Account and investment performance guide

Account and investment performance (sometimes known as the rate of return) is an indication of the gain or loss over a period of time as a combined group of investments (account) or an individual investment option.

This guide has been put together to provide you with an explanation of how Shadforth Portfolio Service calculates performance.

How is account and investment performance calculated?

Performance is calculated by dividing the income and change in market value of the account or investment by the weighted average amount invested during the period.

The following information is used to calculate performance:

- **Opening balance** – the balance of the account or investment at the start date.
- **Closing balance** – the balance of the account or investment at the end date.
- **Redemptions** – all redemptions from the account during the report period, including tax, insurance premiums and pension payments.
- **Purchases** – the sum of all contributions, rollovers and deposits (as applicable) during the report period.
- **Sells** – all sell transactions from an investment during the report period.
- **Buys** – all buy transactions into an investment during the report period
- **Income** – all distributions/dividends that have been received within the period.
- **Growth** – the change in account value for the period after allowing for purchases and redemptions.
- **Reporting period** – the number of days between the start and end dates selected.
- **Days held** – the number of days in the reporting period from when the investment was first held until the reporting end date.

Performance is calculated for a 12 month period to the current date. If an account or investment is less than 12 months old, the performance will be calculated from the inception date or purchase date.

For the formulae that Shadforth Portfolio Service uses, along with examples, please refer to the 'Account and investment performance formulae and examples' on pages 3 to 6.

How do insurance premiums and tax affect the performance calculation?

Insurance premiums and income tax are considered as a redemption and therefore do not impact the performance figure.

What does net account performance mean?

Net account performance reflects the return after fees and costs are deducted, including advice fees (if applicable).

What does gross account performance mean?

Gross account performance reflects the return after fees and costs are deducted but excludes advice fees (if applicable). For the purpose of calculating the **gross** account performance, advice fees are considered as a redemption and therefore do not impact the performance figure.

Why is the performance displayed for periods less than 12 months exaggerated when compared to a longer time frame?

Performance for 12 months or more is shown as a percentage per annum compound. Performance for less than one year is not annualised and instead shows the total return achieved for that period.

How is account and investment performance calculated where there have been multiple periods of investment(s)?

Where there have been multiple periods of investment (ie the account or investment has had a zero balance one or more times during the total period), the performance calculation produces an approximate average performance over the period of investment. For example, where an account or investment achieved a performance of 2 per cent for a period (of less than a year), had no balance for a period, and then achieved a performance of 4 per cent for a subsequent period (of the same length as the first period), an approximate average performance of 3 per cent will be shown.

How is investment performance for cash investments calculated?

Interest on cash investments, including the Cash Account, is calculated by dividing the sum of all the daily interest rates in the reporting period by the number of days in the reporting period.

Is the performance displayed for each investment option held gross or net of fees and taxes?

The investment performance displayed for each investment option is net of any indirect cost ratio, transaction costs or performance fees of the underlying investments but is gross of ongoing fees, expenses and taxes for the account. The ongoing fees and expenses are applied to the account as a whole, rather than each investment held.

Why is the performance displayed differently when I compare two accounts with exactly the same investment holdings and account allocations?

The performance calculation takes into account all transactions (such as redemptions, purchases and income) that occurred during the period for each account.

These transactions are given a weighting to more accurately reflect the impact the transaction has on the earning capacity of the account. For example, a transaction that occurs at the beginning of the period will have a greater weighting than a transaction that occurs near the end of the period.

This means that the performance will differ for each account as they would have had different transaction amounts and timing during the selected period.

What are pending transactions and are these transactions included in performance calculations?

A pending transaction is an investment buy or sell that has not been finalised with the fund manager or broker. These transactions are included in the current state until the transaction is completed. For example, a pending sell from Fund A will be considered as part of Fund A until the transaction is completed.

Why is investment performance not displayed for a term deposit?

Term deposits have a fixed rate of return for a fixed term. No calculation is required. The interest rate applicable will be displayed as part of the term deposit name displayed under product option.

Are term deposits included in the account performance calculation?

Term deposits are included in the account performance calculation. When a term deposit matures the proceeds (principal and interest) are credited to the Cash Account. Once this has occurred they will both be included in the account performance. We do not include accrued interest in the account performance.

