Class*

*Strategy Averaging: No*
*Smoothing: No*
*Missing Data Protocol:*
*Fill with strategy or benchmark median*
*Otherwise, impute neutral score of 1*

    ▸ Standard Deviation 1-Year
    ▸ Standard Deviation 3-Year

The standard deviation of a vehicle's net-of-fee returns over the above periods.
*Score thresholds: 0.10, 0.325, 0.675, 0.90*
*Score outcomes per threshold: 1.67, 1.33, 1, 0.67, 0.33*
*Percentile Group: Morningstar Category*
*Percentile Type: Share Class*
*Strategy Averaging: No*
*Smoothing: No*
*Missing Data Protocol:*
*Fill with strategy or benchmark median*
*Otherwise, impute neutral score of 1*

    ▸ Surveyed Effective Duration

The effective duration of the fund's bond holdings reported by fund managers. Lower deviations from the category average are rewarded.
*Score thresholds: -1.5, -0.75, 0.75, 1.5*
*Score outcomes per threshold: 0.33, 1, 1.67, 1, 0.33*
*Scaling: Z-scored within Morningstar Category*
*Scaling Level: Share Class*
*Strategy Averaging: No*
*Smoothing: No*
*Missing Data Protocol:*
*Replace with benchmark median*
*Otherwise, impute neutral score of 1*

    ▸ Surveyed Average Credit Rating

The average credit rating of the fund's bond holdings reported by fund managers. Lower deviations from the category average are rewarded.
*Score thresholds: -1.5, -0.75, 0.75, 1.5*
*Score outcomes per threshold: 0.33, 1, 1.67, 1, 0.33*
*Scaling: Z-scored within Morningstar Category*
*Scaling Level: Share Class*
*Strategy Averaging: No*
*Smoothing: No*
*Missing Data Protocol:*

*Replace with benchmark median*
*Otherwise, impute neutral score of 1*

▸ Surveyed Yield to Maturity

The yield to maturity of a fund's bond holdings reported by fund managers.
*Score thresholds: -1.5, -0.75, 0.75, 1.5*
*Score outcomes per threshold: 0.33, 1, 1.67, 1, 0.33*
*Scaling: Z-scored within Morningstar Category*
*Scaling Level: Share Class*
*Strategy Averaging: No*
*Smoothing: No*
*Missing Data Protocol:*
*Replace with benchmark median*
*Otherwise, impute neutral score of 1*

▸ Diversification
▸ % of Asset in Top 10 Holdings

The percentage of assets in the vehicle's top-10 holdings. Higher concentration levels are penalized.
*Score thresholds: 50, 50.5, 51, ...74.5, 75*
*Score outcomes per threshold: 0, -0.1, -0.2, ... -2.45, -2.5*
*Percentile Group: NA*
*Percentile Level: NA*
*Strategy Averaging: No*
*Smoothing: No*
*Missing Data Protocol:*
*Replace with benchmark median*
*Otherwise, impute neutral score of 0*

▸ Number of Bond Holdings/Category Average

Number of bond holdings divided by the average number of holdings in the Morningstar Category (including both actively and passively managed vehicles). A value of 0.5 would mean the fund has half as many holdings as the category average, while a value of 2 would mean the fund has double the holdings as the average fund in the category. Low values are penalized.
*Score thresholds: 0.25, 0.26, ... 0.74, 0.75*
*Score outcomes per threshold: -2.5, -2.45, ... 0.05, 0*
*Percentile Group: NA*
*Percentile Level: NA*
*Strategy Averaging: No*
*Smoothing: No*
*Missing Data Protocol:*
*Replace with benchmark median*
*Otherwise, impute neutral score of 0*

**Parent Pillar Evaluation Methodology**
*(10% of fundamental pillar ratings for all strategies)*
Morningstar's methodology for algorithmic Parent Pillar evaluation attempts to identify those Parent firms that exhibit traits that, based on Morningstar's research and analysis, have been associated with stronger investor outcomes. It considers the costs of the vehicles offered by the parent, the success and durability of its offerings over time, and portfolio manager retention rates.

To perform the above evaluations for the Parent Pillar for actively managed strategies, Morningstar uses the following data points. Data with a currency parameter not in USD—for example, performance data for most vehicles ex-US—are converted to USD for comparability (see footnote 2).  To derive the Parent Pillar rating, each data point is awarded a score according to the below thresholds and score values. The scores are summed, and the Parent Pillar rating is determined by the total scores as follows. Parents with less than five years of history cannot earn a High or Low pillar rating, reflecting the lack of certainty implied by their limited history:

>= -1, <= 1.5 → Low (-2)
> 1.5, <= 2.5 → Below Average (-1)
> 2.5, <= 3.5 → Average (0)
> 3.5, <= 4.5 → Above Average (1)
> 4.5, <= 6 → High (2)

**Brand Active/Passive Fee Rank**
The average monthly fee percentile rank of the firm's active offerings and passive offerings, each considered separately.
*Score thresholds: 0.25, 0.40, 0.60, 0.70*
*Score outcomes per threshold: 3.0, 2.4, 1.8, 1.2, 0.6*
*Missing Data Protocol:*
*3-year: Impute neutral score of 1.8*

**Brand Risk-Adjusted Success Ratio (3/5/10-Year)**
The percentage of funds under the brand that both survived and beat the category median in each period as measured by net of fee Morningstar Risk-Adjusted Returns.
▸ 3-Year
*Score thresholds: 0.30, 0.60*
*Score outcomes per threshold: 0.15, 0.30, 0.40*
▸ 5-Year
*Score thresholds: 0.30, 0.55*
*Score outcomes per threshold: 0.225, 0.45, 0.60*
▸ 10-Year
*Score thresholds: 0.25, 0.40*
*Score outcomes per threshold: 0.225, 0.45, 0.60*
*Requires minimum sample size of five funds. If this is not met, the missing data protocol below applies.*
*Missing Data Protocol:*

