

## Using the UKSA Internal Rate of Return (IRR) Spreadsheet

This document explains why you may want to use the UKSA IRR Spreadsheet, and how to use it. The spreadsheet can be downloaded from the members section of the UKSA web site ([www.uksa.org.uk](http://www.uksa.org.uk)) and it would help to be looking at the spreadsheet when reading this note.

The Internal Rate of Return (IRR) is a measure of the return represented by a number of cash flows that are spread over a period of time. Typically it is used by businesses to evaluate capital investment projects and is based on a discounted cash flow analysis (where future returns are discounted to take account of the time value of money). When evaluating investment returns, the IRR is the discount rate that makes the net present value of all cash flows equal to zero.

But when investing in stock and shares, clearly we are looking for a future return (both from capital appreciation and dividends) so it is just as useful for evaluating such flows. In effect, if you calculate the IRR for an investment in a particular company, you can then easily compare it with the equivalent return you would have got from an alternative investment such as a bank deposit. The IRR is usually given as an annual percentage rate of return.

It is not always easy to recognise precisely the level of return of an investment, particularly when there are multiple transactions spread over many years. For example, you may get 2 or more dividends (ie. cash receipts) per year, and you may buy and sell shares in a company over the same period of time. It is probably an unusual investor, and an unwise one, who only makes a single purchase of shares for their portfolio, and holds it for some years before selling it all as one lot. Much better to stagger purchases over time as you establish knowledge and confidence in a company, or even go to the extent of using “pound/cost” averaging to smooth the investment. And investors often like to take “part profits” by selling some of their shares after there has been a substantial rise in the value of a holding.

Excel spreadsheets have a built-in function for calculating IRR, and the UKSA supplied spreadsheet just shows how this can be used to perform an evaluation of a set of share purchases and sales, plus dividend receipts – these are simply individual cash flows as far as the IRR calculation is concerned.

The spreadsheet is fairly self explanatory, and it is based on entering the cash flows for individual periods – these would normally represent annual cash flows so as to give an annual rate of return, but if you want to enter more detail you could assume the “Period” column represented calendar months, and then the IRR would be a monthly figure.

Only 20 periods are shown on the spreadsheet as supplied, but you could of course add many more if you wish – in which case the formula in cell H7 would need changing accordingly to cover the extra cash flows in column F.

The investment purchases (which are shown as negative cash in Column F), and the sales and dividends (both positive cash flows) could represent the transactions in an individual share, or more than one if you want to get an overall picture. The data could of course be obtained from the UKSA Transactions & Dividends Spreadsheet if you are using that by copying and pasting the appropriate totals.

### **Modified Internal Rate of Return (MIRR)**

Note that the simple IRR calculation assumes that the initial cash invested is not borrowed, and that any cash generated is reinvested at the same rate. These can be unreasonable assumptions of course and Excell also has a Modified Internal Rate of Return function (MIRR) which can take account of those. It enables you to enter the interest you may be paying on the money borrowed to make the investment, and the interest you may be getting on any cash received. Use the Excel "Help" function for more information on the MIRR function, and it would only need a very minor change to cell H7 on the spreadsheet to incorporate that if you feel you need to be that sophisticated.

If you have any questions or comments on the IRR spreadsheet, please call 0870-70-60-600.

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UKSA IRR Spreadsheet.doc