Account and investment performance formulae and examples

Account performance formula

$$\frac{\left(\text{Closing Balance} - \text{Opening Balance} + \text{Redemptions} - \text{Purchases}\right) \times \text{Days in Reporting Period}}{\left(\text{Opening Balance} \times \text{Reporting Period}\right) - \left(\text{Redemption Transaction Amount} \times \text{Days Held}\right) + \left(\text{Purchase Transaction Amount} \times \text{Days Held}\right)}$$

Example account performance calculation for your account

Days in the reporting period 488 (01/04/2019–31/07/2020)

#	Transaction type	Transaction date	Amount	Days held	Cash flow
1	Account opening balance	1/04/2019	$0	–	–
2	Rollover in	1/04/2019	$120,000	488 days	$58,560,000
3	Administration fee	20/07/2019	$100	378 days	-$37,800
4	Partial withdrawal	1/08/2019	$8,000	366 days	-$2,928,000
5	Insurance premium	15/09/2019	$300	321 days	-$96,300
6	Administration fee	1/10/2019	$100	305 days	-$30,500
7	Income tax	14/02/2020	$1,500	169 days	-$253,500
8	Advice fees - Ongoing	20/04/2020	$50	102 days	-$5,100
9	Closing balance	31/07/2020	$125,000	–	–
	Total				**$55,208,800**

Table 1.1

Account performance calculation – with figures from table 1.1

Example account performance (net) calculation for your account

Non-annualised return

$$\frac{\left(\overset{(9)}{125{,}000} - \overset{(1)}{0} + \begin{matrix}(4)\ 8{,}000\\(5)\ 300\\(7)\ 1{,}500\end{matrix} - \overset{(2)}{120{,}000}\right) \times 488}{\left(\overset{(1)}{0} \times 488\right) - \left(\begin{matrix}(4)\ 8{,}000\\(5)\ 300\\(7)\ 1{,}500\end{matrix} \begin{matrix}\times\\\times\\\times\end{matrix} \begin{matrix}366\\321\\169\end{matrix}\right) + \left(\overset{(2)}{120{,}000} \times 488\right)}$$

$$\frac{(125{,}000 - 0 + 9{,}800 - 120{,}000) \times 488}{0 - 3{,}277{,}800 + 58{,}560{,}000} = \frac{7{,}222{,}400}{55{,}282{,}200} = 0.130646 = 13.06\% \text{ performance for your account}$$

Annualised return

((1+PeriodReturn)^(365/Days in reporting period))-1

=((1+0.130646)^(365/488))-1

= 0.096189 = 9.62%

Example account performance (gross) calculation for your account

Non-annualised return

$$\left(\begin{array}{c}(9)\\125,000\end{array} - \begin{array}{c}(1)\\0\end{array} + \begin{array}{c}(4)\ 8,000\\(5)\ 300\\(7)\ 1,500\\(8)\ 50\end{array} - \begin{array}{c}(2)\\120,000\end{array}\right) \times\ 488$$

$$\left(\begin{array}{c}(1)\\0\end{array} \times\ 488\right) - \left(\begin{array}{ccc}(4)\ 8,000 & x & 366\\(5)\ 300 & x & 321\\(7)\ 1,500 & x & 169\\(8)\ 50 & x & 102\end{array}\right) + \left(\begin{array}{c}(2)\\120,000\end{array} \times\ 488\right)$$

$$\frac{(125,000 - 0 + 9,850 - 120,000) \times 488}{0 - 3,282,900 + 58,560,000} = \frac{7,246,800}{55,277,100} = 0.131099 = 13.11\%\ \text{performance for your account}$$

Annualised return

$((1+PeriodReturn)^\wedge(365/\text{Days in reporting period}))-1$

$=((1+0.131099)^\wedge(365/488))-1$

$= 0.096518 = 9.65\%$

Investment performance formula

1. Growth Calculation – Investment Level

$$\frac{\left(\text{Closing Balance} - \text{Opening Balance} + \text{Sells} - \text{Buys}\right) \times \text{Days in Reporting Period}}{\left(\text{Opening Balance} \times \text{Reporting Period}\right) - \left(\text{Sells Transaction Amount} \times \text{Days Held}\right) + \left(\text{Buys Transaction Amount} \times \text{Days Held}\right)}$$