*3-year: Impute neutral score of 0.3*
*5-year and 10-year: Impute neutral score of 0.45*

**Average Brand Longest Manager Tenure**

Asset-weighted average of the longest manager tenure associated with each fund under the brand. Longest manager tenure for a fund is defined as the number of days that the longest-tenured manager on the fund has been listed on that fund.
*Score thresholds: 0.35, 0.60*
*Score outcomes per threshold: -0.4, 0, 0.4*
*Missing Data Protocol: Impute neutral score of 0*

**Average Brand Retention Ratio 5-Year**

Average manager retention of the brand across the past five one-year periods. This data point receives a neutral score of 0 for brands with an average manager count below 5 across the five-year period.
*Score thresholds: 0.92, 0.96*
*Score outcomes per threshold: -0.4, 0, 0.4*
*Missing Data Protocol: Impute neutral score of 0*

**Average Brand Obsolete Rate 5-Year**

Average percentage of funds under the brand that went obsolete across the past five one-year periods. This data point receives a neutral score of 0 for brands with an average fund count below 5 across the five-year period.
*Missing Data Protocol: Impute neutral score of 0*

**Medalist Rating Price Score Methodology**

*(30% of rating for active strategies, with 70% on the three fundamental pillars;*
*40% of rating for passive strategies, with 60% on the three fundamental pillars)*

To evaluate a vehicle's costs, Morningstar takes the percentage rank of each vehicle's fee (at the share class level) within its Morningstar Category, with the lowest-cost funds receiving a percentage rank just below 100. The ranks are transformed into a score running continuously from negative 2.5 to positive 2.5 using the below formula.

Medalist Rating Price Score = (5 * fee percentile rank) - 2.5

Unlike the negative 2 to positive 2 score underpinning the fundamental pillar ratings, the Medalist Rating Price Score is not bucketed into integer values. The raw score is multiplied by the pillar weight and added to the ratings equation described elsewhere in this methodology. For example, if a fee ranks in the 28th percentile, its fee score is derived as follows: (5*.28) - 2.5, which is negative 1.1. The total fee score impact to the rating equation for an active fund would be:
 0.30 * -1.10  = -0.33

## Processing Logic

### Smoothing
*Applies to: Active People, Active Process*

**Use Case:** The Medalist Rating is often used as a filter for investors when shaping a portfolio. Too much volatility in the rating means more rebalancing for investors, which could ultimately hurt their returns. To improve pillar rating stability, Morningstar "smooths" certain data points that exhibit greater month-to-month volatility.

**Methodology:** To smooth a data point, Morningstar takes an equal-weighted average of its values over the past X months (where X is the smoothing window). The resulting average value is used as an input to the model for the current month. These windows, where present, are indicated in the algorithmic pillar evaluation section above.

Morningstar historically refreshes all data within the smoothing window before each monthly production. For example, the past 12 months of performance data are always refreshed, in case the data team has made some correction to historical data.

### Percentile Ranking
*Applies to: Active People, Active Process*

**Use Case:** The algorithmic pillar evaluation models rate both registered (open-end and ETF) and unregistered (separate accounts and models) vehicles simultaneously. Because public vehicles cannot choose which data to report, it would be unfair to compare them with private vehicles when taking a percentile rank.

**Methodology:** Open-end and ETF securities are only ranked against other open-end and ETF securities, while separate accounts and models are excluded from their distribution. Separate accounts and models instead are ranked by interpolating their position within the open-end/ETF distribution. This means that they are evaluated relative to open-end peers but do not affect the percentile distribution themselves.

### Consistency Across Identifiers
*Applies to: All fundamental pillars*

**Use Case:** Manager Research uses classification data points (such as Strategy Id, Fund Id, Branding Id, and so on) to ensure that groups of share classes with similar characteristics or filing properties receive identical fundamental pillar ratings. Because data between share classes under the same classifier can differ slightly, an algorithmic model could theoretically assign different pillar ratings to such share classes. Morningstar therefore applies consistency rules as follows:

▸ Active People ratings must be consistent across Strategy Id or Fund Id (if the former is missing).
▸ Active Process ratings must be consistent across Strategy Id or Fund Id (if the former is missing). For strategic-beta index funds, the rating must be consistent across funds that have the same benchmark.
▸ Passive Process ratings must be consistent across funds that have the same benchmark, Strategy Id (if benchmark is missing), and Fund Id (if benchmark and strategy are missing).
▸ Parent ratings must be consistent across Branding Name ID.
▸ Passive People ratings must be consistent across Branding Name ID and BroadCategoryGroupId.

**Methodology (Active People and Active Process):**
Take an asset-weighted average for most input data points across classification identifiers at which the rating should be consistent. The asset-weighted value is then used as the input to the model for all shares under the classifier. For example, for the Active Process model, the one-year information ratios for share classes under the same Strategy Id is replaced with an asset-weighted average of all values. The algorithmic pillar evaluation section earlier in this methodology indicates where this is and is not the case.

Data is averaged separately for open-end/ETF vehicles and separate accounts/models, should there be a classifier with share classes from both groups. This avoids data from private vehicles affecting ratings for public ones.

Asset-weighting details: Morningstar applies a four-month forward-fill and backfill to obtain net assets for share classes and converts all values to USD at the spot rate for the relevant month(s). If any share classes under a classifier are missing net assets, they are excluded from the average calculation. If all share classes under the classifier are missing net assets, then we take an equal-weighted average instead.

