# THE VALUE MONEY HOLDS

Before beginning to understand the title, let us look at a question. Is it important to save money or save the value of money?

Got confused, yeah?

Well, no need to worry, the answers to this question lies in the backbone of finance i.e., the concept of time value of money. According to the time value of money or TVM in short, the Rs. 2000 note you have at present is worth more than the same note you will have 5 years down the line. Does this mean that we apply depreciation to the value of paper? Well, no. This means that due to inflation; the things you can buy with those Rs. 2000 decrease in quantity after 5 years.

So, the answer to the above question is that it is paramount to save the value of money rather than just preserving those notes. On the basis of the practical application of TVM, let us now see that how accurate is the above justification. Rather than going into theoretical explanations, we will deal with real life examples.

Whenever we study TVM, we look at five of its components-
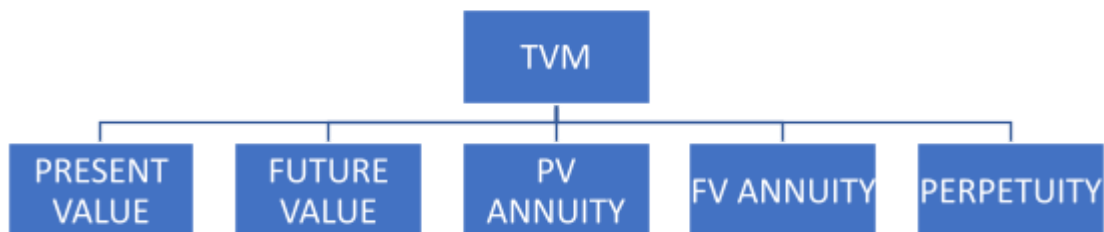
1) PRESENT VALUE- This scenario states the Present Value of a sum of money, which is expected to be received after a given time period.

FOR E.G., Mrs. Sheila is due for retirement 15 years from now. On the basis of her Human life value, she wants a corpus of Rs. 50,00,000 after 15 years. Considering risk-free government securities as her choice for investment, advice Mrs. Sheila as to what amount should she invest in them today? (RoI=9%)

For this, we calculate the present value of these Rs. 50,00,000 as follows-

$PV = FV/(1+r)^n$

PV= 50,00,000/(1+.09)^15

PV= 13,72,700

Thus, Mrs. Sheila should invest Rs. 13,72,700 today to achieve her goal.

2) FUTURE VALUE- Future value refers to the cumulative amount one expects to receive after a fixed duration including the compounding of interest on her initial investment.

FOR E.G., The government has announced an increase in the Dearness Allowance(DA) of the Central Government employees from Jan 1, 2018. Mr. A is thus set to receive Rs. 10,00,000 and parks this cumulative amount in a bank account for the next 10 years for his daughter's marriage who is currently 15. He now wants to know what will be the amount on maturity in 2030 if the bank has committed 7% RoI.

FV= PV*(1+r)^n

FV= 10,00,000*(1+0.07)^10

FV= 19,67,150

Therefore, Mr. A can expect Rs. 19,67,150 in 2030.

3) PRESENT VALUE OF ANNUITY- An annuity is a stream of constant receipts/payments occurring at regular time intervals. The premium payments of a life insurance policy, for instance, are an annuity. When the cash flows occur at the end of each period, the annuity is called deferred annuity. Look at the example below to understand present value of annuity-

Janaki is thinking to subscribe to a life insurance plan which guarantees a monthly payment of Rs. 600 per month for 20 years after her retirement. She wants to know whether the amount she is paying for this benefit at present that is Rs. 85,000 is worth it or not. This "for-your-retirement" plan claims of offering 6%p.a. Help her reach a conclusion.

We go to the excel to solve this using the pmt() function. In the formula, we receive monthly payments, so we use 6%/12 = 0.5% for Rate and 20*12 = 240 for nper.

B	C	D
	PV	₹ -83,748.46
	Annual interest rate	0.06
	Time period	20
	Monthly payment to be received	₹ 600.00

Thus, keeping in mind the company costs to provide such a facility, Janaki is paying a reasonable amount to the life insurance company.

4) FUTURE VALUE OF ANNUITY- This concept is just the reversal of PV of annuity.

FOR E.G. Ridhi has opted for a yearly SIP of Rs. 100 in a debt fund. The average rate of return of the debt fund for the last 5 years is 8%p.a. Considering no change in the rate of return; help Ridhi analyse her investment after a period of 10 years from now.

Amt. paid yearly	-100
R.O.I	0.08
Tenure	10
=FV(E7,E8,E6	₹ 1,448.66

FV(rate, nper, **pmt**, [pv], [type])

Hence, Ridhi will accumulate Rs. 1500 (approx.) after 10 years.

5) PERPETUITY- Perpetuity means that a business/individual receives constant cash flows for an indefinite period of time (like an annuity that pays forever) and according to the formula, its present value is calculated by dividing the amount of the continuous cash payment by the yield or interest rate.

FOR E.G. The GOI has issued a special class of bonds (Face value= Rs. 1,00,000) to be subscribed by the general public.

These D-class bonds come with a feature of no expiry which means that whosoever will buy these bonds will be paid annual interest @10% until their demise. Ramachandran is confused whether or not to invest in these bonds. Help him reach a conclusion.

PV of perpetuity= D/R

Where D- cash inflow

R- Discounting rate which we assume as 9% (risk-free rate).

The PV_P value of these bonds will be 10,000/.09

PV_P= Rs. 1,11,111

He is getting a return of Rs, 11,111 on his initial investment of Rs. 1,00,000 (11.11%) return. Considering a debt option, it is a good opportunity.

With this we end the discussion on Time Value of Money and I hope I was able to convince you that why saving the value of money is more important than saving money. It helps you beat inflation, compensate for the opportunity cost of not spending the money in hand and securing your future cash flows.