Personal Finance 101

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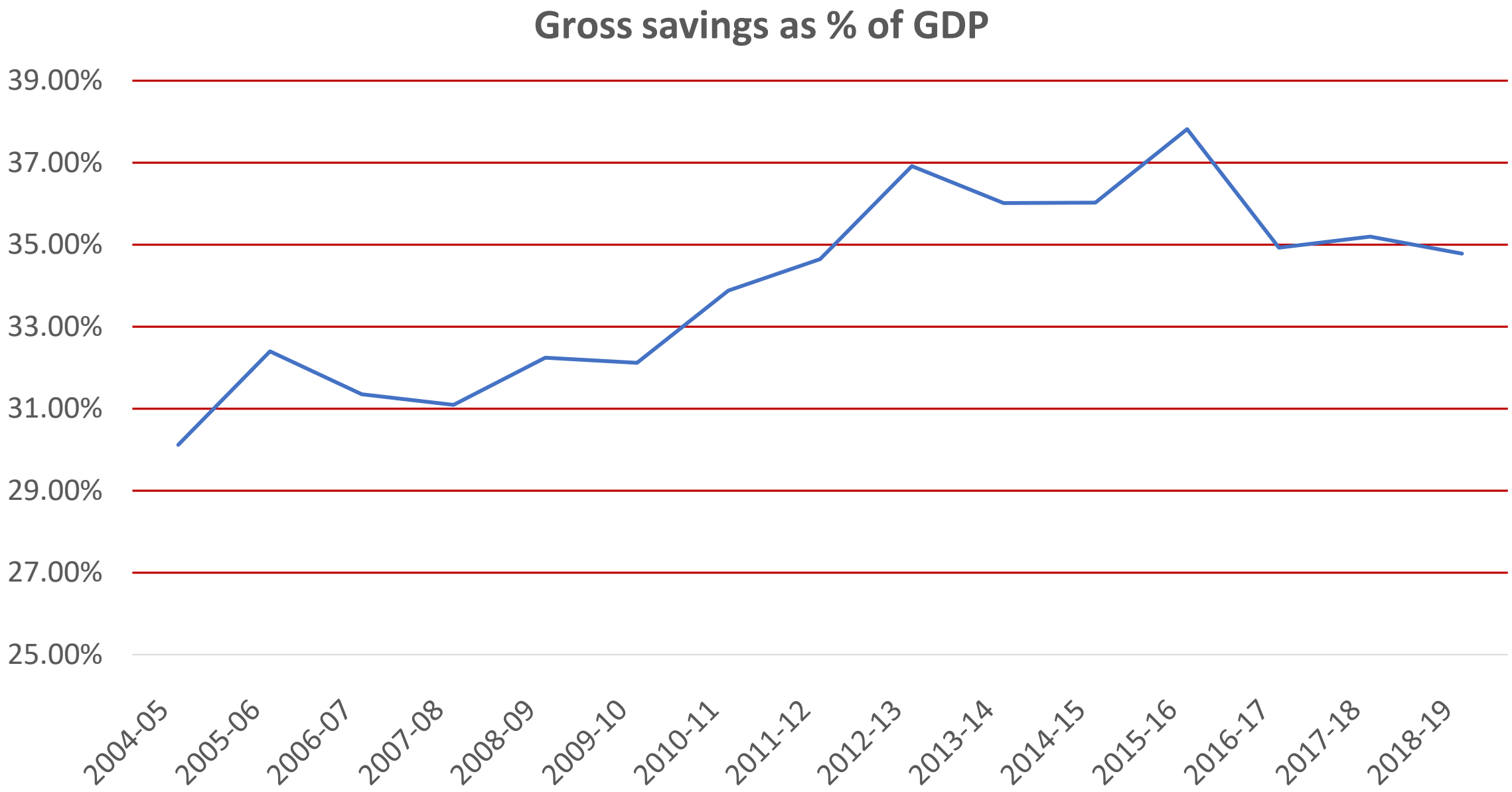
Telangana