**Methodology (Passive Process):**
Morningstar averages all algorithmic Process Pillar ratings tied to a given tracked benchmark (focus prospectus benchmark is used in the US, primary prospectus benchmark elsewhere); if benchmark is unavailable, the scores are averaged across all share classes in the same strategy (as codified by StrategyID); if strategy is not available, the scores are averaged across all share classes in the fund (as codified by FundID).

**Methodology (Parent):**
The data used for these models is already calculated at the Branding Name ID level, so the rating is calculated at that same level, and no consistency measures are required.

**Buffering**

*Applies to: Active People, Active Process, Passive Process, Parent*

**Use Case:** Reduce pillar rating and overall Medalist Rating volatility (see Smoothing's use-case for more detail).

**Methodology:** In cases where the discrete negative 2 to positive 2 score differs from that of the previous month, look at the raw score underpinning it. If the current month's raw score is within a certain "buffer" of the relevant threshold, then override the discrete score with its previous value, thereby preventing the change.

- Active People/Process must cross the ratings threshold in question by more than 5% to change scores
- Parent must cross the relevant threshold by more than 0.4 to change scores
- Passive Process must cross the relevant threshold by more than 0.125 to change scores

Buffers are applied using the previous month's discrete score associated with the consistency level, rather than the exact share class. This handles several key edge cases, such as:

- Newly incepted share classes: Normally, these would not have a previous score to use for the buffer. However, Morningstar can apply a buffer using the previous score associated with the Strategy Id, assuming there are older share classes within the strategy.
- Share classes that switch classifiers: As an example, if a share class switches from one StrategyId to another, its new score (which should be consistent with the new strategy), should be buffered against the new strategy's previous score, not the share class' previous score (which would be associated with the old strategy).

**Medalist Rating Caps**

Morningstar also typically applies Medalist Rating caps as follows:

- Actively managed and passively managed vehicles:
  - Where the Parent Pillar is rated Low (-2), the Medalist Rating is capped at Neutral.

- Actively managed vehicles only:
  - Where both the People and Process Pillars are rated Average (0), the Medalist Rating is capped at Bronze.
  - Where the People or Process Pillar is rated Below Average (-1) or Low (-2), the Medalist Rating is capped at Neutral.

- Passively managed vehicles only:
  - Where the Process Pillar is rated Average (0), the Medalist Rating is capped at Bronze.
  - Where the Process Pillar is rated Below Average (-1)  or Low (-2), the Medalist Rating is capped at Neutral (2).

- ▶ Model portfolios only:
  - ▶ If 18 months have not elapsed since model activation, the Medalist Rating is capped at Bronze.

**Data Coverage**

The Data Coverage % data point is a summary metric describing the level of data completeness used to generate the People, Process, and Parent scores (if the Medalist Rating Price Score is missing, no rating will be published, so it is not included in the Data Coverage data point). If the pillar is assigned directly or indirectly by analysts, the pillar has complete data availability, as no model was used to estimate the pillar rating. If the pillar is assigned Directly, by Algorithm, Morningstar counts the number of data points feeding the pillar models and counts whether the vehicle has strategy-specific data available. A simple percentage is calculated per pillar. Each pillar-completeness metric is scaled by the weights listed in the section "Calculate Weighted Medalist Rating Score." ⭕

### Appendix A: FAQ on Data Inputs to Algorithmic Model

**Are all the input variables used in each pillar model?**
No. The input variables depend on the pillar model as specified in the methodology. For example, for People Pillar, the model looks at the information ratios for each manager over the course of their career, while for Process Pillar, the model looks at the information ratios for the strategy being rated.

**How does Morningstar handle category changes?**
Input data reflects information available at a given time. Therefore, historical data incorporates the fund's historical category. Category changes can occur because a fund's portfolio positioning or objective changes in a way that makes it a better fit in a different category or because our classification methodology changes in a way that makes a different category a better fit for the fund. For performance-related metrics where Morningstar requires a time series of a fund's category average performance or category index return, Morningstar uses the monthly track record reflecting the fund's category for that specific month.

**How does Morningstar handle multiple analyst-assigned Process ratings to passive products tracking the same benchmark?**
Morningstar selects the largest share class by assets under management and then applies the analyst-assigned Process rating to all other passive products tracking the same benchmark.

**When are the input data and ratings updated?**
The input data utilized in the ratings model is updated on the third Monday of each month. If the third Monday is a holiday, the data is updated on the fourth Monday of the month.

**When do new funds receive a rating?**
► The oldest share class of the strategy (as codified by Morningstar's StrategyID data point) must be at least one year old for any vehicles in the strategy to receive a rating. If that criterion is met, other share classes within a strategy receive a rating when they have a full month of data present. For example, assuming the oldest share class in a StrategyID is at least one year old, if a new share class' inception is on May 12 and the April production run completes on May 18, then that share class will not receive a rating for the month of April as it has no data for the month of April. Further, when the May production runs on June 18, the share class will not receive a rating for the month of May because the data for the month of May is not complete. The first rating the share class will receive will be a rating for the month of June when June production runs on July 18.

### Appendix B: FAQ on Eligibility for Algorithmic Rating Assignment

**What are the universes covered?**
Algorithmically generated Morningstar Medalist Ratings cover open-end funds, exchange-traded funds, separate accounts, model portfolios, collective investment trusts, variable annuity subaccounts, and variable life subaccounts.

**How does Morningstar assign pillar ratings to variable annuity and variable life subaccounts?**
A subaccount receives pillar ratings when the underlying FundID has at least one class with a Morningstar Medalist Rating. The subaccount inherits the Parent, Process, and People Pillar ratings of the underlying fund's SecID.

**What is the fee used in the ratings for variable annuity and variable life subaccounts?**
The fee data point used is the Total Net Expense Ratio. It includes the Insurance Expense and the underlying fund expenses. The Insurance Expense includes M&E Risk Charge, Administrative Charge, and Distribution Charge. These are transformed into the Medalist Rating Price Scores by overlaying them on the fee distributions of the relevant open-end/ETF categories to derive their percentile ranks, then applying the MPS formula described earlier in this methodology.

