Cabana Performance Reporting Methodology
Revised July 2018

The below applies to all fact sheets, marketing materials and performance updates produced after July 1, 2018.

Introduction

This document describes the method for calculating returns used in Cabana fact sheets and on the Portfolio Performance pages on Cabana's website (www.cabanaportfolio.com). The following descriptions cover gross of fees ("GOF") calculation. Net of fee ("NOF") returns are obtained by discounting the GOF return by the appropriate prorated maximum advisory fee percentage. The management fee used is 3% until 3/1/2017 and 2% thereafter.

Portfolio Returns Importing

Run the machine with $100 trading cost and 0% management fee on the associated "actual" file as follows:

    _Moderate.xml
    _Conservative.xml
    _Balanced.xml
    _Growth.xml
    _Aggressive.xml
    _Alpha Income.xml
    _Accumulator.xml

Export daily portfolio values from the machine and convert to daily returns. Copy these values into the spreadsheet with name similar to "Import Conservative Returns.xlsx". Import these daily returns into the corresponding Morningstar Direct model portfolio. This automatically updates the corresponding portfolio fact sheet in Morningstar Presentation Studio to the next month. We configure MS Direct to apply the appropriate management fee for NOF returns.

Calculations

The machine reports daily values from which daily returns are calculated as follows.

12/1/2017	1.32234	----------
12/2/2017	1.32843	.004605
12/3/2017	1.33128	.002145

The middle column is exemplary of machine daily values. The machine begins with a value of 1.0 at the starting date, typically 1/1/2003, so the value of 1.32234 corresponds to a 32.2% increase. Daily returns in the last column are calculated as

$$r = \frac{v_2}{v_1} - 1$$

Where v_1, v_2 are successive daily account values and r is the decimal daily return. The daily return value 0.004605 corresponds to 0.46% increase. These manually derived daily returns then import to drive the various Morningstar Direct model portfolios.

Morningstar Direct internally determines monthly returns from the geometric linking of n daily returns using

$$r_m = (1 + r_{1)\ldots}(1 + r_n)\text{-}1$$

to calculate the monthly return r_m.

Fact Sheet Notes

In summary, portfolio returns are generated with the machine to create hypothetical returns based on the record of actual trading. Portfolios have returns associated with 0% and calculate the 2% return using a wrapper in Morningstar Direct model portfolios. The wrapper is necessary when the management fee changes in the middle of the year as it did on 3/1/2017. Note that actual returns will diverge from hypothetical returns if accounts are not rebalanced timely.

Weekly Return Calculation Methodology

Every Tuesday, Cabana reports weekly net returns on each portfolio over two time periods: year-to-date (last close of the prior year, e.g. 12/29/2017 to Monday close) and last-week (Monday close to Monday close). Performance is reported on Cabana's blog and sent to Cabana Asset Management clients via email (www.cabanaportfolio.com/blog). We run model trading simulation (the Machine) GOF and NOF on each portfolio for trailing-week and year-to-date returns. As a double check, we run a report on sample accounts in Morningstar Office for comparison.

Cabana Performance Reporting Methodology

Revised January 2018

The below applies to all fact sheets, marketing materials and performance updates produced after January 1, 2018.

Introduction

This document describes the method for calculating returns used in Cabana factsheets and on the Portfolio Performance pages on Cabana's website (www.cabanaportfolio.com). The Moderate Portfolio is calculated with daily returns corrected by a small additive offset so that the geometric linking of daily returns matches the Morningstar Office report for the given month. All other portfolios are not so corrected. The following descriptions cover gross of fees calculation. Net of fee returns are obtained by discounting the gross of fees return by the appropriate prorated maximum advisory fee percentage.

Moderate Portfolio

Run the machine with $5 trading cost and 0% management fee on the "actual" file _Moderate.xml which is a record of actual trades for the Moderate portfolio. Export the daily values from the machine and convert to daily returns. Copy these returns into the spreadsheet with name similar to "20180101 Moderate Import.xlsx". Extend the spreadsheet structure into the new month and it calculates updated

daily values such that the geometric linking of daily returns produces a monthly return that matches the monthly return produced by running a Morningstar Office report over the given month using a suitable Account group for the Moderate portfolio and for the given month. Import these adjusted daily returns into the corresponding Morningstar Direct model portfolio. This automatically updates the Moderate portfolio factsheet in Morningstar Presentation Studio to the next month.

All Other Portfolios

Run the machine with $5 trading cost and 0% management fee on the associated "actual" file as follows:

      _Conservative.xml
      _Balanced.xml
      _Growth.xml
      _Aggressive.xml
      _Alpha Income.xml
      _Accumulator.xml

Export daily portfolio values from the machine and convert to daily returns. Copy these values into the spreadsheet with name similar to "Import Conservative Returns.xlsx". Import these daily returns into the corresponding Morningstar Direct model portfolio. This automatically updates the corresponding portfolio factsheet in Morningstar Presentation Studio to the next month.

Calculations

The machine reports daily values from which daily returns are calculated as follows.

12/1/2017	1.32234	----------
12/2/2017	1.32843	.004605
12/3/2017	1.33128	.002145

The middle column is exemplary of machine daily values. The machine begins with a value of 1.0 at the starting date, typically 1/1/2003, so the value of 1.32234 corresponds to a 32.2% increase. Daily returns in the last column are calculated as

$$r = \frac{v_2}{v_1} - 1$$

Where v_1, v_2 are successive daily account values and r is the decimal daily return. The daily return value 0.004605 corresponds to 0.46% increase. These manually derived daily returns then import to drive the various Morningstar Direct model portfolios.

Morningstar Direct internally determines monthly returns from the geometric linking of n daily returns using

$r_m = (1 + r_{1)}...(1 + r_n)\text{-}1$

to calculate the monthly return r_m.

Factsheet Notes

In summary, portfolio returns are generated with the machine to create hypothetical returns based on the record of actual trading. Note that the Accumulator Portfolio has 0% and 2% exports from the machine. All other portfolios have returns associated with 0% and calculate the 2% return using a wrapper in Morningstar Direct model portfolios. The wrapper is necessary when the management fee changes in the middle of the year as it did in 2017. Note that actual returns will diverge from hypothetical returns if accounts are not rebalanced timely.

Weekly Return Calculation Methodology

Every Tuesday, Cabana reports weekly net returns on each portfolio over two time periods: year-to-date (last close of the prior year, e.g. 12/29/2017 to Monday close) and last-week (Monday close to Monday close). Performance is reported on Cabana's blog and sent to Cabana Asset Management clients via email (www.cabanaportfolio.com/blog). We run Morningstar Office Unrealized Gain/Loss Reports (GOF) on each portfolio using a sample of Cabana retail accounts in the strategy. These returns fulfill the GOF reporting.

For YTD NOF value, we adjust the GOF return by a percentage calculated as a proportion of the maximum 2% management fee formed by the ratio of the number of weeks into the year divided by 52. This number rises throughout the year and becomes 2% at week 52 at the end of December. The NOF return is then calculated as the geometric linking of the GOF return and the prorated management fee (similar to the formula above). For weekly NOF value, we subtract 0.038% from the GOF percentage (2%/52).

As a double check, we calculate hypothetical returns based on a model account and historical market prices. We perform these calculations and compare to the returns generated from Morningstar Office Reports. The returns reported are from Morningstar Office reports as described above.