CHANGE THE WORLD THROUGH INNOVATIVE INTEREST CALCULATOR

(INFLAPRO[1] with more return at no extra cost)

Prayer:

(original prayer by Adi Shankara)

> vasu devendra yogindram natva gyana pradam gurum
> mumukshanam hitarthaya tatva bodho abhidhiyate

(modified to suit my topic)

> vasu devendra yogindram natva gyana pradam gurum
> sarvajanom hitarthaya INFLPRO abhidhiyate

Eventhough I mentioned sarvajanom, it will be useful to those who aspire a career or influencer of controlling body like RBI, world bank, International Monetary Fund, or those who get associated with insurance regulators such as IRDAI,or private banks, financing companies like Bajaj, Kotak, ShriRam, Tata capital etc, because they only can implement this idea of inflapro. For others it is just information that other than the present day EMI method, there are methods of calculation of interest and repayment.

About myself:

Before going into the topic, let me Introduce about myself (omitted if already introduced). My full name is Brahmadesham Narasimha Iyer Venkataraman. As per custom of my family, first is the village name, then father's name and my first name appears last. The native village is just 1 square kilometer, but the name is synonymous with the greater country.

I hold a degree in Electrical and Electronics Engineering (1971) from Annamalai University, and had formal education in computers, from AU(1970), IBM Delhi(1971) and IIT Madras(1972).

I had served as a consultant for operations, logistics and IT in the Sugar Industry and Automotive industry. Later, I had occupied myself as a teacher and was associated with multiple institutions. Presently, I am enjoying a retired life at Wagholi, Pune.

Websites:

I have two websites and the project report at a glance is downloadable from any of these.

The website as well as the report was made in the year 2010 when I was 62 years of age.

The last page 92 of the downloadable project report at glance shows about myself and the team which helped me in site preparation. (not updated since 2010).

The page 85 shows that investor as well as financier both will be benefited.

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[1]INFLATION PROTECTED RETURN ON INVESTMENT

Power of compounding:

The power of compounding, squares, square roots etc are available in India since ancient times. I will give a small story about it.

Once in a province in India, a king with a passion for chaupar, played with his minister. The king was defeated and asked the minister what reward he wanted. The minister said, just 2 grain of wheat corresponding to first square in chaupar, on first day, double of that, that is 4 grain corresponding to second square, the next day, double of that in next next day and so on for the number of days, corresponding to total number of squares in the choupar. We should know that there were 96 squares in the ancient choupar or 64 squares in present day chess.

The king thought it to be a simple reward. But he could not fulfill the promise beyond 20 days and further accepted the defeat at the hands of his minister, as the king did not know the power of compounding. In fact even for the 64 days(not to mention 96 days of olden choupar), the measure would be 1.8×10^{19}. All the granaries in the world put together cannot accommodate that much quantity.

The growth with Power of compounding is exponential.

This is the power of compounding. The story was popularised by human calculator, Mrs. Shakuntala Devi.

That means, ancient Indians knew about the Power of compounding.

In recent history, when the current Shankaracharya of Kanchi in his interview for selection of Acharya to the seat, was asked a question how to find varga moola, (sq.root) as per vedic studies by his predecessor to predecessor. The student recited the veda mantra and gave an apt answer and he was made acharya.

That is to say that, these are all already available in vedas.

Let us have a tour of the websites:

bnv.bvraghav.com (developed in 2010) and bnvenkat.com (developed later sometime in 2013).

bnv.bvraghav.com

- ☐ Anecdote
- ☐ Inflation table since 1957
- ☐ user interface to calculate inflation
- ☐ graphical representation of INFLAPRO and its versatility
- ☐ Calculator
    - ☐ FD
    - ☐ RD

- ☐ loan
- ☐ pension

bnvenkat.com

- ☐ LIC pension given the annuity per lac
- ☐ Education loan
- ☐ RD
- ☐ Forward calculation with known interest%
- ☐ special loan with interest% same as inflation%
- ☐ COMBO plan
- ☐ Inflapro Insurance

There are some 15-16 items to discuss, and to finish my lecture in another 40 minutes, I have to go through every item in just 2 or 3 minutes. Let me try.