**How does Morningstar assign pillar ratings to collective investment trusts?**
A CIT may inherit a People or Process Pillar rating via any of the methods discussed previously and may inherit the pillar rating from an analyst-covered or algorithmically covered fund. CITs are not eligible for direct coverage by the algorithmic models.

**Are there any eligibility criteria specific to CITs?**
CIT data is self-reported to Morningstar by fund companies. Fee data can also be negotiable, unlike traditional mutual funds. Morningstar uses business logic to ensure fees, and the rating, are accurately accounting for the typical investor experience.

Morningstar uses the reported fee, if available. If the reported fee is missing, the CIT will not be rated. If a fee is reported at above 2.5%, the CIT will be ineligible for rating, as this is likely a data error. If a CIT fee is marked as negotiable or if the fee is marked as a "representative fee," Morningstar will not rate that CIT.

**Why does a fund not receive a rating?**
To be eligible for algorithmic ratings, managed investments must meet data freshness and completeness requirements.
▸ Screening logic is applied in certain markets to remove fee-negotiable share classes and zero-fee classes. This is because the reported fee is not representative of the fee paid for classes where the fee is negotiated and paid outside the fund structure and/or because purchase constraints limit the applicability of the reported fee.
▸ Screening process also removes classes for which there is evidence of data irregularities.

- ▸ Pillars already assigned ratings by a Morningstar analyst are not eligible for ratings assigned by the algorithm.
- ▸ Investments within a Morningstar Category that do not receive star ratings are not eligible for ratings. Such categories are generally either very small or too heterogeneous to serve as a valid comparison point for constituent vehicles.
- ▸ Investments within the alternative Morningstar Categories of digital assets, event-driven, macro trading, multistrategy, options trading, relative value arbitrage, and systematic trend are not eligible for ratings because of limited peer-group size and limitations on available portfolio data. This also applies to the commodities focused, derivative income, miscellaneous region, miscellaneous sector, muni target maturity, trading-inverse commodities, trading-inverse debt, trading-inverse equity, trading-leveraged debt, trading-leveraged equity, and trading-miscellaneous categories.
- ▸ Investments that do not have the necessary fee data available for the most recent month are not eligible for ratings:
  A. For investments domiciled in the United States, Prospectus Adjusted Expense Ratio is necessary. For investments domiciled outside the United States, Representative Cost is necessary.
- ▸ Investments within the open-end funds, exchange-traded funds, separate accounts, model portfolios, collective investment trusts, variable annuity subaccounts, or variable life subaccounts are eligible for ratings. Investments not in one of these universes are not eligible for ratings.
- ▸ Investments must be part of a strategy (as codified by StrategyID) with an oldest share class that is at least one year old.
- ▸ Investments must not be flagged as dormant funds.
- ▸ Investments must not have Morningstar as their Branding Name, must not be managed by Morningstar, and must not have been otherwise designated by Morningstar as ineligible to be rated.

### Appendix C: FAQ on Separately Managed Accounts Ratings

#### General Information
**Universe Coverage**
Only separately managed accounts that have been issued by firms flagged as Global Investment Performance Standards-compliant are eligible to receive an algorithmically generated Morningstar Medalist Rating.

**How does Morningstar assign ratings to separately managed accounts?**
Ratings are assigned using the same process as described elsewhere in this methodology.

**What is the fee used in the ratings for separately managed accounts?**
Algorithmically generated and analyst-assigned Morningstar Medalist Ratings use the following Medalist Rating Price Scores:
- ▸ Actively managed separate accounts: 2.0
- ▸ Passively managed separate accounts: 2.25

#### Pillar Models for Separately Managed Accounts
**What is the distribution used for the pillar ratings?**
For those pillars where a pillar rating of an open-end or exchange-traded fund is not available, pillar ratings (High, Above Average, Average, Below Average, or Low) will be assigned according to a static threshold to the raw pillar ratings using the same symmetric distribution as open-end and exchange-traded funds.

**What are the People and Process Pillar business rules specific to separately managed accounts?**
Separately managed accounts follow all the business rules that are implemented for open-end and exchange-traded funds with the below additions.

For separate accounts portfolios, if there is no analyst-covered vehicle from which to inherit People and Process Pillar ratings, algorithmic pillar ratings will be inherited from algorithmically rated vehicles in the open-end/ETF universe under the same strategy (as codified by StrategyID). Otherwise, separate count input data will be overlaid on the open-end/ETF universe to derive algorithmic pillar ratings.

## Appendix D: FAQ on Model Portfolio Ratings

### General Information

**What is the universe coverage?**

Only US-domiciled model portfolios that have been issued by firms flagged as compliant with GIPS or that have USD 10 billion in assets under management are eligible to receive a Morningstar Medalist Rating. With this new methodology, we are able to cover more than 1,000 model portfolios.

**How do we assign ratings to model portfolios?**

Ratings are assigned using the same process as open-end or exchange-traded funds. Fees and other data points that are percentiled are overlaid on the relevant category distribution to derive the percentiles.

In order to receive a Silver or Gold rating, models must have more than 18 months of postactivation returns. Models that would have earned a Silver or Gold rating but which do not meet this requirement are assigned a Bronze rating.

**What is the fee used in the ratings for model portfolios?**

The Morningstar Medalist Rating system calculates fees based on the weighted average expense ratios of the underlying holdings. For separate account positions, fees are assigned using the separate account Medalist Rating Price scores referenced in Appendix C.