Gross savings as % of GDP
39.00%
37.00%
35.00%
33.00%
31.00%
29.00%
27.00%
25.00%
2004-05
2005-06
2006-07
2007-08
2008-09
2009-10
2010-11
2011-12
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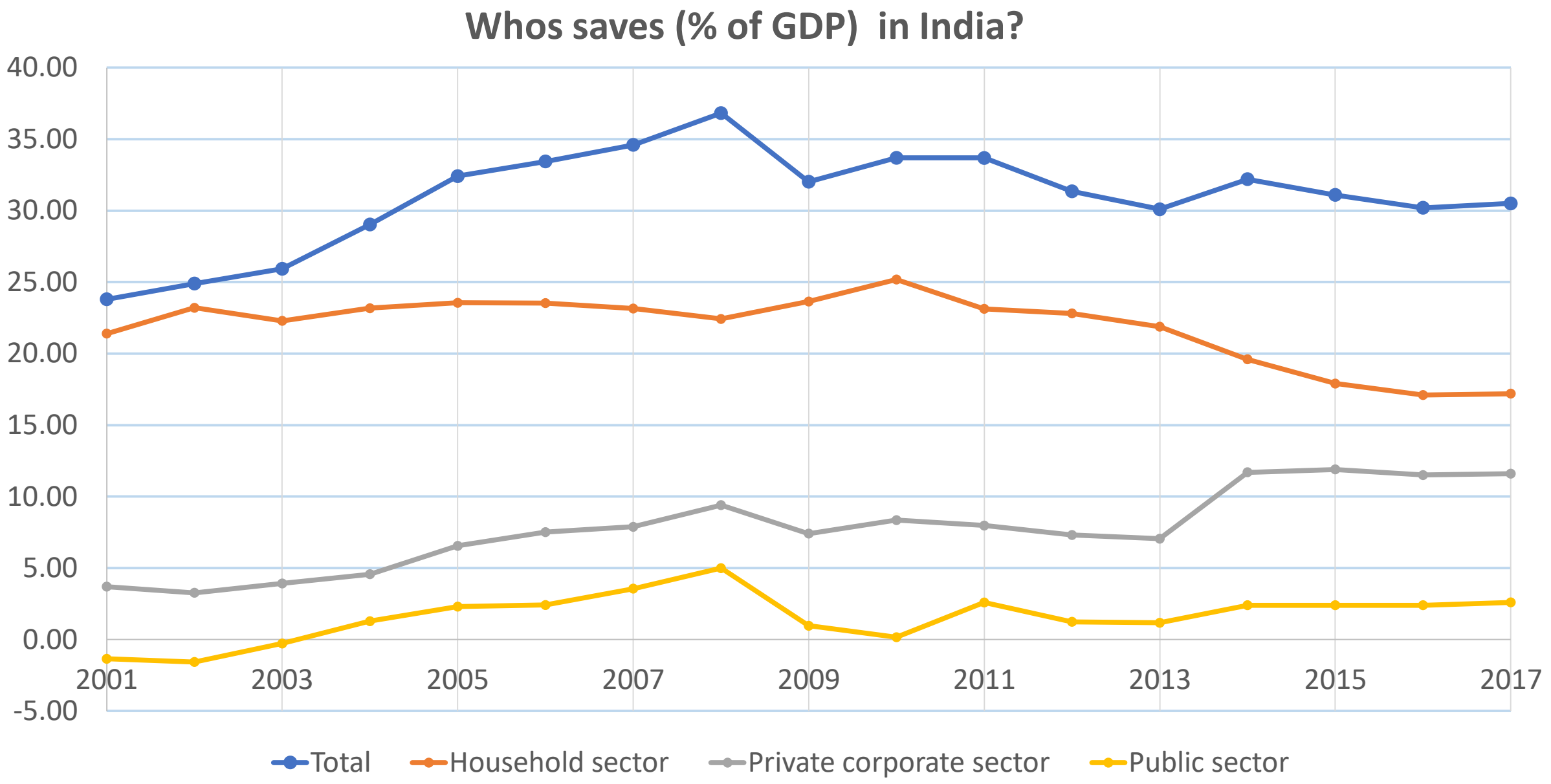
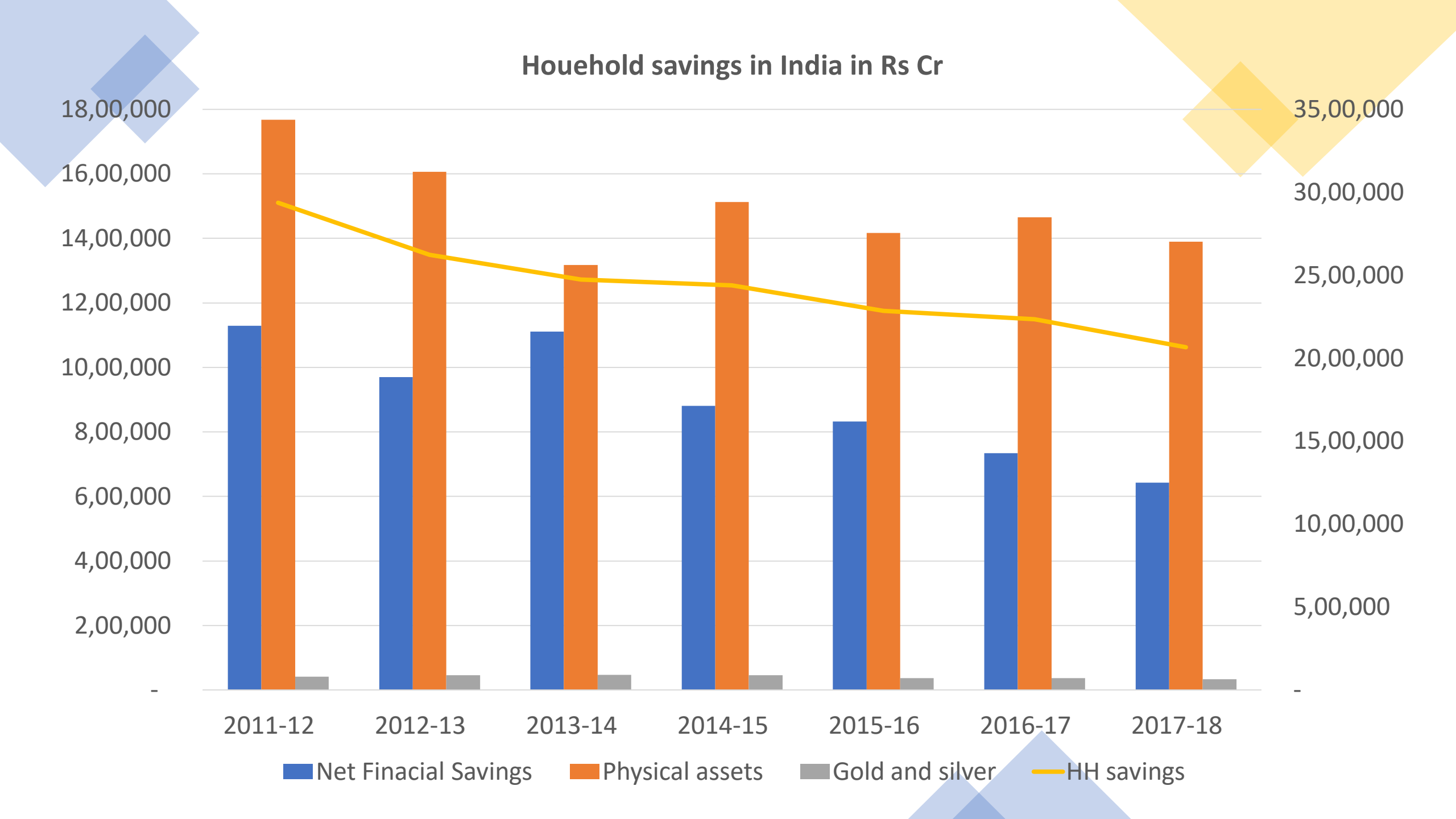
2013-14
2014-15
2015-16
2016-17
2017-18
2018-19


