

Mutual funds demystified

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Continuing last time's discussions, there are various 'fundamental factors' that form the basis for determining a financial asset's market price. The key fundamental factors are

1. Estimates of future profits and cash flows of the company
2. Estimates of the discounting rate (Weighted Average Cost Of Capital = WACC) to be used to arrive at the Net Present Value (NPV) of future profits.

We have already outlined the process followed for estimating the future profits.

Today, we will begin looking at how the WACC is arrived at. As this is a bit more complicated, we will try to spread the discussion over the next few issues and treat the subject matter in a very simple manner. In this process there might be repetitiveness on material which has already been discussed. I request the readers to bear with me on this aspect.

First let us look at the purpose of arriving at the WACC. The ultimate purpose is 'to use the WACC as the effective interest rate to be used for discounting the future profits (or more specifically future cash flows derived from future profits)' so that a net value can be obtained in today's terms for the same.

In other words we are trying to put the company's profits expected in different future years on the same footing as the current year's profit. The underlying concept used here is The Time Value of Money.

We will use a small example to illustrate the same:

For simplicity's sake, let us use profit as the base and say that a company made a profit of Rs 100 in the current year. Let us also say that it estimates to make profits of 110, 125 and 135 in the next three years. Let us also assume that the company is expected to wind up its operations at the end of the third year. Let us also assume that the company's WACC is 10% per annum and expected to remain unchanged for the next three years. What is the Nett Present Value (NPV) of this company?

For this we need to arrive at the present value of each of the future year's profits in today's terms. How do we do this? We discount each year's profits by a 'discounting factor'.

Let us take a minute to explain the concept of 'discounting' to those readers who are unfamiliar with this term.

Discounting is easier explained as the opposite of compounding. Compounding is the process through which your money multiplies in a Bank Reinvestment Fixed Deposit Scheme. For example, if the simple rate of interest paid by the bank is 10% then the value of your Rs 10,000 fixed deposit at the end of the first year would be Rs 11,000 made up of Rs 10,000 as principal invested and Rs 1,000 ($10,000 \times 10\%$) as interest for one year.

At the end of year two, the value would be Rs 12,100 made up of Rs 11,000 at the beginning of the year Rs 1,100 ($11,000 \times 10\%$) as interest for the second year. The principle invested (Rs.10,000) and the interest of Rs 1,000 for the first year earn interest in the second year.

Similarly, at the end of year three, the value would be Rs 13,310 made up of Rs 12,100 at the beginning of the year and Rs 1,210 as interest for the third year ($Rs\ 12,100 \times 10\%$).

That is the compounded value of your fixed deposit of Rs 10,000 at the end of three years would be Rs 13,310 at a compounding rate of 10%.

Now, the reverse way (but equally correct) of stating the same numbers would be as follows: The value of Rs 11,000 at the end of year one in today's terms would be Rs 10,000 if a 'discounting rate' of 10% per annum is used. Similarly Rs 12,100 at the end of year two or Rs 13,310 at the end of year would also be equal to Rs 10,000 in today's terms..

To put it in layman's terms – as long as you are comfortable with the rate of 10%, whether Bank A offers you 11,000 at the end of year one or Bank B offers you 13,310 at the end of year three, your net wealth today is the same Rs 10,000.

The process of discounting thus enables you to compare 'apples with apples'; all future profits (and cash flows) numbers are expressed in today's values.

From the above process, we can back calculate the 'discounting factor'. We showed how Rs 10,000 became Rs 11,000 at the end of year one. How do we make the opposite happen? This cumbersome process is simplified by using an equivalent 'multiplication factor' If Rs 11,000 is divided by 1.10 (1 plus the interest rate expressed in decimal terms or $1 + 10/100$), we will get the present value of Rs 10,000. (in compounding multiplication is at work and in discounting we divide). The effect of dividing by 1.10 can be expressed as $1/1.10$ or 0.9090.

If we multiply 11000 by 0.909, we get 10000. This 0.909 is known as the 'discounting factor' for the first year.

For year two, the discounting factor will be 0.826 (for simplicity sake, Rs.10,000 divided by Rs,12,100).

For year three, the discounting factor will be 0.757 (for simplicity sake, Rs.10,000 divided by Rs,13,310).

Discounting factor can be arrived at for any number of years for any interest rate and calculators and computers make the calculations very, very easy.

So, the purpose of arriving at the WACC is decide the appropriate interest rate to use as the discounting factor. We shall examine how to arrive at the appropriate WACC in the months ahead.

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