### Quantitative Pillar Models for Models Methodology

**What is the distribution used for the pillar ratings?**

For those pillars where an existing Medalist Rating of an open-end or exchange-traded fund is not available, pillar ratings (High, Above Average, Average, Below Average, or Low) will be assigned using the same methods specified in the "Pillar Evaluation" section of this methodology. However, data inputs that are percentiled will be derived by overlaying them on the distribution of the same data points for open-end and exchange-traded funds in the relevant comparative group as specified in the Pillar Evaluation section.

**What are the People and Process business rules specific to models?**

Models follow all the business rules that are implemented for open-end and exchange-traded funds.

For model portfolios, if there is no analyst-covered vehicle from which to inherit People and Process pillar ratings, algorithmic pillar ratings will be inherited from algorithmically rated vehicles under the same strategy (as codified by StrategyID).

**Appendix E: Ratings Production and Publication Timelines, Effective Dates, and Ratings Takedown Policy**

**Effective Dates for Rating Assignment and Timelines for Publication**

Medalist Ratings are assigned and published on two cadences depending on the type of pillar assignment. This section outlines the assignment, update, and production timeline rules for each type of pillar rating assignment.

Medalist Ratings assigned Directly, by Analyst, are assigned or updated approximately once per year, unless circumstances warrant an interim update. For more detail on this cadence, please see Directly, by Analyst, below.

Medalist Ratings assigned Indirectly, by Analyst, or Directly, by Algorithm, are updated and published on a monthly basis, utilizing the most recent month-end data and inherited pillar ratings or model input data in force as of that date. For example, ratings utilizing data as of Oct. 31, 2024, were published on Nov. 26, 2024. Ratings for each monthly production run are typically published on the final Tuesday of each month. If there is a delay to this schedule, notice will be sent via Morningstar communication channels.

**Directly, by Analyst**

*People and Process Pillar Ratings*

▶ An analyst will update the People and Process Pillar ratings approximately once per year unless circumstances warrant an interim update.

▶ The "published on" date of the People Pillar rating and the Process Pillar rating denotes the date the analyst publishes the report that sets forth the People and Process Pillar ratings that have been assigned.

▶ The "rated on" date of the People Pillar rating and the Process Pillar rating denotes the date the analyst incorporates the People and Process Pillar ratings into the calculation of the overall Medalist Rating. Typically, the "published on" and "rated on" dates are the same.

*Parent Pillar Rating*

▶ An analyst will update the Parent Pillar rating approximately once every 18 months unless circumstances warrant an interim update.

▶ The "published on" date of the Parent Pillar rating denotes the date the analyst responsible for covering that parent firm completes the Parent Pillar rating analysis. The Parent Pillar rating and accompanying pillar rating text flow into the analyst report of all vehicles linked to that parent firm on that date.

▶ The "rated on" date of the Parent Pillar rating denotes the first date the Parent Pillar rating could be incorporated into the calculation of the overall Medalist Rating of a vehicle linked to that parent firm. However, an analyst will not incorporate the Parent Pillar rating into the calculation of the overall Medalist Rating of a vehicle linked to that parent firm until the next time the analyst publishes a new report on that vehicle. (The analyst responsible for covering the parent firm and the analyst covering vehicles linked to that parent firm can be different and, thus, the timing of updates can differ.)

**Indirectly, by Analyst**

The display and update rules for the pillar ratings are the same as described for Directly, by Analyst above, with a few differences as noted below. If a single pillar is assigned Indirectly, by Analyst, the overall rating is calculated each month. The "rated on" date denotes the most recent month-end date and reflects the inherited pillar rating that was in force as of that date.

*People and Process Pillar Ratings*

▸ The "published on" date denotes the date the analyst publishes the report that sets forth the People and Process Pillar ratings that have been assigned to a different vehicle that shares a StrategyID in common with the vehicle concerned (such as, the vehicle being assigned a rating indirectly).

▸ The "rated on" date denotes the date the People Pillar rating and Process Pillar rating are incorporated into the calculation of the overall Medalist Rating. Typically, the "rated on" date is the most recent month-end and reflects the People or Process Pillar rating that was in force as of that date. As such, the "rated on" date can differ from the "published on" date.

▸ With respect to vehicles that track an index, the Process Pillar rating "published on" date denotes the date an analyst publishes the report that sets forth the Process Pillar rating that has been assigned to a different vehicle that tracks the same index.

*Parent Pillar Rating*

▸ The Parent Pillar rating "rated on" date denotes the date the Parent Pillar rating is incorporated into the calculation of the overall Medalist Rating of a vehicle linked to that parent firm. Typically, the "rated on" date is the most recent month-end and reflects the Parent Pillar rating that was in force as of that date.

**Directly, by Algorithm**

The display and update rules for the pillar ratings are the same as described for Directly, by Analyst above, with a few differences as noted below. If a single pillar is assigned Directly, by Algorithm, the overall rating is calculated monthly. The "rated on" date denotes the most recent month-end date and reflects the input data as of that date.

*People and Process Pillar Ratings*

▸ The People and Process Pillar ratings are updated by an algorithm monthly.

▸ The "published on" date denotes the date the algorithm publishes its report that sets forth the People and Process Pillar ratings it has assigned.

▸ The "rated on" date denotes the date the People Pillar rating and Process Pillar rating are incorporated into the calculation of the overall Medalist Rating. Typically, the "rated on" date is the most recent month-end and reflects the People and Process Pillar rating that was in force as of that date.

*Parent Pillar Rating*

▸ The Parent Pillar rating is updated by an algorithm monthly.

▸ The "published on" date denotes the date the algorithm publishes its report that sets forth the Parent Pillar rating it has assigned. The Parent Pillar "rated on" date is the date the Parent Pillar rating is

incorporated into the calculation of the overall Medalist Rating of a vehicle linked to that parent firm. Typically, the "rated on" date is the most recent month-end and reflects the Parent Pillar rating that was in force as of that date.