Anecdote:

In 1983, when there was no EMI practice, in banks for loans, I had taken a personal loan of Rs. 25000 from Bank of Baroda, and I had told my intention to pay by EMI method for return of loan, to the bank officials with detail calculation to show how the loan can be paid out in stipulated period, they simply refused and went on by their own method of 'Diminishing Balance Method'.

Now-a-days, EMI is quite common and plenty of calculators are available online as well as application softwares like MS-Excel, Oracle open office calc, Google sheet, etc.

On a similar account, My innovation of INFLAPRO, the inflation protected return on investment, a new methodology, will become popular one day.

Inflation since 1957

Price of an item is not the same year over year, It increases over year and it is known as inflation. Inflation in a shorter period may not reflect the correct picture. One has to go for a long horizon. I considered the inflation since 1957. 1957 is the time when naye paise was introduced in place of anna paise. The memory is green about the prices of commodities of common use.

One need not depend on the government supplied figures, can find the inflation percentage with my 'user choice' and by filling appropriate fields.

One can infer from my chart, from 1957 to 2010, (2010 was the year the webpage was developed), the following observations.

- Food inflation is of the order of 6%,
- dairy products around 8%,

- automobile 8%,
- vegetables around 8%,
- Gold and other items around 11%, from 1957 to 2010.

As an exercise, to find out inflation for user specified data, let us say for gold (8gm sovereign) price in 2010 was 14780 and by end of 2023 it is around 49500, which works out to 9.74%.

People now make hue and cry of petrol prices, in 2010, it was Rs. 55 per litre and now it is 109. When you actually work out the inflation percentage it is just 5.4% only. This shows a downward trend since 2010.

let us go to the next topic, namely:

Graphical representation and versatility:

The graphical illustration of 3 methods with respect to loan, is shown in page 9 of 92 of project report and also in the web page under tour,

1. Diminishing balance method, a straight line, drooping one.

2. EMI method, a straight line and flat one,

3. INFLAPRO method (+10% inflation protection) an exponential upward graph.

4. The versatility of INFLAPRO scheme can be seen from the project at a glance, page number 91 of 92, that, the returns according to various graphs from -10% to +10% :-

   ○ At a negative percentage of inflation, that is at deflation, the graph is exponential and drooping one, more or less like a diminishing balance method, but not a straight line

   ○ at zero percentage of inflation, it is exactly equivalent to EMI

   ○ and at a positive percentage of inflation, it is an exponential upward graph.

- One is at liberty in case of INFLAPRO, to choose a percentage as per customer choice and every calculation is identical.

- Let us go to the next topic.

Calculator (FD, Loan, RD, pension).

Please follow the tour of the web page.
- Go to calculator link
- select FixDep scheme
- The page already has got some data filled
- let us simply submit for 6% inflation, Rs. 100000 principal, Monthly periodicity, 6 years term, starting from end of the current month
- one can view the long illustrious pages of detailed calculation

