

POWER OF COMPOUNDING

Compounding is a simple concept that offers astounding returns: if you park your money in an investment with a given return, and then reinvest those earnings as you receive them, your investment grows exponentially over time. With simple interest, you earn interest only on the principal (that is, the amount you initially invested); with compounding, you earn interest on the principal and additionally earn interest on the interest. In other words, it's a way of making your money work harder for you, and is perhaps the most powerful tool that an average investor can use to plan for many of life's financial goals, including retirement.

Compounding refers to the re-investment of income at the same rate of return to constantly grow the principal amount, year after year. Cumulative fixed deposits are a prime example of compounding at work, wherein the total interest that you get paid for the period is in excess of the rate of interest multiplied by the period of the deposit.

Consider what the power of compounding does to an investment of Rs 12,000 a year (that is, an affordable Rs 1,000 a month) in a scheme that offers a conservative 9 per cent return, over 30 years. The total investment of Rs 3.6 lakh (principal) grows to Rs 17.83 lakh over that period.

For the long term:

Compounding rewards disciplined investing and works best over long tenures. In the above example, the first 20 years yield just Rs 6.69 lakh. The last 10 years show the money multiplier effect of the power of compounding. The longer you leave your money untouched, the faster and bigger it grows. For instance, stretching the above investment pattern to 40 years will give you Rs 44.20 lakh.

Two other variables—the principal and the rate of return—determine how much your investment will grow to. Even a one-time investment of Rs 50,000 over 30 years at 9 per cent compound interest will yield Rs 6.63 lakh. Likewise, if the returns are lower by even 1 percentage point, the investment of Rs 12,000 a year for 30 years yields only Rs 14.68 lakh. Over 40 years, the difference is even more pronounced.

The earlier, the better:

The earlier you begin investing, the greater you gain from the merits of compounding. For instance, if you begin an investment plan at age 30 and invest Rs 10,000 a year for just 10 years at 9 per cent a year, and roll over the proceeds until you're 60, you'll get Rs 9.28 lakh on a total investment of Rs 1 lakh. On the other hand, your colleague who begins saving at age 40 and invests Rs 10,000 a year for 20 years at 9 per cent a year will only get Rs 5.58 lakh—on a total investment of Rs 2 lakh. That is, by allowing your money to compound longer, you can be richer than your colleague by Rs 3.70 lakh, although you saved only half as much as he did.

The mathematical equation for calculating the maturity amount (A) of a principal amount (P), invested at a given rate of interest (r) for a specified number of years (n) is: $A = P (1+r)^n$

RULE OF 72

A simple way to figure out the impact of compounding is illustrated by the Rule of 72, which lets you calculate how long your money will take to double. Divide 72 by the rate of return you expect on your investment; the result you get is the number of years until your investment doubles. For instance, if you expect to get an average 9 per cent returns, your money will double in $72/9 = 8$ years.

The Impact of Power of Compounding

Would you care too much whether your rate of return is 12% or 14%? The fact is that if you did, it would make a big difference to your wealth as time progresses. The benefit from compounding arises primarily from the fact that income keeps growing the principal to generate higher absolute returns each year. Higher rates of return or longer investment time periods increase the principal amount in geometric proportions.

The table below shows you how a single investment of Rs100 will grow at various rates of return. 5% is what you might get by leaving your money in a savings bank account, 10% is typically the rate of return you could expect from a one-year bank fixed deposit, 15% is what you could expect by investing in relatively riskier company fixed deposits and 20% or more is what you might get if you prudently invest in equity shares.

At end of Year	5%	10%	15%	20%
1	Rs105	Rs110	Rs115	Rs120
5	Rs128	Rs161	Rs201	Rs249
10	Rs163	Rs259	Rs405	Rs619
15	Rs208	Rs418	Rs814	Rs1541
25	Rs339	Rs1,083	Rs3,292	Rs9,540

Compounding thus lets you make the most of small investments made over long periods of time to accumulate phenomenal wealth.

TM