Representative Cost Methodology

Introduction
The costs charged for an investment is one of the biggest predictors of future outperformance. Given the differences in the way fees are calculated, reported and named across different market it is difficult to ensure like for like comparisons.

Morningstar are introducing 'representative cost' fields, that will contain the best information on the re-occurring cost that are charged via the fund itself, so would not include one-off cost or cost charged by third parties such as advisers or platforms, nor one-off costs charged on entry or exit.

The fields will be a monthly time series of those fees charged, one series will exclude any transaction costs and the other will include transaction costs. The fees will be available as both and annualised and unannualised series.

Representative cost methodology
Each market will have different rules on how the field(s) will be constructed, but there will be common themes.

Annual fee levels will be de-annualised to a monthly level by raising to the power of (1/12) so

\[ Monthly \ fee = annual \ fee^{1/12} \]

Where the fees are expressed in decimal format (5% would be represented a 1.05).

Fees can only be rolled forward or back up to (and including) 12 months after the month in which they were reported. The exception to this is for the latest reported value that may be rolled forward up to 15 months.

For markets that report both actual and estimated (forward looking) fees the actual values are preferred for periods prior to the last reported fee date, estimated values are preferred for periods after the last reported fee.
**General market rule**

For markets that do not have special rules the net expense ratio (this can be from the annual report, semi-annual report or other source) will be used to calculate the representative cost excluding transaction cost field only. This will be calculated by:

1. Taking the net expense ratio values for the share class, and place those values on the reported date (if the reported date is mid-month then place on the month end).
2. Fill in the missing monthly points by rolling back the values up to 12 months (or until the previous reported value) first.
3. After rolling back missing month ends may be filled by rolling the values forward up to 12 months.
4. The latest value may be rolled forward up to 15 months (to allow for publishing and collection of the next annual report).

Note for the US market the representative cost series will not include acquired expenses from other funds it may invest in.

**Australian market**

As the Australian market publishes transaction cost information both the including and excluding transaction cost fields will be calculated. The fee disclosure regime in Australia changed in 2018, to move to RG97, from indirect cost ratio, which itself was the successor to the management expense ratio. The excluding transaction cost field will blend together these regimes into one time series, the relevant fees are:

- Morningstar Total Cost Ratio — last financial year
- Morningstar Total Cost Ratio — PDS (a forward looking measure)
- Indirect Cost Ratio
- Management expense ratio

If month in question is after the last fee date was reported for that share class then, we will use the data in the following order where available.

1. If date is up to 15 months after the Morningstar Total Cost Ratio - PDS value use that data;
2. If date is up to 15 months after the Morningstar Total Cost Ratio Last Financial Year value use that data;
3. If date is up to 15 months after the indirect cost ratio data use that data;
4. If date is up to 15 months after the Management expense ratio value use that data;
5. If none of the above apply then value is blank/null for that month.
If month in question is on or before the last fee date was reported for that share class, we will use the data in the following order where available. If there is a/an:

- Morningstar Total Cost Ratio Last Financial year value within the next 12 months of that date roll back that data;
- Indirect cost ratio value within the next 12 months of that date roll back that data;
- Morningstar Total Cost Ratio - PDS value up to 15 months prior roll forward that data;
- Morningstar Total Cost Ratio - PDS value within the next 12 months of that date roll back that data;
- MER value within the next 12 months of that date roll back that data;
- Morningstar Total Cost Ratio Last Financial year value up to 12 months prior roll forward that data;
- Indirect cost ratio value up to 12 months prior roll forward that data;
- Management expense ratio up to 12 months prior roll forward that data.

- Otherwise no value should be calculated for that month end.