**Ratings Takedown**

Morningstar has procedures in place to address potential inaccuracies that may affect a ratings assignment or the accompanying analysis. In cases where an inaccuracy is identified in regard to input data or model calculation, Morningstar may remove the impacted ratings or analysis from circulation or prevent publication for that month. By general rule, Morningstar will not adjust the historical time series of ratings, even if an inaccuracy is identified, to preserve the historical record.

**Appendix F: Morningstar Medalist Rating Glossary**

**% of Asset in Top 10 Holdings:** The percentage of assets in the vehicle's top 10 holdings. % of Asset in Top 10 Holdings is an input for the algorithmic Process Pillar model for passively managed investments.

**Actively Managed:** Actively managed strategies attempt to beat a benchmark index by selecting securities that their portfolio managers believe will outperform.

**Active vs Passive Information Ratio:** Measures how active funds in a category perform relative to passive funds, adjusted for volatility. This data point is derived by first calculating gross-of-fee asset-weighted average returns for both actively and passively managed funds within the category. A category level information ratio is then calculated using the active/passive category average returns, by calculating 1) the average monthly excess return of the active category average versus the passive category average, and dividing that by 2) the tracking error of the active category average, utilizing the passive category average as a benchmark.

**Administration Charge:** The percentage of a variable annuity or variable life subaccount's daily net assets deducted by the insurance company to cover the costs involved in offering and administering the variable annuity, such as the cost of distribution and printing of correspondence. This is included in the Total Net Expense Ratio that is the basis for the Medalist Rating Price Score for these vehicles.

**Advisor:** The asset manager responsible for managing a portfolio. This may be the same as, or different from, the Branding Name. In Australia, the Advisor is used as the entity evaluated to determine the Parent Pillar rating.

**Average Brand Information Ratio:** Equal-weighted averages of the gross-of-fee information ratios of the funds under a given Branding Company over a given period. The data point only includes actively managed funds under a brand in ratable regions, asset classes, categories, and security types (limited to open-end funds, exchange-traded funds, separate accounts, and model portfolios). Average Brand Information Ratio is an input for the algorithmic People Pillar model for actively managed investments, where it substitutes for Manager Information Ratios where the latter is unavailable.

**Average Brand Longest Manager Tenure:** Asset-weighted average of the longest manager tenure associated with each fund under the brand. Longest manager tenure for a fund is defined as the number of days that the longest-tenured manager on the fund has been listed on that fund. Average Brand Longest Manager Tenure is an input for the algorithmic People and Parent Pillar models for actively managed investments.

**Average Brand Obsolete Rate 5-Year:** Average percentage of funds under the brand that went obsolete across the past five one-year periods. Average Brand Obsolete Rate 5-Year is an input for the algorithmic Parent Pillar model for passively managed investments.

**Average Brand Retention Ratio 5-Year:** Average manager retention of the brand across the past five one-year periods. This data point is not calculated for brands where the average manager count across all five one-year periods is below five. Average Brand Retention Ratio, 5-year is an input for the algorithmic People and Parent Pillar models for actively managed investments.

**Average Market Cap:** The average market capitalization of a fund's holdings relative to the category average for passives. Average Market Cap is an input for the algorithmic Process Pillar model for passively managed investments.

**Brand Active/Passive Fee Rank:** The average monthly fee percentile rank of the firm's active offerings and passive offerings, each considered separately. Brand Active/Passive Fee Rank is an input for the algorithmic Parent Pillar model for passively managed investments.

**Brand / Asset Class Risk-Adjusted Success Ratio:** The percentage of actively managed funds in a given asset class under a brand that both survive (don't go obsolete) and rank in the top half of the category on a gross-of-fee, risk-adjusted basis (as defined by information ratio using the category index as the benchmark). Brand / Asset Class Risk-Adjusted Success Ratio is an input for the algorithmic Process Pillar model for actively managed investments.

**Brand Risk-Adjusted Success Ratio:** The percentage of funds under the brand that both survived and beat the category median in each period as measured by net-of-fee Morningstar Risk-Adjusted Returns. Brand Risk-Adjusted Success Ratio is an input for the algorithmic Parent Pillar model for passively managed investments.

**Branding Name:** A global grouping of managed investment products that represents the initiator or sponsor of the investment and the product's ownership or marketing/communication channels. For European markets, if an external management company is employed to provide legal and compliance oversight of the investment, Branding Name is instead associated with the firm responsible for day-to-day management of the portfolio. The Medalist Rating defines the rated entity for the Parent Pillar via its Branding Name and Branding Name ID except in Australia, where the Advisor is used.

**Branding Name ID:** The alphanumeric identifier assigned by Morningstar to each Branding Name/Company.

**Distribution Charge:** When applicable, these fees compensate the agent, broker, or financial planner who sold the policy associated with a variable life of variable annuity subaccount. This is included in the Total Net Expense Ratio that is the basis for the Medalist Rating Price Score for these vehicles.

**Dormant** or **Dormancy**: Morningstar assigns funds dormant status when they cease to operate and have no investors but remain viable legal entities—that is, they have not liquidated or merged into another vehicle. Dormant vehicles are not eligible for Medalist Ratings.

**Euclidian Distance of Equity Sector Weights from Category Index's:** Measures the difference in a fund's sector weights from those of the category index. This is calculated as the square root of the sum of the differences in each sector's weight. Euclidian Distance of Equity Sector Weights from Category Index's is an input for the algorithmic Process Pillar model for passively managed investments.

**Focus Prospectus Benchmark:** In the US, the most tailored benchmark listed in the performance table or investment strategy section of the prospectus, most closely aligned with the fund's strategy.