Whos saves (% of GDP) in India?
40.00
35.00
30.00
25.00
20.00
15.00
10.00
5.00
0.00
-5.00
2001
2003
2005
2007
2009
2011
2013
2015
2017
Total
Household sector
Private corporate sector
Public sector

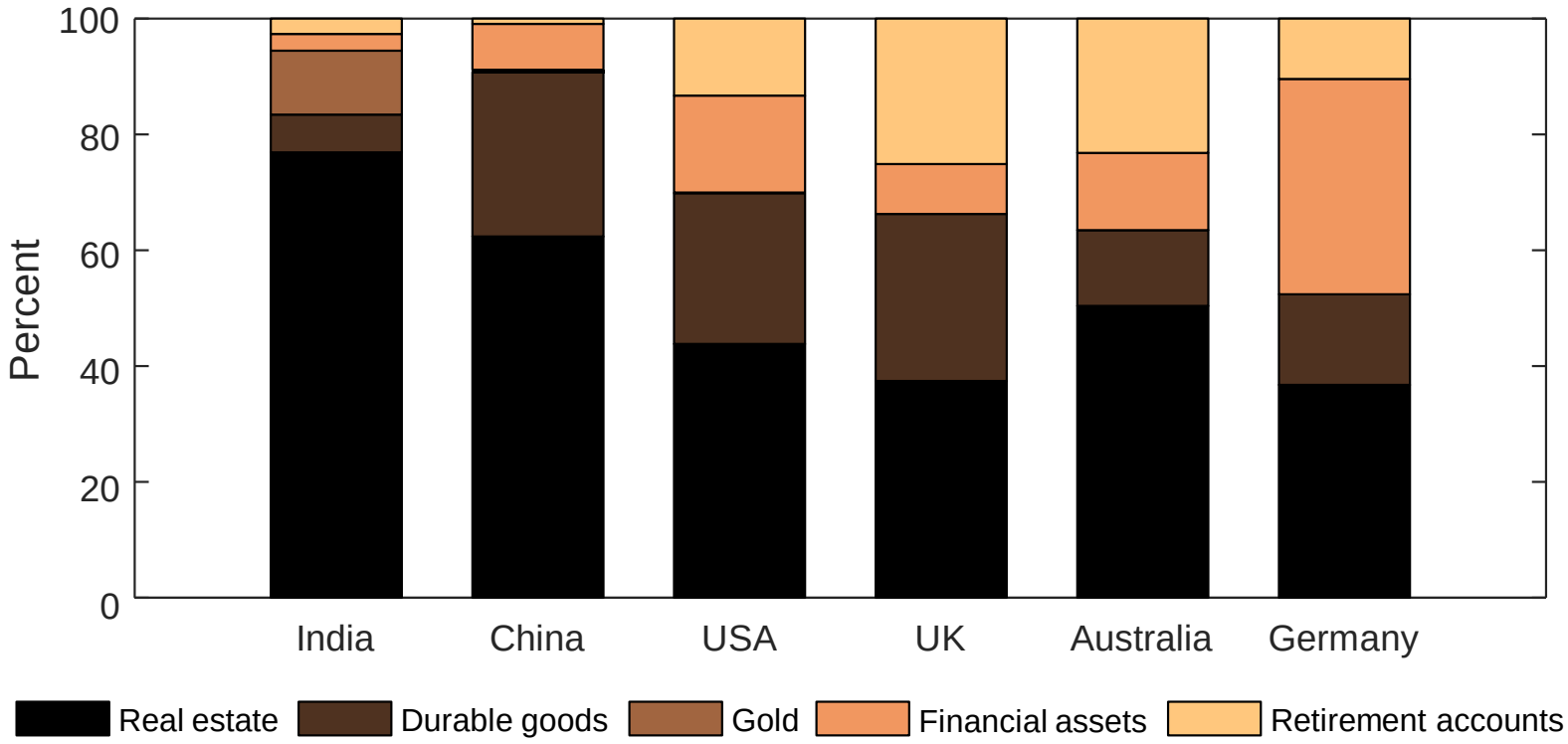

Household savings in India in Rs Cr
18,00,000
16,00,000
14,00,000
12,00,000
10,00,000
8,00,000
6,00,000
4,00,000
2,00,000
-
35,00,000
30,00,000
25,00,000
20,00,000
15,00,000
10,00,000
5,00,000
-
2011-12
2012-13
2013-14
2014-15
2015-16
2016-17
2017-18
Net Finacial Savings
Physical assets
Gold and silver
HH savings

Indian Household Financial Decisions – Tarun Ramadorai

- Four broad features visible in the All-India Debt and Investment Survey, 2012:
- High allocation to non-financial assets (gold and real estate).
- High levels of non-institutional-source borrowing.
- Near complete lack of pensions.
- Low levels of insurance penetration (life and non-life).