- The initial payment comes at a discount of 12.81% and final payout is at a premium of 16.68%, compared to conventional equated instalment payout of Rs. 666.67 pm.
- One can view the exponential growth in pay-out from Rs. 581.25 to 777.86 as against conventional Rs. 666.67 per month.
- I request you to fill the data input as per your choice and read and analyse the output on submit.
- **Now let us go back to the calculator page and select 'loan' scheme**
- This page also comes out filled with some data input and you simply submit to read the output of this 6% inflation, 8% interest, monthly frequency, 6 years term and Rs. 100000 principal (loan amount).
- The resulting page is illustrious one
- The initial payment comes at a discount of 12.81% and final payout is at a premium of 16.68%, compared to conventional equated instalment repayment of Rs. 1753.32 pm.
- One can view the exponential growth in pension from Rs. 1528.71 to 2045.76 as against conventional Rs. 1753.32 per month.
- I request you to fill the data input as per your choice and read and analyse the output on submit.
- **Now let us go back to the calculator page and select 'RD' scheme**
- This menu also comes out filled with some data input and you simply submit to read the output of this 6% inflation, 8% interest, monthly frequency, 6 years term and Rs. 100000 maturity amount.
- The resulting page is illustrious one
- The initial monthly deposit comes at a discount of 12.81% and final monthly deposit is at a premium of 16.68%, compared to conventional equated instalment repayment of Rs. 1079.46 pm.
- One can view the exponential growth in monthly deposit from Rs. 941.17 to 1259.50 as against conventional Rs. 1079.46 per month.
- I request you to fill the data input as per your choice and read and analyse the output on submit.
- **Now let us go back to the calculator page and select 'pension' scheme**
- This page also comes out filled with some data input of 6% inflation, 8% interest, monthly frequency, 6 years term and Rs. 100000 principal (investment amount).
- The number of years 6 is too less for a pension scheme, so let us input the time period as **25** years and let us keep all other defaults the same.
- One small point to make about the input option of annuity immediate and annuity at end of year/half year/Quarterly/Monthly as per the input frequency.
- In LIC terminology, deferment is opposite to immediate. In computer terminology and as well as my terminology, late is an antonym to immediate. And deferment is described as a moratorium. Immediate means the annuity starts at the same date as policy date or investment date, and late means the first

- pension is payable at the end of the investing month or quarter or half year or year.
- Example of the above late or end of Y/H/Q/M in case of monthly is, let us say one is investing on 31st January 2024, the first pension would be on 29th February 2024. In case of immediate, the first pension starts at 31st January itself.
- Let us submit.
- The resulting page is illustrious one
- The initial payment comes at a discount of **42.36%** and final payout is at a premium of **133.36%**, compared to conventional equated instalment repayment of Rs. **666.67** pm with return of 100% purchase price.
- One can view the exponential growth in repayment out from Rs. 384.24 to 1555.77 as against conventional Rs. 666.67 per month per lakh of principal.

Let us now go to our site bnvenkat.com and let us go to inflapro #top page

let us revise our idea about inflapro

Inflapro is the calculation for method of inflation protected return on Investment

- It provides periodical payout on FD or pension on a Principal amount at increased value to the extent of inflation protection compared to the previous year same period
- For example if the principal is ₹ 1200000 and interest rate is 8% pa compounded monthly for 25 years then in a conventional method one gets equal amount of ₹ 8000 per month. In inflapro method depending on inflation protection level and other parameters one may get around ₹ 2900 pm in first year ₹ 3200 pm in second year and so on and at 25th year ₹ 29200 pm approximately click custom/sample

- From this we can infer that 8000 rupees per month conventional return is equivalent to only Rs. 2900 at this rate of retun in real terms. Tha nominal return is 8% but the real return is only 2.9%.

- With this idea, let us see the sample pages of others.

let us view the sample pages of some of these pension calculations. Vs. LIC ICICI SBI etc also the mock lic , general loan and education loan

Let me click as per the defaults and one can change the input parameters and submit to see the results.

SO FAR WE HAVE DISCUSSED ONLY THE MATURITY TO BE NIL OR default100%, FURTHER PAYOUT EQUIVALENT TO 100% OF LAST (MATURITY IS WORKED OUT TO GIVE THIS IN CONVENTIONAL PATTERN) OR 50% OF THE LAST.

Default100% means that the maturity is 100% of the principal.
So there is no growth to the principal.

Therefore there are my programs to allow for growth apart from the regular payout/systematic withdrawal such as annuity.

The program is [FWD SWP](#) INFLAFD/OTHERS, Instead of clicking the above let me come from the home page www.bnvenkat.com and go to FWD SWP INFLAfd/OTHERS

Already calculation for the default parameters had been worked out and now we can infer that

for the following input

- Principal ₹ 1,00,000
- Rate of interest 10%
- inflation 7%
- No of years 20
- maturity desired : default 100%
- frequency monthly
- immediate pension off
- small period inflation off
- FOR THE ABOVE WE GOT A STARTING FIRST YEAR PENSION/SWP IS ₹ 6,012.45 PER YEAR AND INCREASES AT 7% PER ANNUM and MATURITY IS SAME AS PRINCIPAL ₹ 1,00,000.

