

## **Volatility 波幅**

The volatility of the fund is measured by standard deviation.

基金的波幅是以標準差來衡量。

## **Standard Deviation 標準差**

This statistical measurement of dispersion about an average, depicts how widely a fund's returns varied over a certain period of time. Investors use the standard deviation of historical performance to try to predict the range of returns that are most likely for a given fund. When a fund has a high standard deviation, the predicted range of performance is wide, implying greater volatility.

標準差統計一組數值自平均值分散的程度，描述基金回報在特定時間內的變動。投資者可利用基金歷來回報的標準差來預測基金將來最有可能的回報範圍。基金的標準差愈大，其預期回報範圍就愈廣，也意味基金的波動性愈高。

Standard deviation is most appropriate for measuring the risk of a fund if it is an investor's only holding. The figure cannot be combined for more than one fund because the standard deviation for a portfolio of multiple funds is a function of not only the individual standard deviations, but also of the degree of correlation among the funds' returns.

如果投資者只持有一隻基金，標準差即最適用於測量該基金的風險。但如果投資組合持有多隻基金，投資者並不能視個別基金標準差的總和為組合的標準差，原因是組合的標準差不僅取決於個別基金的標準差，還取決於基金之間的回報關聯性。

If a fund's returns follow a normal distribution, then in approximately 68% of the time they will fall within one standard deviation of the mean return for the fund, and 95% of the time within two standard deviations.

如果基金回報屬常態分佈，其回報則有約 68% 機會分佈在距離平均值的 1 個標準差範圍之內，以及有約 95% 機會分佈在距離平均值的 2 個標準差範圍之內。

At Morningstar, the standard deviation is computed using the trailing monthly total returns for the appropriate time period. All of the monthly standard deviations are then annualized. Standard deviation is also a component in the Sharpe Ratio, which assesses risk-adjusted performance.

Morningstar 以既定時間內的月度總回報計算標準差，繼而將所有月度標準差年度化。標準差亦為夏普比率的組成部份，該比率評估投資的風險調整後回報。

## **Sharpe Ratio 夏普比率**

This risk-adjusted measure was developed by Nobel Laureate William Sharpe. It is calculated by using standard deviation and excess return to determine reward per unit of risk.

夏普比率是由諾貝爾經濟學獎得主威廉·夏普（William Sharpe）開發的風險調整指標，通過標準差及超額回報計算投資組合每承受一個風險單位而產生的回報。

The higher the Sharpe ratio, the better the fund's historical risk-adjusted performance. The Sharpe ratio is calculated for the relevant period by dividing a fund's annualized returns over the risk-free rate by its annualized standard deviation.

基金的夏普比率愈高，意味其歷來風險調整後回報愈好。夏普比率的計算方法為將基金相關時段的年度化回報減去無風險利率，再除以年度化標準差。

It is recalculated on a monthly basis. Since this ratio uses standard deviation as its risk measure, it is most appropriately applied when analyzing a fund that is an investor's sole holding. The Sharpe ratio can be used to directly compare how much risk two funds each had to bear to earn excess return over the risk-free rate.

Morningstar 會每月重新計算夏普比率。由於夏普比率以標準差作為量度風險的指標，因此該比率最適合用於分析一隻投資者唯一持有的基金。投資者可以夏普比率直接比較兩隻基金需承受多大的風險來換取超額回報。