Allocation of household wealth

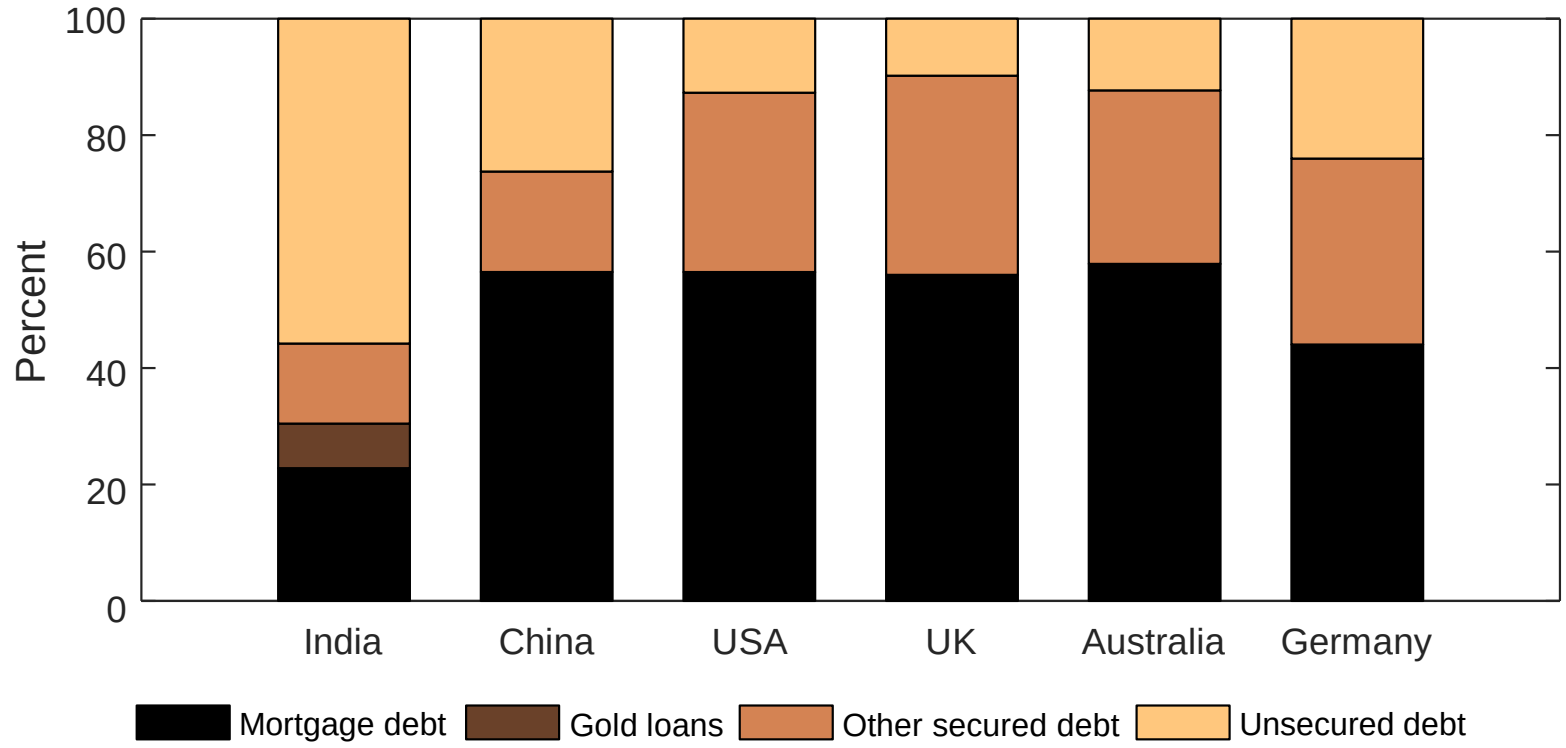
Equal-weighted average



- The average Indian household holds 77% of total assets in real estate, 11% in gold, 5% in financial assets, 7% in durable goods (vehicles, livestock, agriculture machinery etc.) and hardly any retirement assets/pensions.