Now one can modify the input parameters and look for output for example

By changing the above rate to 11% and inflation 6% the first year SWP is 7,273, increases by 6%pa and the maturity is the same as principal ₹ 1,00,000

Now let us change the non-auto mode to autoIsOnNow, now the maturity is default320.7%, for this input, the first year SWP is 5000, increases by 6%pa and the maturity is the same as principal ₹ 3,20,710. The 20th year pension/swp is ₹ 15,128 pa

If we recycle the maturity as investment for next 20 years, then the first year of that time, i.e 21st year one gets more than this 15128 increased by 6% gives a pension/swp of ₹ 16035 and the maturity is 3.2 times of the principal, that is ₹ 10.28 lakhs. The story can continue like this forever. What we have to assure is 11% return and 6% inflation.

Government can very easily guarantee the 11% intt and 6% inflation, at least for the Agniveer. Let us see about Agniveer scheme for 20 year entrant and 24 year age pass out,

by clicking the appropriate link in the same page.

The Government need not pay the pass out amount, but in lieu of that, can invest in government controlled SBI/LIC mutual funds and guarantee this 11% return and 6% inflation and pay out ₹ **2,62,147** at the retirement age of 60 and provide increased payout at 6% inflation protection. At 25 th year of retirement at age 85 ₹ **10.61 lakh** and maturity amount of ₹ **26.94 crore.**

If the soldier/survivor is clever, recycle the amount and start receiving a pension/swp of ₹ 11.7 lakh at 26th year by nominee and get a maturity of 120.27 crore at 25 years further to his 85 years and the story can continue for generations.

The other schemes in the same menu are RD, FD, loan etc.

We will see more about AGNIVEER while we are dealing with the COMBO plan.

In the COMBO plan, RD/SIIP and pension/SIWP are available in one. Let us visit the page and submit with default input parameters.

We can see that If one starts depositing at the age of 30 at the rate of 9651 pm in first year and top up the deposit at 6% inflation, reaching upto 52295 pm in 30 years upto age 59. From 60 years of age one can systematically withdraw 2.01 lakh pm with increased withdrawal of 6%, by 84th age, to withdraw 8.13 lakh rupees pm and also get a maturity amount of 20.66 crore by the age 85. One can reinvest this at the same rate and reap the benefits, generation after generation.

Let us see about agniveer deposit and benefits.

The scheme discussed earlier, in another program, let us click the agniveer entry age 20, pass out age 24 can accumulate a corpus of 6.03 crore rupees, and can withdraw 2.62 lakh per month at age 60, increased withdrawal of 6% every year, at age 84 the withdrawal would be 10.61 lakh per month, with a maturity amount at age 85 of rupees 26.94 crore.

The calculation with single premium invest of Rupees 11.70 lakh and the build up of corpus as well as withdrawals are shown in detail. One can try for other entrants from age 17 to 21 and corresponding pass out age of 21 to 27 by clicking appropriate links.

Now let us see something about INFLAPRO INSURANCE (advanced) link in home page of www.bnvenkat.com

For the sample input of entry age 30, we can see the links for inflation of 0%, 2%, 3%, 4% and so on to 10%

Let us click 0% inflaiton protection and see that the premium is constant for 30 years, 6% interest at Rs. 1.19 lakh. Click the audittable. There is no difference between Inflapro and the conventional ones as the death benefit is the same in both cases.

Let us click 6% inflation and corresponding audittable link, we can see that the 30th age premium is 58,037 and base Sum Assured(death benefit) is 18.46 lakh, increases exponentially by 6%, second year premium is 61519 and corresponding death benefit is 19.56 lakh.
At 30th year of policy the death benefit is 1 crore.

The idea is today's 18.45 lakh is equivalent to 1 crore after 30 years.

Similarly, one can view 10% inflation also and infer the difference.

There is a table of comparison in death benefits in INFLAPRO INSU and conventional insurance of endowment plans with respect to ratio of Death benefit to premium.

The INFLAPRO scheme would be better, that is more customer friendly.

Conventional one is approximation only and exact ratios can be worked out on actual figures only.