**Fundamental Pillars:** The People, Process, and Price Pillars of the Medalist Rating.

**FundID:** The identifier assigned by Morningstar to a collective investment—for example, a mutual fund, UCITS fund, closed-end fund, and so on—inclusive of all of its share classes.

**Fund Manager Successful Experience:** Tenure-weighted average of the successful manager experience values for the managers listed on the fund. The successful manager experience value for each manager is the total number of months over the past 10 years in which a manager achieved a positive gross-of-fee excess return over the category index, minus the number of months with negative ones.

**GIPS Compliant:** Indicates that an investment firm adheres to the Global Investment Performance Standards (GIPS®)—a set of industry-accepted ethical principles for calculating, presenting, and reporting investment performance, developed by the CFA Institute.

**Information Ratio:** Calculated by dividing the annualized cumulative excess return over the category index by annualized tracking error. Information ratio, calculated using gross-of-fee returns, is an input for the algorithmic Process Pillar model for actively managed investments.

**Insurance Expense:** The percentage of a variable annuity or variable life subaccount's assets deducted each year to cover M&E risk charges and other miscellaneous administration fees. This is included in the Total Net Expense Ratio that is the basis for the Medalist Rating Price Score for these vehicles.

**M&E Risk Charge:** The mortality and expense risk charge, which is the percentage of a variable annuity or variable life subaccount's assets that the insurance company deducts to cover costs associated with mortality and expense risk. Specifically, it can serve as a source of profit for the insurance company in addition to compensating the company for offering features such as the variable-annuity death benefit and for compensation. This is included in the Total Net Expense Ratio that is the basis for the Medalist Rating Price Score for these vehicles.

**Manager Information Ratio:** Equal-weighted average of the gross-of-fee information ratios of the managers listed on the fund over a given period of time. Manager Information Ratio is calculated by dividing manager annualized cumulative excess return over the category index by annualized manager tracking error, each calculated using a manager's entire available history of actively managed funds,

including obsolete offerings. Manager Information Ratio is an input for the algorithmic People Pillar model for actively managed investments.

**Max Manager Ownership:** The maximum manager investment into any fund under the strategy. Max Manager Ownership is an input for the algorithmic People Pillar model for actively managed investments.

**Medalist Rating Price Score:** A continuous score running from negative 2.5 (most expensive) to positive 2.5 (cheapest) based on the percentile rank of a vehicle's expense ratio within its Morningstar Category. Because it progresses in decimalized increments, the score is able to appropriately reflect even fine distinctions in fees and also avoids the sharp changes between score levels associated with bucketing of fees into integer-value scores. MPS is assigned a 30% weight in the Medalist Rating for actively managed funds and a 40% weighting in the Medalist Rating for passively managed funds.

**Medalist Rating Threshold:** Numeric values indicating the Medalist Rating a share class will be assigned based on its Weighted Medalist Rating Score. There are separate thresholds for actively and passively managed vehicles, as below:

### Gold
Actively managed vehicles: Weighted Medalist Rating score greater than or equal to 1.2
Passively managed vehicles: Weighted Medalist Rating score greater than or equal to 1.4

### Silver
Actively managed vehicles: Weighted Medalist Rating score greater than or equal to 0.8, but less than 1.2
Passively managed vehicles: Weighted Medalist Rating score greater than or equal to 1.0, but less than 1.4

### Bronze
Actively managed vehicles: Weighted Medalist Rating score greater than or equal to 0.5, but less than 0.8
Passively managed vehicles: Weighted Medalist Rating score greater than or equal to 0.7, but less than 1.0

### Neutral
Actively managed vehicles: Weighted Medalist Rating score greater than or equal to negative 0.5, but less than 0.5
Passively managed vehicles: Weighted Medalist Rating score greater than or equal to negative 0.3, but less than 0.7

### Negative
Actively managed vehicles: Weighted Medalist Rating score less than negative 0.5
Passively managed vehicles: Weighted Medalist Rating score less than negative 0.3

**Morningstar Category:** Morningstar-defined fund peer group that serves as the basis for relative ranks and ratings of funds, including the Morningstar Rating for Funds and the Morningstar Medalist Rating. Morningstar Categories classify funds based on their objectives and their actual investment exposures as measured by their underlying portfolio holdings (using portfolio and other statistics over the past three years).

**Morningstar Category Broad Group:** The aggregation of Morningstar Categories into subasset categories as follows: Allocation, Alternative Strategies, Capital Preservation, Equity, Fixed Income, Hybrid Securities, Other, and Real Assets.

**Number of Equity Holdings:** The number of equity holdings in a portfolio. The algorithmic Process Pillar model for passively managed investment uses a specialized version of this data point that compares the number of equity holdings in a given passively managed investment relative to the category average for passives. Number of Equity Holdings is an input for the algorithmic Process Pillar model for passively managed investments.

**Number of Bond Holdings/Category Average:** Number of bond holdings divided by the average number of bond holdings in the Morningstar Category (including both actively and passively managed vehicles). A value of 0.5 would mean the fund has half as many bond holdings as the category average, while a value of 2 would mean the fund has double the holdings as the average fund in the category. Number of Bond Holdings/Category Average is an input for the algorithmic Process Pillar model for passively managed investments.

**Number of Equity Holdings/Category Average:** Number of equity holdings divided by the average number of holdings in the Morningstar Category (including both actively and passively managed vehicles). A value of 0.5 would mean the fund has half as many equity holdings as the category average, while a value of 2 would mean the fund has double the equity holdings as the average fund in the category. Number of Equity Holdings/Category Average is an input for the algorithmic Process Pillar model for passively managed investments.

**Passively Managed:** Passively managed vehicles attempt to track a benchmark index as closely as possible, whether through full replication or sampling. To deliver a return as close as possible to the underlying index, it is important for these vehicles to keep their fees extremely low.