Allocation of household liabilities

Equal-weighted average



- Mortgages are households' largest liability in China, the US, the UK, and Australia, but account for a small part of total liabilities (23%) of Indian households. Most debt is unsecured (55%).

Saving and investments options

- Banks
  - Savings Bank Account, Fixed Deposit and Recurring Deposit
  - **Tax implications :** The interest that you receive from a savings account is taxable under the head “Income from other sources”.
  - Further, Section 80TTA provides for a deduction up to Rs 10,000 on such interest income and therefore, interest earned beyond Rs 10,000 only is taxable.
- Post office Schemes
  - Recurring Deposit, Time Deposit, and Monthly Income Scheme
- Small Savings Scheme
  - Public Provident Fund, Sukanya Samriddhi Yojana, Senior Citizen’s saving scheme , National Savings Certificate, Kisan Vikas Patra, PM Vaya Vandana yojana
- Insurance
  - Health and other insurance
  - Life Insurance

Saving and investments options

- Pension
  - Pension and annuity
  - National Pension System
  - Atal Pension Yojana
- Other Investments
  - Stocks and Equity
  - Mutual Funds
  - Company deposits
  - Capital Gains tax exemption bonds
  - Sovereign gold scheme
- Real estate
- Gold

Saving and investing without some amount of planning and projections can be quite useless

- Many people wrongly see real estate as a sound investment option
- Reliance on fixed income alone will not lead to accumulation of sufficient wealth when you need it
- For wealth creation, the best asset class is equity

Stocks and Equity

- A stock is a share in the ownership of a business
- Investment objectives
  a) Capital gains – buy low sell high and pocket the difference
  b) Dividends – part of the company profit distributed by the company
- Stocks have the highest risk and highest potential returns – risk and reward go together in Finance
- Stocks are suitable for investors who have time horizon of five years are more to accumulate wealth
- Stocks are not for less time horizon – day traders etc., and those who lack the skill, time, inclination to research the stocks on a regular basis
- Option – Equity Mutual Funds

Stocks and Equity

- Stocks or mutual funds ?
  - Investing in mutual funds is a better way of getting gains of stock investing with lower risk and less hard work as professional managers do the investment for you
  - Mutual funds however carry fees and certain limitations depending on the fund
  - Sophisticated investors may not like passive investing in mutual funds
- Invest or trade?
  - Investment is the art of identifying fundamentally sound companies and investing in them for long term i.e., fundamentalists
  - Trading is the art of identifying trends in stock prices and trading in them for short periods in the hope of large and quick profit i.e., chartists

Stocks and Equity

- There are no guaranteed returns on stock investments
- Stocks are liquid investments – they can be sold at any time during the trading hours and money is realised within three days
- All trading is done through a stockbroker who is a member of stock exchange
- Bombay Stock Exchange (BSE) https://www.bseindia.com/
- National Stock Exchange (NSE) https://www.nseindia.com/
- Basic prerequisite to trade is to have a DEMAT account – just like a bank account it holds stocks instead of cash – two depositories are there – NSDL and CDSL – stock broker will help open an account based on KYC norms