THERE ARE OTHER CALCULATORS IN THE WEB PAGE LIKE FINDING OUT IRR (internal rate of return), separate RD calculator etc. One can always explore the site, without any login or giving out any personal information such as mobile number or email id.

I HAVE DEVELOPED ALSO THE CALCULATORS IN GOOGLE SHEET FOR PENSION, RD, LOAN, FD.I NEED SOME HELP TO MAKE THESE SHEETS PUBLIC SO THAT ANYBODY WITH THE LINK CAN MAKE USE OF IT.

Diminishing Balance, EMI, INFLAPRO for TYPICAL VALUE term loan

| Year	Dim_BAL	EMI	INFLAPRO
1	15000 00	11745.96	5500.00
2	14500 00	11745.96	6050.00
3	14000 00	11745.96	6655.00
4	13500 00	11745.96	7320.50
5	13000 00	11745.96	8052.55
6	12500 00	11745.96	8857.81
7	12000 00	11745.96	9743.59
8	11500 00	11745.96	10717.95
9	11000 00	11745.96	11789.75
10	10500 00	11745.96	12968.73
11	10000 00	11745.96	14265.60
12	9500 00	11745.96	15692.16
13	9000 00	11745.96	17261.38
14	8500 00	11745.96	18987.52
15	8000 00	11745.96	20886.27
16	7500 00	11745.96	22974.90
17	7000 00	11745.96	25272.39
18	6500 00	11745.96	27799.63
19	6000 00	11745.96	30579.59
20	5500 00	11745.96	33637.55
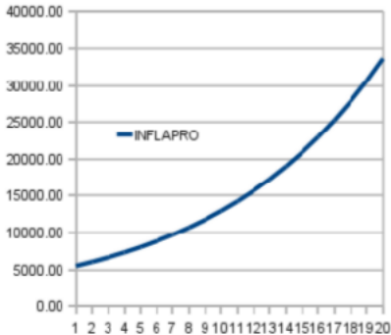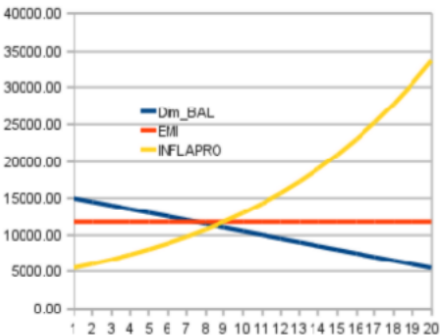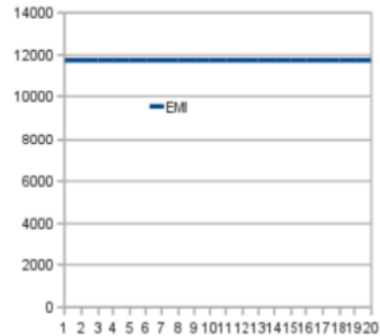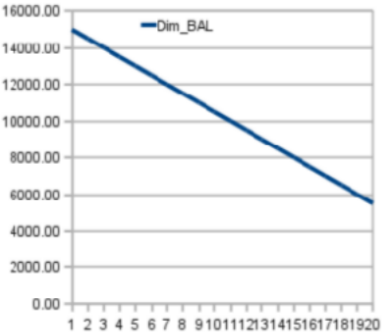
Customer gets various pension options depending on different inflation protection say from -10% through 0%(EMI) through 10%
Inflation/deflation at -10% is one extreme wherin the payout varies from 17340.49 to 2342.52 with an yield of 7.616% EMI(annual) being Rs.10000 Inflation/deflation at +10% is one extreme wherin the payout varies from 4682.45 to 28637.30 with an yield of 13.409%
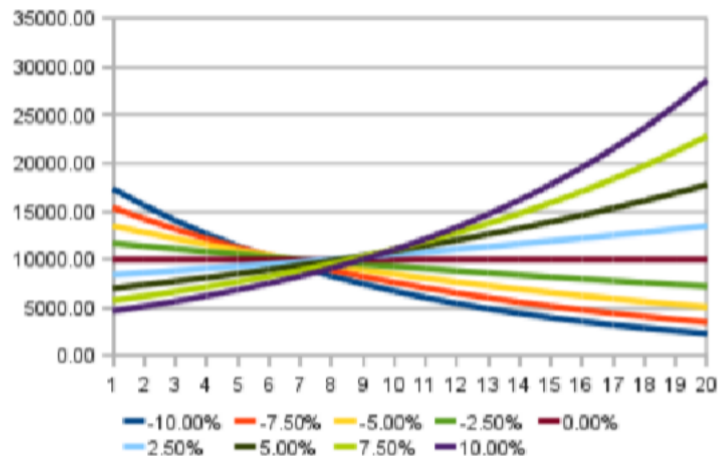
Customer gets various Recurring Deposit options depending on different inflation protection from -10% through 0%(EMI) through 10%
Inflation/deflation at -10% is one extreme wherin the RD varies from 2752.34 to 371.96 with an yield of 15.680% EMI(annual) being 1587.19 Inflation/deflation at +10% is one extreme wherin the RD varies from 743.22 to 4546.01 with an yield of 6.746%