**Primary Prospectus Benchmark:** The benchmark used in a fund's legal and/or point-of-sale documentation as its performance comparator.

**Prospectus Adjusted Expense Ratio (US):** The fee measure used as the basis for the Medalist Rating Price Score for investments domiciled in the US.

**R-Squared:** R-Squared of a vehicle's net-of-fee returns regressed against the Morningstar Category index returns for the period. R-Squared indicates the extent to which an investment's returns are explained by the benchmark. R-Squared is an input for the algorithmic Process Pillar model for passively managed investments.

**Representative Cost:** The fee measure used as the basis for the Medalist Rating Price Score for investments except those domiciled in the US and Australia.

**SecID:** The identifier assigned by Morningstar to each share class of a given investment. The Medalist Rating Price Score and the Medalist Rating are assigned at the share class level, as the fees for share classes of the same fund can differ widely.

**Size Factor Exposure:** Morningstar Risk Model measure of a vehicle's exposure to the size factor when compared with category peers. Size Factor Exposure is an input for the algorithmic Process Pillar model for passively managed investments.

**Size/Style Drift 3-Year:** Calculated as an equal-weighted average of the fund's three-year size drift and three-year style drift, each percentile ranked within Morningstar Category at the FundId level. Size/Style Drift 3-Year is an input for the algorithmic Process Pillar model for actively managed investments.

**Strategic Beta:** Nontraditional benchmarks that have an "active" element contained within their methodology that typically aims to either improve returns or alter the index's risk profile relative to a standard benchmark. For strategies tracking strategic-beta benchmarks—except for those tracking otherwise market-cap-weighted value and growth indexes—algorithmic Process Pillar ratings are determined using the model for actively managed strategies. Vehicles tracking market-cap-weighted value and growth indexes have their ratings determined in the same fashion as all other passively managed vehicles.

**Strategy:** A grouping assigned by Morningstar that links investments that follow the same investment process. Often investment management companies advise more than one mutual fund and offer equivalent investment pools in separate accounts, collective investment trusts, or other vehicles. Following industry convention, Morningstar groups these substantively identical pools into a single strategy. Morningstar identifies strategies through surveying management companies, as well as performing quantitative and qualitative analysis.

**StrategyID:** The Morningstar alphanumeric identifier that links investments that follow the same investment process. StrategyIDs are currently available only for strategies that have been reported to our database.

**Strategy Name:** The name assigned by Morningstar to a given strategy.

**Surveyed Average Credit Rating:** The average credit rating of the fund's bond holdings reported by fund managers. Surveyed Average Credit Rating is an input for the algorithmic Process Pillar model for passively managed investments.

**Surveyed Effective Duration:** The effective duration of the fund's bond holdings reported by fund managers. Surveyed Effective Duration is an input for the algorithmic Process Pillar model for passively managed investments.

**Surveyed Yield to Maturity:** The yield to maturity of a fund's bond holdings reported by fund managers. Surveyed Yield to Maturity is an input for the algorithmic Process Pillar model for passively managed investments.

**Total Cost Ratio – Prospective (Aus):** The fee measure used as the basis for the Medalist Rating Price Score for investments domiciled in Australia.

**Total Net Expense Ratio:** The basis for the Medalist Rating Price Score for variable annuity and variable life subaccounts. It includes Insurance Expenses (M&E Risk Charge, Administrative Charge), the Distribution Charge, and the cost of the underlying funds.

**Turnover Ratio:** Measure of how often a fund is trading, stated as percentage figure. Turnover Ratio is an input for the algorithmic Process Pillar model for passively managed investments.

**Tracking Error:** The standard deviation of an investment's excess returns over a given benchmark. The tracking errors of a vehicle's net-of-fee return against the Morningstar Category index over one- and three-year periods are inputs for the algorithmic Process Pillar model for passively managed investments.

**Value/Growth Factor Exposure:** Morningstar Risk Model measure of a vehicle's exposure to the Value/Growth factor when compared with category peers. Value/Growth Factor Exposure is an input for the algorithmic Process Pillar model for passively managed investments.

**Weighted R-Squared:** Calculated as a weighted average of a share class' one-year (20%), three-year (30%), and five-year (50%) R-squared values, which have each been smoothed over 12 months. R-squared is obtained from CAPM regression using gross-of-fee returns converted to USD, with the Morningstar Category index as the benchmark. R-squared indicates the extent to which an investment's returns are explained by the benchmark. Weighted R-Squared is an input for the algorithmic Process Pillar model for actively managed investments.

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**Document Version History**

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| Version 1.0 | May 2, 2023 | Original publication |
| Version 1.1 | Aug. 31, 2023 | Addition of Australia |
| Version 1.2 | Nov. 28, 2023 | Parent Pillar methodology additions |
| Version 1.3 | Dec. 26, 2023 | Update to People Pillar inheritance, Passives business logic |
| Version 1.4 | April 30, 2024 | Update to threshold calculation and pillar-level buffers |
| Version 1.5 | May 28, 2024 | Removal of Portfolio Transparency |
| Version 1.6 | Oct. 29, 2024 | Change to APE calculation, Passive Equity Process model |
| Version 1.7 | Dec. 31, 2024 | Clarification to monthly production schedule language |
| Version 1.8 | March 25, 2025 | Addition of CITs to inherited coverage |
| Version 2.0 | Dec. 4, 2025 | Significant updates to methodology, designed to simplify the rating structure, make the rating more transparent for investors, and enhance stability. Introduction of Medalist Rating Price Score, fixed thresholds, new rating derivation process, new algorithmic pillar rating models; changes to coverage criteria in Australia and New Zealand; removal of algorithmic ratings for financial products domiciled in Australia and New Zealand. |

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