Morningstar Fee Level — 529 Investment Options
Methodology

Introduction

The Morningstar Fee Level for 529 plans was developed to help investors compare a 529 plan's relative level of fees with those of similar 529 plans. The methodology applies to all 529 plans in Morningstar’s database.

Methodology

Fund share classes are first grouped according to the following categories:

1. Static Large Value + Static Large Blend + Static Large Growth
2. Static Mid-Cap
3. Static Small-Cap
4. Static Conservative Allocation
   - Static Allocation 15% to 30% Equity + Static Allocation —30% to 50% Equity
5. Static Moderate Allocation
6. Static Aggressive Allocation
   - Static Allocation – 70% to 85% Equity + Static Allocation —85%+ Equity
7. Static Non-U.S. Stock
8. Static U.S. Government
9. Static Short-Term Bond
10. Static Intermediate-Term Bond
11. Static Money Market
12. Age 0-6 Low Equity + Age 0-6 Medium Equity + Age 0-6 High Equity
13. Age 7-12 Low Equity + Age 7-12 Medium Equity + Age 7-12 High Equity
14. Age 13-18 Low Equity + Age 13-18 Medium Equity + Age 13-18 High Equity
15. Age 19+ Low Equity + Age 19+ Medium Equity + Age 19+ High Equity

Distribution Class Criteria

Comparison groups would further be determined by the following criteria. This allows for an "apples to apples" comparison of fund share classes with similar distribution channels and expense structures. The calculation is only for U.S. 529 plans.

Data Points Required (Most Recent):

- Sales Channel
- Front Load
- Deferred Load
- Distribution Fee
**Advisor-sold Front Load**: Sales channel equal to Advisor or Direct and Advisor; front load greater than 0%.

**Advisor-sold Deferred Load**: Sales channel equal to Advisor or Direct and Advisor; front load equal to 0%; deferred load greater than 0%.

**Advisor-sold Level Load**: Sales channel equal to Advisor or Direct and Advisor; front load equal to 0%; deferred load equal to 0%; distribution fee greater than 0.25%.

**Advisor-sold No Load**: Sales channel equal to Advisor or Direct and Advisor; front load equal to 0%, deferred load equal to 0%, distribution fee less than or equal to 0.25%.

**Direct-sold**: Sales channel equal to Direct.

Examples of distribution class comparison groups include:

1. Static Small-Cap Advisor-sold Front Load
2. Static Small-Cap Advisor-sold Deferred Load
3. Static Small-Cap Advisor-sold Level Load
4. Static Small-Cap Advisor-sold No Load
5. Static Small-Cap Direct-sold
6. Static U.S. Government Advisor-sold Front Load
7. Static U.S. Government Advisor-sold Deferred Load
8. Static U.S. Government Advisor-sold Level Load
9. Static U.S. Government Advisor-sold No Load
10. Static U.S. Government Direct-sold

15 category groups x 5 distribution classes = 75 ranking groups
**Ranking**

Within each comparison group, a fund share class' total expense ratio would then be ranked against its peers, using five quintiles. Each share class would be assigned a quintile score (1 to 5) and corresponding Fee Grade/Label (Low, -Avg (Below Average), Avg (Average), +Avg (Above Average), High). It will be the product’s responsibility to convert the percentile rank to a quintile rank and corresponding word label.

The total expense ratio needs to first be calculated by adding together the following six fees:

1. Administrative Fee: Fund Share Class/Operation/Prospectus/Administrative Fee
2. Distribution Fee: Fund Share Class/Operation/Prospectus/Distribution Fee/Fee Schedule/Value
3. Program Management Fee: Fund Share Class/Operation/Prospectus/Actual Management Fee
4. Trustee Fee: Fund Share Class/Operation/Prospectus/Trustee Fee
5. Other Asset-Based Fee: Fund Share Class/Operation/Prospectus/Other Fee/Value
6. Underlying Fund Fees: Fund Share Class/Operation/Prospectus/Acquired Expense Ratio

Morningstar uses the following formula to determine the percentile rank of an expense ratio in a series. Percentile ranks range from 1 (best) to 100 (worst) with all intermediate values spread evenly over that range.

All observations are ranked in the desired order (usually descending). Percentile ranks are assigned as follows:

\[
PctRank(v[i]) = \text{Roundup}
\left[100 \times \left\{ \frac{(C[i] - 1)}{(n - 1)} \right\} \right]
\]

With a special case whereby any PctRank=0 is transformed to PctRank=1

Roundup is a function to round the result up to the next integer.

where:

- \(PctRank(v[i])\) = Percentile rank for fund \(i\)
- \(v[i]\) = The value being ranked for fund \(i\)
- \(C[i]\) = The absolute rank of fund \(i\)
- \(n\) = The total number of observations
Morningstar does not require a minimum number of items in order to percentile-rank a set of data. For example, if there are only three fund share classes in a distribution class for a comparison group, we will percentile-rank those three (1, 50, and 100).

### Exhibit 1 Percentile Ranks Mapped Into Quintiles

<table>
<thead>
<tr>
<th>Range</th>
<th>Quintile</th>
<th>Word Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 &lt; Percentile Rank &lt;= 20</td>
<td>1</td>
<td>Low</td>
</tr>
<tr>
<td>20 &lt; Percentile Rank &lt;= 40</td>
<td>2</td>
<td>Below Average or -Avg</td>
</tr>
<tr>
<td>40 &lt; Percentile Rank &lt;= 60</td>
<td>3</td>
<td>Average or Avg</td>
</tr>
<tr>
<td>60 &lt; Percentile Rank &lt;= 80</td>
<td>4</td>
<td>Above Average or +Avg</td>
</tr>
<tr>
<td>80 &lt; Percentile Rank &lt;= 100</td>
<td>5</td>
<td>High</td>
</tr>
</tbody>
</table>

Source: Morningstar, Inc.

### Methodology Changes

The following is a timeline of significant methodology changes to the Morningstar ranking methodologies.

**Date: August 2017**

**Description:** Minor adjustment to the percentile ranking formula. The old formula was:

\[
PctRank = i \text{ for } i = 1 \\
FLOOR \left[99\frac{(i-1)}{(n-1)}+1\right] \text{ for } i > 1,
\]

where

\[
n = \text{ Total number of observations} \\
i = \text{ Absolute rank of each observation} \\
FLOOR = \text{ A function that rounds down to the next integer (e.g. 89.83 rounds down to 89)}
\]