2. Income Calculation – Investment Level

$$\frac{\left(\text{Income}\right) \times \text{Days in Reporting Period}}{\left(\text{Opening Balance} \times \text{Reporting Period}\right) - \left(\text{Redemption Transaction Amount} \times \text{Days Held}\right) + \left(\text{Purchase Transaction Amount} \times \text{Days Held}\right)}$$

Example investment performance calculation for an investment option

#	Transaction type	Transaction date	Amount	Days held	Cash flow
1	Opening balance	01/04/2015	$90,000	–	$90,000
2	Investment purchase	01/04/2015	$500	366 days	$183,000
3	Investment purchase	01/04/2015	$2,000	366 days	$732,000
4	Investment redemption	30/06/2015	$1,000	276 days	-$276,000
5	Income from investment	31/01/2016	$1,500	61 days	$91,500
6	Closing balance	31/03/2016	$110,000	–	-$110,000
	Total				$710,500

Table 1.2

Investment performance growth calculation – with figures from table 1.2

$$\frac{\left(\begin{array}{c}(6)\\110{,}000\end{array} - \begin{array}{c}(1)\\90{,}000\end{array} + \begin{array}{c}(4)\\1{,}000\end{array} - \begin{array}{c}(2)\ 500+\\(3)\ 2{,}000\end{array} \right) \times 366}{\left(\begin{array}{c}(1)\\90{,}000\end{array} \times 366 \right) - \left(\begin{array}{c}(4)\\1{,}000\end{array} \times 276 \right) + \left(\begin{array}{c}(2)\ 500\\(3)\ 2{,}000\end{array} \times \begin{array}{c}366\\366\end{array} \right)}$$

Investment performance growth calculation

$$\frac{18{,}500 \times 366\ \text{days}}{32{,}940{,}000 - 276{,}000 + 915{,}000} = \frac{6{,}771{,}000}{33{,}579{,}000} = 0.20164 = 20.16\%\ \text{Growth for the investment option}$$

Investment performance income calculation – with figures from table 1.2

$$\frac{\left((5)\ 1{,}500 \right) \times 366}{\left(\begin{array}{c}(1)\\90{,}000\end{array} \times 366 \right) - \left(\begin{array}{c}(4)\\1{,}000\end{array} \times 276 \right) + \left(\begin{array}{c}(2)\ 500\\(3)\ 2{,}000\end{array} \times \begin{array}{c}366\\366\end{array} \right)}$$

Investment performance income calculation

$$\frac{1{,}500 \times 366\ \text{days}}{32{,}940{,}000 - 276{,}000 + 915{,}000} = \frac{549{,}000}{33{,}579{,}000} = 0.01635 = 1.63\%\ \text{Income for the investment option}$$

Investment performance growth plus income calculation

(Growth) 0.20164 + (Income) 0.01635 = 0.21799 = 21.79% Investment performance for the investment option

Cash investments average interest rate formula

$$\frac{\left(\begin{array}{c}\text{Sum of all}\\\text{Daily Interest Rates in Reporting Period}\end{array} \right)}{\text{Days in Reporting Period}}$$

Example average interest rate calculation for a cash investment

#	Date	Daily interest rate (%)
1	25/03/2016	2.14
2	26/03/2016	2.13
3	27/03/2016	2.11
4	28/03/2016	2.16
5	29/03/2016	2.11
6	30/03/2016	2.16
7	31/03/2016	2.11

Table 1.3

Average interest rate calculation – with figures from table 1.3

$$\left(\underset{2.14}{\overset{(1)}{}} + \underset{2.13}{\overset{(2)}{}} + \underset{2.11}{\overset{(3)}{}} + \underset{2.16}{\overset{(4)}{}} + \underset{2.11}{\overset{(5)}{}} + \underset{2.16}{\overset{(6)}{}} + \underset{2.11}{\overset{(7)}{}} \right)$$

$$7$$

Average interest rate calculation

$$\frac{14.92}{7} \quad = \quad 2.13143\% \text{ Average interest rate for the cash investment}$$

For more information speak to Shadforth ClientFirst on 1800 931 792

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