
Distribution Analysis Measures

Methodology

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Methodology History

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Description: Introduction of distribution type breakdown

Introduction

Morningstar calculates measures that allow the comparison of open-end and exchange-traded-product historic distributions by share classes (for example, dividends, capital gains payments, and return of capital payments). The calculations assume an invested amount of 100,000 (in the base currency of the share class) to calculate the number of units the investment would have purchased five years ago. The amount paid to the investors by way of these distributions can then be calculated, for each year in that five-year period, and used to assess the stability, growth, and total amount paid. In this analysis, the return achieved from holding the share class without reinvesting the distributions will also be assessed.

The measures are calculated on a monthly basis using month-end dates and values, calculated in the base currency of the share class.

Distribution Measures

First, calculate the number of units or shares that 100,000 (in the base currency of the share class) could have purchased.

[1]

$$Ns = \frac{100000}{Price_{y-5}}$$

Where:

| | | |
|----------------------------|---|---|
| Ns | = | Number of shares purchased. |
| Price_{y-5} | = | Price of the investment five years ago (month end). |

Distribution analysis measures from [2] to [7] and [10] are available on aggregated distribution level and at single-distribution-type level.

The below table summarizes all the distribution types and the related aggregation levels that may be adopted for the calculation.

| | | |
|-------------------------------|---|--|
| Aggregate Distribution | = | Sum of Aggregated Dividend, Capital Gains, and Return of Capital. It is the most comprehensive level including all below distribution types. |
|-------------------------------|---|--|

| | | |
|----------------------------|---|---|
| Aggregate Dividend | = | Sum of all dividend types available, such as qualified, nonqualified, foreign and domestic dividends. |
| Capital Gains | = | Sum of Capital Gain (Long Term), Capital Gain (Middle Term), Capital Gain (Short Term). |
| Capital Gains (Long Term) | = | Just the Capital Gains (Long Term). |
| Capital Gains (Short term) | = | Just the Capital Gains (Short Term). |
| Return of Capital | = | Just the Return of Capital. |

Then calculate the amount of distributions received from the initial investment for each yearly period.

[2]

$$TotalDist_{n,n+1} = Ns * \sum_n^{n+1} \text{Distribution amount per share}$$

Where:

| | | |
|---|---|---|
| Ns | = | Number of shares purchased. |
| $TotalDist_{n,n+1}$ | = | Amount received in distributions between the period n years ago and n+1 years ago. This will be calculated for each yearly period from five years ago for the relevant distribution type. |
| $\sum_n^{n+1} \text{Distribution amount per share}$ | = | Sum of all the distribution rates per share that went ex-dividend during the period n years ago to n+1 years ago for the relevant distribution type. |

Then calculate the total dividend amount received over the entire five-year period.

[3]

$$TotalDist_{n,n+5} = Ns * \sum_n^{n+5} \text{Distribution amount per share}$$

Where:

| | | |
|---|---|--|
| Ns | = | Number of shares purchased. |
| $TotalDist_{n,n+5}$ | = | Amount received in distributions between the period five years ago and the latest month end for the relevant distribution type. |
| $\sum_n^{n+5} \text{Distribution amount per share}$ | = | Sum of all the distribution rates per share that went ex-dividend during the period five years ago to latest month end for the relevant distribution type. |

Further calculate the change in the distributed amount per year along with other statistics.

Change in distributed amount:

[4]

$$\% \text{ Change in Distribution}_{y,y+1} = \frac{\text{TotalDist}_{n+1,n+2}}{\text{TotalDist}_{n,n+1}}$$

Where:

| | | |
|---|---|---|
| $\% \text{ Change in Distribution}_{y,y+1}$ | = | Change in distribution amount between year y and year y+1 for the relevant distribution type. |
|---|---|---|

| | | |
|----------------------------|---|---|
| $\text{TotalDist}_{n,n+1}$ | = | Amount received in distributions between the period n years ago and n+1 years ago. This will be calculated for each yearly period from five years ago for the relevant distribution type. |
|----------------------------|---|---|

Average yearly distribution:

[5]

$$\text{AvgDist} = \frac{\text{TotalDist}_{n,n+5}}{5}$$

Where:

| | | |
|------------------|---|---|
| AvgDist | = | Average distributed amount paid per yearly period for the relevant distribution type. |
|------------------|---|---|

| | | |
|----------------------------|---|---|
| $\text{TotalDist}_{n,n+5}$ | = | Amount received in distributions between the period five years ago and the latest month end for the relevant distribution type. |
|----------------------------|---|---|

Range of yearly distributions:

[6]

$$\text{RangeDist} = \text{MaxYearlyDist} - \text{MinYearlyDist}$$

Where:

| | | |
|--------------------|---|--|
| RangeDist | = | Range of the distributed amounts paid per year for the relevant distribution type. |
|--------------------|---|--|

| | | |
|------------------------|---|---|
| MaxYearlyDist | = | Maximum amount received in distributions for the yearly periods for the relevant distribution type. |
|------------------------|---|---|

| | | |
|------------------------|---|---|
| MinYearlyDist | = | Minimum amount received in distributions for the yearly periods for the relevant distribution type. |
|------------------------|---|---|

Standard deviation of yearly distributions:

[7]

$$\sigma Dist = \sqrt{\frac{1}{4} \sum_{y=1}^y (TotalDist_y - AvgDist)^2}$$

Where:

| | | |
|---------------|---|---|
| $\sigma Dist$ | = | Standard deviation of the distributed amounts paid per year for the relevant distribution type. |
| $TotalDist_y$ | = | Amount received in distributions during yearly period y for the relevant distribution type. |
| $AvgDist$ | = | Average distributed amount paid per yearly period for the relevant distribution type. |

The change in the invested amount (from movement of the net asset value and distributions) per year can be calculated.

[8]

$$Change\ in\ Invested\ Amount_{y,y+1} = (Ns * Nav_{y+1}) - (Ns * Nav_y)$$

Where:

| | | |
|--|---|---|
| $Change\ in\ Invested\ Amount_{y,y+1}$ | = | Change in value of the shares held during the period. |
| Nav_{y+1} | = | Net asset value per share of the share class at the end of the yearly period. |
| Nav_y | = | Net asset value per share of the share class at the beginning of the yearly period. |

From this, the price return on investment and price return on investment plus distributions can be calculated.

[9]

$$Price\ return\ on\ investment = (Ns * Nav_{y+5})$$

Where:

| | | |
|---------------------------------|---|---|
| $Price\ return\ on\ investment$ | = | The value, as at the latest month end, of the shares purchased with the initial 100,000 investment. |
| Nav_{y+5} | = | Net asset value per share of the share class at the latest month end. |

[10]

$$\text{Price return on investment plus Distributions} = (Ns * Nav_{y+5}) + TotalDist_{n,n+5}$$

Where:

| | | |
|-----------------------------------|---|---|
| <i>Price return on investment</i> | = | The value, as at the latest month end, of the shares purchased with the initial 100,000 investment plus the amount received via distributions during that period. |
| <i>Nav_{y+5}</i> | = | Net asset value per share of the share class at the latest month end. |
| <i>TotalDist_{n,n+5}</i> | = | Amount received in distributions between the period five years ago and the latest month end for the relevant distribution type. |



Methodology History

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|---------------|--------------|--|
| Version: 1.0 | 30 Sept 2019 | Original publication |
| Version: 1.01 | 30 June 2020 | Fixed typo in standard deviation calculation |
| Version: 1.1 | 30 Nov 2021 | Introduction of distribution breakdown |