-   +
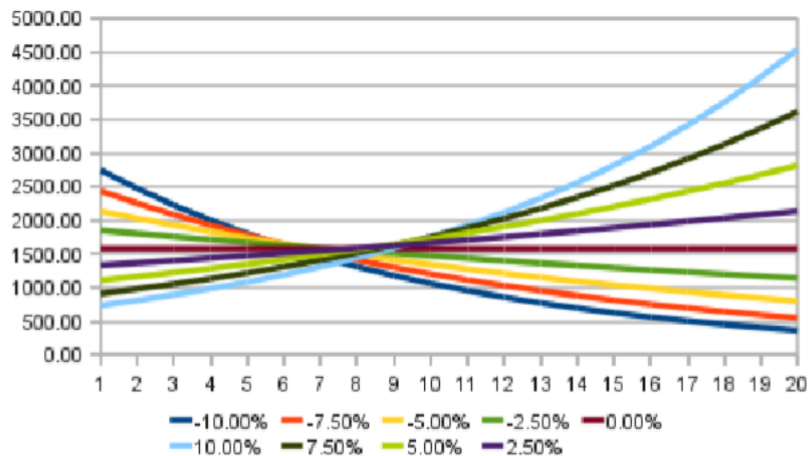
Benefits (Who will be benefited)

Investor

Benefit to Investor is by means of getting inflation protection. One gets in a sample case of 20 years pension scheme with 10% pa rate of interest and with 10% inflation protection the order of 6.7% return in first year and over 25% in twentieth year.

Investment Company

Investment company is benefited with increased holding amount, that is run balance of pricipal and unpaid interest amounts. For example in the case mentioned in previous paragraph, the investment company has accrual of Rs.154184.75 in 13th year which is more than 150% of the present method of Equal instalment.

Investment Company as a financier

Even if one assumes the investor is more benefited, the investment company becomes an investor when it comes to money lending/financing. It gets increased return of income from the amount financed.

Borrower

Borrower gets the convenience of low repayment as compared to Equated Monthly Instalment of the present day situation. Of course he sheds down more interest in later years for this convenience. It is essential to note that borrower's income/repayment capcity increases because of inflation. The situation is **very much identical to the situation changed from diminishing balance method to the present day EMI method**.

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ADENDUM

Also I will make a passing remark, where to invest to get 11% annualized return:

The following schemes have given more than 15% return in the past in long term over 5 years.

1. Hdfc mf balanced advantage fund (over 23 years)

2. Parag Parikh flexi cap fund

3. Canara Robeco small cap fund

4. Sundaram Services fund

5. Tata mf -large and mid cap fund

6. The above equivalents in Quant MF and Mirea asset MF

    1. Most of these above are maintaining No. 1 rank in their respective category and well ahead of category average

Adjustment	-1,59,33,892.26
Surr.Val	34,417,18,16,459.12CR
HASHTOT	23,958,53,89,350.84