To calculate the including transaction cost time-series the following information would be used:

- Total management cost - last financial year
- Total T&O costs inc recovered costs (transaction and operation costs)

- Take the Morningstar Total Cost Ratio Last Financial year values
- Fill in any missing monthly points by rolling back the values above up to 12 months (or until the previous value) first. After rolling back missing month end may be filled by rolling the values forward up to 12 months.
- Take the Net Total transactional and Operational costs' field values above
- Fill in any missing monthly points by rolling back the values above up to 12 months (or until the previous value) first. After rolling back missing month end may be filled by rolling the values forward up to 12 months.
- The latest value may be rolled forward up to 15 months (to allow for publishing and collection of the next annual report).
- For months with both a manager expense ratio and a trading expense - add them together to obtain month's representative cost.
- If a month does not have both values a representative cost will not be displayed.
New Zealand Market

The New Zealand market does not publish transaction cost information so only the excluding transaction cost field will be calculated. The excluding transaction cost field will blend together these regimes into one time series, the relevant fees are:

Morningstar Total Cost Ratio — last financial year
Morningstar Total Cost Ratio — PDS (a forward looking measure)

If month in question is after the Last fee date reported for that share class then, we will use the data in the following order where available:

► If the date is up to 15 months after the Prospective TCR value use that data;
► If the date is up to 15 months after the Realised TCR value use that data;
► If none of the above apply, then value is blank/null for that month.

If month in question is on or before the Last fee date was reported for that share class, we will use the data in the following order where available. If there is a/an:

► Realised TCR value within the next 12 months of that date roll back that data;
► Prospective TCR value up to 15 months prior roll forward that data;
► Prospective TCR value within the next 12 months of that date roll back that data;
► Realised TCR value up to 12 months prior roll forward that data;
► Otherwise no value should be calculated for that month end.
Canadian Market
As the Canadian market publishes transaction cost information both the including and excluding transaction cost fields will be calculated.

The excluding transaction cost time-series will be calculated by using the manager expense ratio (from the annual report, semi-annual report or other source). This will be calculated by:

- Taking the manager expense ratio values for the share class, place those values on the reported date (if the reported date is mid-month then place on the month end).
- Fill in the missing monthly points by rolling back the values up to 12 months (or until the previous reported value) first.
- After rolling back missing month ends may be filled by rolling the values forward up to 12 months.
- The latest value may be rolled forward up to 15 months (to allow for publishing and collection of the next annual report).

The including transaction cost time-series will be calculated using the manager expense ratio and the trading expense.

- Taking the manager expense ratio and trading expense values for the share class, place those values on the reported date (if the reported date is mid-month then place on the month end).
- Fill in the missing monthly points by rolling back the values up to 12 months (or until the previous reported value) first.
- After rolling back missing month ends may be filled by rolling the values forward up to 12 months.
- The latest value may be rolled forward up to 15 months (to allow for publishing and collection of the next annual report).
- For months with both a manager expense ratio and a trading expense - add them together to obtain month’s representative cost
- If a month does not have both a manager expense ratio and a trading expense a representative cost will not be displayed.
European Market
As the European market publishes transaction cost information both the including and excluding
transaction cost fields will be calculated.

The fee disclosure regime in Europe changed in 2010 with the introduction of the KIID and again in 2018
with the introduction of MiFID II rules. The excluding transaction cost field will blend together these
regimes into one time series, the relevant fees are:
- **MiFID ex-ante costs** - Sum the Ongoing cost estimated and performance fee estimated fields
- **MiFID ex post cost** - Sum the Ongoing cost actual and performance fee actual fields
- **Annual report ongoing charge plus performance fee** - Sum the annual report ongoing charge and
  annual report performance fee
- **KIID ongoing charge plus performance fee** - Sum the KIID ongoing charge and annual report
  performance fee (if within 6 months of the KIID date)
- **Net expense ratio** - Use the net expense ratio

If month in question is after the last fee date was reported for that share class then
► If date is up to 15 months after the MiFID ex-ante costs roll this value forward;
► If not and date is up to 15 months after a MiFID ex-post cost roll this value forward;
► if not and date is up to 15 months after the annual report ongoing charge plus performance fee data roll
  this value forward;
► If not and date is up to 15 months after the KIID ongoing charge plus performance fee roll this data
  forward;
► If not and date is up to 15 months after the net expense ratio roll this value forward.
►
  If month in question is on or before the last fee date was reported for that share class
► If there is a MiFID ex-post within the next 12 months roll this data back;
► If not and there is MiFID ex ante data in the prior 12 months roll forward that data;
► If not and there is AR ongoing charge plus performance fee within the next 12 months roll back that
  data;
► If not and there is KIID ongoing charge plus performance fee within the next 12 months roll back that
  data;
► If not and there is AR net expense ratio within the next 12 months roll back that data;
► If not and there is MiFID ex ante data within the next 12 months roll back that data;
► If there is MiFID ex post data up to 12 months prior roll forward that data;
► If there is KIID ongoing charge plus performance fee up to 12 months prior roll forward that data;
► If there is annual report ongoing charge plus performance fee up to 12 months prior roll forward that
  data;
► If there is AR net expense ratio up to 12 months prior roll forward that data;
►
  ► Otherwise no value should be calculated for that month end.

