

**The Power of Compounding**  
**Compiled By V.P.Sriraman. Faculty. BIM**

Albert Einstein called it the greatest mathematical discovery of all time. Benjamin Franklin supposedly said it was the eighth wonder of the world. That is the Power of Compounding!.

Consider the example of the ant and the grasshopper from Aesop's fable.

- The ant, recognizing the importance of saving, starts at age 25 and invests RS.1,000 for 10 years in a portfolio that earns 5.5 percent a year. At that point she stops contributing. But her investment continues to grow; and when she reaches age 67, it is worth Rs.75,352.
- The grasshopper, who spends his money in the early years, doesn't start investing until age 45. In order for him to make the same amount as the ant who started investing 20 years earlier, he will have to invest almost Rs.1,750 a year for 22 years to catch up.

The ant not only earns money on his initial investment, but in subsequent years earns money on previous years' earnings as well.

Let's consider another example from the world's famous sport, the Cricket. Sachin Tendulkar started playing cricket at the age of 16. At 29, he has already amassed over 12,000 runs in one-day matches. On the other hand, Robin Singh joined the Indian team at the age of 25 and has retired now. He could manage only 2,336 runs in one-day matches. Before you begin to wonder if we have lost our marbles, let us tell you what we are trying to arrive at here. The idea is simple: the earlier you start investing, the more likely it is that you would end up making more money. While runs scored in cricket don't multiply automatically, investment does. Surprised? Well, the fundamental principle of compounding helps you realise this.

Credit card companies use the power of compound interest against consumers. If a cardholder does not payoff the entire monthly bill, interest accrues. The next billing period, the cardholder is charged interest on the previous periods' interest, and so on.

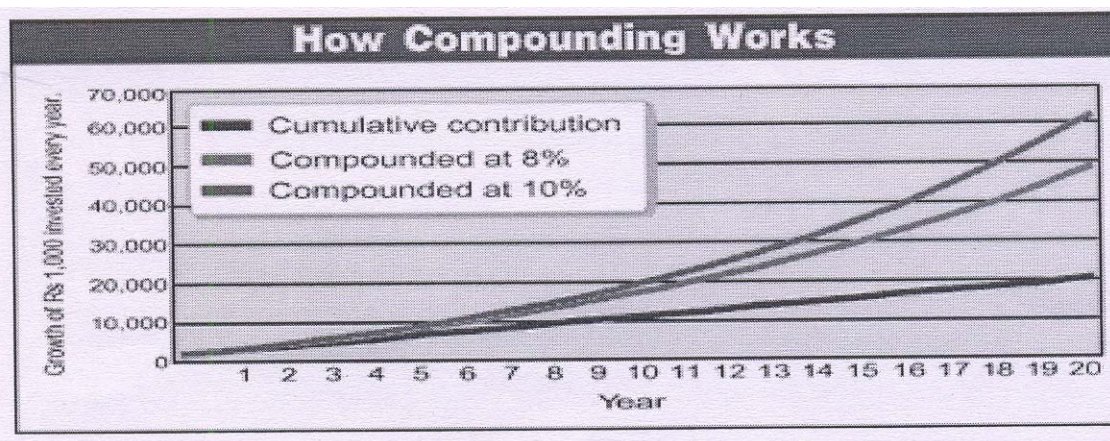
Compounding investment earnings can turn your small investments into a whopping sum after a period of time. The best way to take advantage of compounding is to start saving and investing wisely as early as possible.

Let's see how the concept of compounding works. Suppose Sachin started investing Rs 2,000 per year at the age of 19 and when he reaches 27, he stops investing and locks all his investments till retirement. Robin, however, doesn't make any investment till he is 27. At 27, he starts investing Rs 2,000 a year till the age of 58. The adjacent table tells you how their investments would turn out when they both are 58, assuming that the growth rate is 8 per cent per annum. The results are eye-popping (see the Table: Compounding: A Tale of Two Investors).

<b>Compounding: A Tale of Two Investors</b>				
Age (yrs)	Sachin		Robin	
	Annual Inv (Rs)	Year-end Value (Rs)	Annual Inv (Rs)	Year-end Value (Rs)
19	2,000	2,160	0	0
20	2,000	4,493	0	0
:	:	:	:	:
:	:	:	:	:
26	2,000	22,975	0	0
27	0	24,813	2,000	2,160
28	0	26,798	2,000	4,493
:	:	:	:	:
:	:	:	:	:
57	0	2,49,686	2,000	2,66,427
58	0	2,69,661	2,000	2,89,901
<b>Less Total Inv</b>		<b>16,000</b>		<b>64,000</b>
<b>Total</b>		<b>2,53,661</b>		<b>2,25,901</b>
<b>Growth of Inv</b>		<b>16 fold</b>		<b>4 fold</b>

*Assuming a return of 8 per cent per annum*

What is compounding? Benjamin Franklin once wrote somewhere: "'tis the stone that will turn all your lead into gold Remember that money is of a prolific, generating nature. Money can beget money, and its offspring can beget more." Compounding is a simple, but a very powerful concept. Why powerful? Because compounding is similar to a multiplier effect since the interest that is earned by the initial capital also earns an interest, the value of the investment grows at a geometric (always increasing) rate rather than an arithmetic (straight-line) rate (see How Compounding Works). The higher the rate of return, the steeper the curve.



For example, at an annual interest rate of 8 per cent, a Rs 1,000-investment every year will grow to Rs 50,000 in 20 years. While at a 10 per cent rate of interest, the same investment will fetch you Rs 63,000 in 20 years. So, it is quite clear that a 2 per cent difference in the interest rate can make you richer or poorer by Rs 13,000. And, by staying invested for a longer period, your capital will earn more money for you. As the number of years goes up, the curve will be steeper, which is the effect of compounding.

Basically, compounding is a long-term investment strategy. For example, when you own a mutual fund, compounding allows you to earn interest on your principal. Compounding also occurs when you re-invest your earnings. In the case of mutual funds, this means re-investing your interest or dividend, and receiving additional units. By doing such a thing,

you are earning a return on your returns and the principal. When the principal is combined with the re-invested income, your investment will grow at an increased rate.

The best way to take advantage of compounding is to start saving and investing wisely as early as possible. The earlier you start investing, the greater will be the power of compounding.

To just give an example of saving and investing, The Women's savings movement, explains C.S.Ramalakshmi, Commissioner, Women Empowerment, Govt. of AP, started in 1993 as an offshoot of the total literacy campaigns conducted by the government. Rural Women organized themselves into "thrift and credit" groups with with one rupee saving a day and this mass movement, in which 53 lakh members saved more than Rs 800 crore is rotated internally and lent amongst members twice in a year as per the interest rates fixed by the groups. Such amounts are used for their daily consumption needs.

Thus is the power of compounding!!!.