HIGHLIGHTS SAMPLE OF COMBO SIIP and SIWP

Age:27 years, PPT=0 years, wait=33 years, retire= 60 years, pre-retire=33 years, post-ret=150 years, spouse-time=0 years, TOTALterm=183 years,

desc	Start Amt ₹ pm	Ending Amt ₹ pm	Total	₹ in crore
SIIP pm	11,71,000	0	11,71,000	0.12
CORPUS			4,34,37,432	4.34
Starting SIWP ₹1,91,699 pm is equivalent to current value of ₹ 28,024 pm				
SIWP pm	1,91,699	113,03,00,609	23,958,53,89,351.00	23,958.54
Further			0	0.00
Maturity			34,417,18,16,459	34,417.18
Gross			58,375,72,05,810	58,375.72
				Approx 1 lakh Crores
Taxation			6,713,02,07,501	Approx 7 thousand Crores
Net After Tax				Approx 1 lakh Crores

showtax calc
191699.09 43437432.28 5.29587% emiv 398176.46 growth: def792339.23%
princ/RD start % 43437432.28 32.349978%

HIGHLIGHTS SAMPLE OF COMBO SIIP and SIWP

Age:24 years, PPT=0 years, wait=36 years, retire= 60 years, pre-retire=36 years, post-ret=150 years, spouse-time=0 years, TOTALterm=186 years,

desc	Start Amt ₹ pm	Ending Amt ₹ pm	Total	₹ in crore
SIIP pm	11,71,000	0	11,71,000	0.12
CORPUS			6,03,29,321	6.03
Starting SIWP ₹2,66,247 pm is equivalent to current value of ₹ 32,679 pm				
SIWP pm	2,66,247	156,98,50,329	33,275,50,20,351.00	33,275.50
Further			0	0.00
Maturity			47,801,28,80,645	47,801.29
Gross			81,076,79,00,996	81,076.79
				Approx 1 lakh Crores
Taxation			9,323,64,37,449	Approx 9 thousand Crores
Net After Tax				Approx 1 lakh Crores

266246.77 60329321.4 5.295587% emiv 553018.78 growth: def7792339.23%
princ/RD start % 60329321.4 23.292157%

HIGHLIGHTS SAMPLE OF COMBO SIIP and SIWP

Age:21 years, PPT=0 years, wait=39 years, retire= 60 years, pre-retire=39 years, post-ret=150 years, spouse-time=0 years, TOTALterm=189 years,

desc	Start Amt ₹ pm	Ending Amt ₹ pm	Total	₹ in crore
SIIP pm	11,71,000	0	11,71,000	0.12
CORPUS			8,37,90,105	8.38
Starting SIWP ₹3,69,784 pm is equivalent to current value of ₹ 38,108 pm				
SIWP pm	3,69,784	218,03,31,699	46,215,63,63,379.00	46,215.64
Further			0	0.00
Maturity			66,390,18,74,437	66,390.19
Gross			1,12,605,82,37,816	1,12,605.82
			Approx 1 lakh Crores	
Taxation			12,949,48,26,179	Approx 13 thousand Crores
Net After Tax				Approx 1 lakh Crores

showtax calc

369784.45 83790105.21 5.29587% emiv 768075.96 growth: def792339.23%

princ/RD start % 83790105.21 16.770477%

CHANGE THE WORLD WITH INNOVATIVE CALCULATOR
FOR AGNIVEER

Description	Entry 23 years Passout 27 years	Entry 20 years Passout 24 years	Entry 17 years Passout 21 years
Investment (passive period)	**11.71 lakh (33 years)**	**11.71 lakh (36 years)**	**11.71 lakh (39 years)**
Retired life years/term in years **(1+5 generations)**	60 to 85 to 210 (150 years)	60 to 85 to 210 (150 years)	60 to 85 to 210 (150 years)
Starting pension pm	1.92 lakh pm	2.66 lakh pm	3.69 lakh pm
Ending pension	**113 crore pm**	**156 crore pm**	**218 crore pm**
Total **Annuity** for 1+5 generations	**24000 crore**	**33000 crore**	**46000 crore**
Maturity on agniveer birthday @ 210 years	**34000 crore**	**48000 crore**	**66000 crore**
Total Tax @ current rale	7000 crore	9000 crore	13000 crore