► To calculate the including transaction cost time-series the following information would be used:
**MiFID ex-ante costs** - Sum the Ongoing cost estimated, performance fee estimated and transaction fee estimated fields. Note any negative transaction fees will be excluded from the calculation.

**MiFID ex post cost** - Sum the Ongoing cost actual, performance fee actual and transaction fee actual fields. Note any negative transaction fees will be excluded from the calculation.

If month in question is after the last fee (MiFID ex-post or ex-ante) date was reported for that share class

- If date is up to 15 months after the MiFID ex-ante costs roll this value forward;
- If not and date is up to 15 months after a MiFID ex-post cost roll this value forward.

If month in question is on or before the last fee date was reported for that share class

- If there is a MiFID ex-post within the next 12 months roll this data back;
- If not and there is MiFID ex ante data in the prior 12 months roll forward that data;
- If not and there is MiFID ex ante data within the next 12 months prior roll back that data;
- If there is MiFID ex post data up to 12 months prior roll forward that data;

- Otherwise no value should be calculated for that month end.
**Hong Kong Market**
The Hong Kong market does not publish transaction cost information so only the excluding transaction cost field will be calculated. For all funds (except for the HK MPF funds that will use the general market rule) the excluding transaction cost time-series will be calculated by using the ongoing charge including performance fee and ongoing charge excluding performance fee. This will be calculated by:

- Taking the ongoing charge including performance fee values for the share class, and place those values on the reported date (if the reported date is mid-month then place on the month end).
- Fill in the missing monthly points by rolling back the values up to 12 months (or until the previous reported value) first.
- After rolling back missing month ends may be filled by rolling the values forward up to 12 months.
- The latest value may be rolled forward up to 15 months (to allow for publishing and collection of the next annual report).
- Any missing month end periods will then be populated by taking the ongoing charge excluding performance fee for the date (the values may be rolled up to 12 months forward or backwards, apart from the latest value that may be rolled forward up to 15 months)

**Japanese Market**
The Japanese market does not publish transaction cost information so only the excluding transaction cost field will be calculated. The funds will calculate representative cost using the general methodology, except in cases where the fund has no annual report net expense ratio. Where that is the case a representative cost will be created for the last month end only that is equal to the JP after tax total expense ratio.

**US Open end funds and ETFs**
Open end funds and ETFs in the United States will use the methodology below (all other fund types in the US will use the General market rule). Only the representative cost excluding transaction fee will be calculated.

- Taking the Annual report adjusted operating expense ratio values for the share class, and place those values on the reported date (if the reported date is mid-month then place on the month end).
- Fill in the missing monthly points by rolling back the values up to 12 months (or until the previous reported value) first.
- After rolling back missing month ends may be filled by rolling the values forward up to 12 months.
- The latest value may be rolled forward up to 15 months (to allow for publishing and collection of the next annual report).
- Any missing month end periods will then be populated by taking the applicable annual report net expense ratios for the date (the values may be rolled up to 12 months forward or backwards, apart from the latest value that may be rolled forward up to 15 months)

Note for the US market the representative cost series will not include acquired expenses from other funds it may invest in.
# Methodology History

<table>
<thead>
<tr>
<th>Version</th>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>31 August 2018</td>
<td>Original publication</td>
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<tr>
<td>1.1</td>
<td>31 October 2019</td>
<td>Changed US OE to use Adjusted expense ratio (from NER).</td>
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<tr>
<td>1.2</td>
<td>30 November 2019</td>
<td>Addition of Hong Kong and Japan rules.</td>
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<tr>
<td>1.3</td>
<td>30 September 2020</td>
<td>Change of Australian rules</td>
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<td>1.4</td>
<td>31 May 2022</td>
<td>Change of New Zealand rules</td>
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