

Specification Sheet: Reduction in Yield

Overview of the tool

In simple terms, the Reduction in Yield tool is used for creating a forecast or model of the effects that applying charges will have on the resulting values of an investment.

The tool allows the user to enter up to two different investment along with their charge structure and provides a comparison between the two.

What is a forecast?

We refer to a forecast as a reduction in yield calculation, over a specific number of years.

- Each forecast is an independent entity. Multiple forecasts can be made for a client, but these do not interact with each other.
- A forecast is made up of a number of fixed assumptions, as well as some variable assumptions such as growth rates, contributions, investment period and charges.

Key assumptions

- A forecast is linked to a client, and has a specific investment period, this is entered in years and months or can be linked to a specific client birthday. The tool will calculate the months and years required based on the age entered.
- Calculations are performed on a monthly basis. Any entered growth rates and charges (other than the initial charge) will be converted to a monthly value for use in the calculations.
- The initial charge is applied from day 1 of month 1
- Any charges and fees (other than the initial charge) are applied monthly in arrears. This means the charges incurred in month 1 are applied on day 1 of month 2. As an example, this would mean that a 12 month comparison would only have 11 monthly charges applied and a 10 year comparison would have 119 monthly charges applied. This methodology was chosen as we understand this is the most common method of charging adopted by investment and pension providers.
- Calculations are not rounded, but visual outputs seen by the user are rounded to the nearest whole number.

Calculations Used

Converting Annual Rates to Monthly Rates

Growth Rates and Percentage Charges:

$$\left(1 + \left(\frac{rate}{100}\right)\right)^{1/12} - 1$$

Fixed Amount Charges:

$$\frac{Charge}{12}$$

Calculating Growth and Charges on a monthly basis

We apply any monthly contributions to the investment and then apply the monthly growth.

$$(Existing\ Investment + Monthly\ Contribution) * (1 + Monthly\ Growth)$$

We then use this new value to calculate the charges.

$$(Investment * Monthly\ Percentage\ Charge) + Monthly\ Fixed\ Charges$$

This value will then be subtracted from the investment amount.

Calculating the Reduction in Yield

In order to work out the Reduction in Yield as well as the Effect of Reduction, we run a set of separate calculations where we apply just the monthly contributions and growth to use in a comparison.

We calculate the Reduction in Yield by re-running the calculations while reducing the growth rates while not applying charges until the final value of these calculations match the standard calculations.

This calculated growth value is set as the net yield and the reduction is calculated by taking the entered growth rate and subtracting the calculated growth value.

Calculating the Effect of Reduction

This is calculated by taking the value of the investment from the set of calculations where no charges have been applied at a given time and subtracting the corresponding value from the set of calculations where the charges were applied.

Tiered Charging

This method allows the user to set a tiered list of portfolio charges.

Example:

£0 - £30,000 = 0.7%

£30,001 - £50,000 = 0.5%

£50,001 and above = 0.3%

An investment value of £100,000 will have the first £30,000 charged at 0.7%, the next £20,000 will be charged at 0.5% and the remaining £50,000 will be charged at 0.3%.

Milestone Charging

This method allows the user to set a list of portfolio charges, the difference between this and the tiered charging is that rather than filling different bands, once an investment passes a specific value the whole investment will be charged at the new rate.

Example:

£0 - £30,000 = 0.7%

£30,001 - £50,000 = 0.5%

£50,001 and above = 0.3%

In year one the investment has a value of £25,000, this results in a portfolio charge of 0.7% on the whole £25,000.

By year 5 this investment has grown to £35,000, this results in a portfolio charge of 0.5% on the whole £35,000.