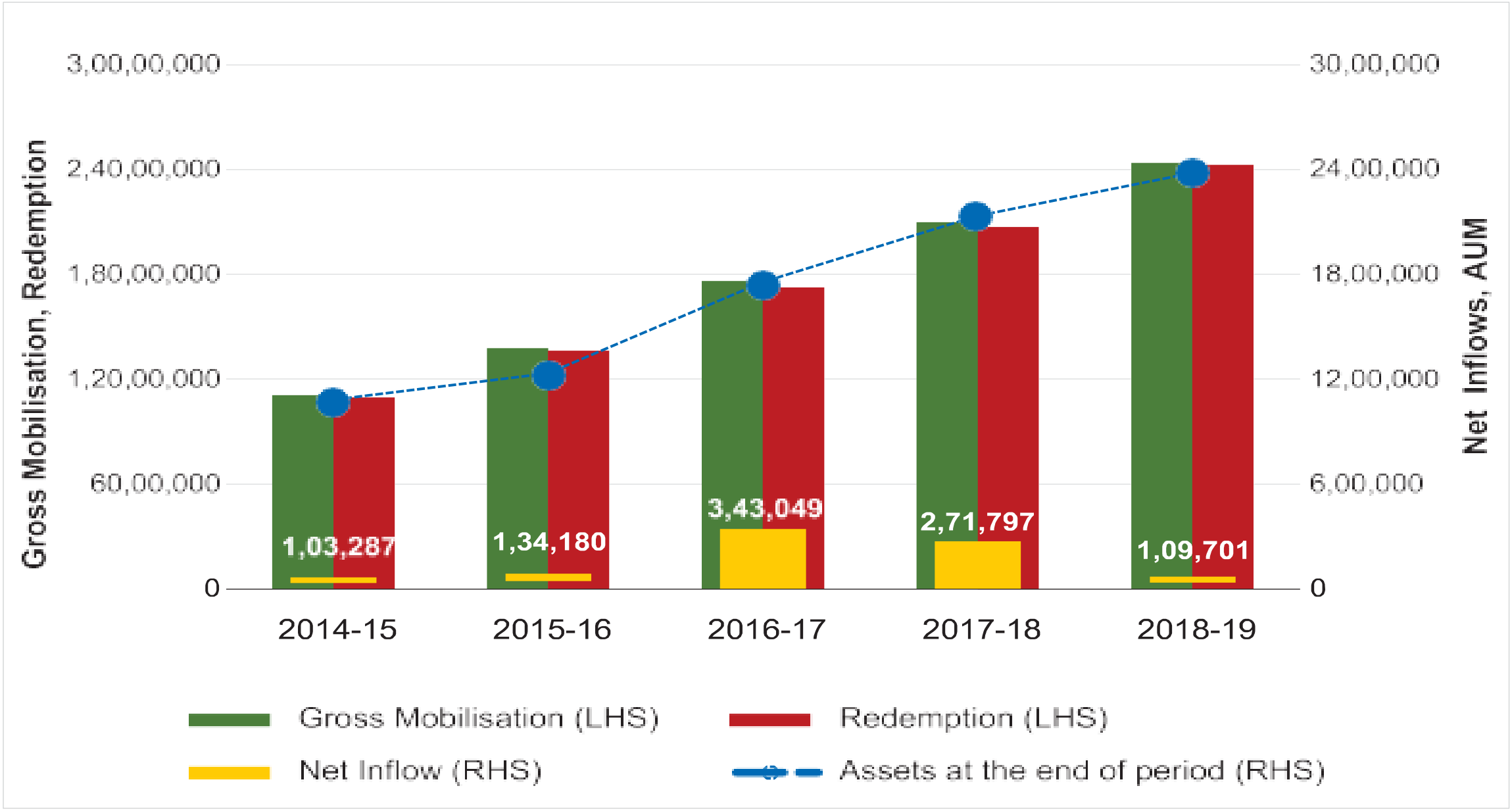
Stocks and Equity

- Dividends up to Rs 10 lakhs per year are not taxable in the hands of the investor; however they are liable to pay 10% dividend distribution tax (DDT) by the company
- Dividends above Rs 10 lakhs are taxable at the rate of 10%
- Post deletion of DDT, dividend income will be taxed in the hands of all shareholders at applicable tax rates.
- Capital gains are taxable at 15% is the stock is sold within one year and there is a 10% tax on gains exceeding one lakh for stocks sold after an year
- There is a 0.1% Security Transaction Tax (STT) on the stock either on sale or purchase

Mutual Funds

- Mutual funds combine savings of large pool of investors and manage them as a single pool of money
- Professional fund managers decide where to invest the money
- The assets are run by AMC – Asset Management Company
- Each AMC makes an offer of multiple schemes to cater to different type of investment requirements
- They are highly liquid and withdrawals are easy and take very little time

Mobilisation of resources by Mutual Fund Industry in India – SEBI Annual Report



Mobilisation of resources by Mutual Fund Industry in India – SEBI Annual Report

Year	Open-ended	Close-ended	Interval	Total	Grand Total
Mobilization of Funds					
2017-18	2,09,22,378	73,963	2,309	2,09,98,652	2,09,98,652
2018-19	2,43,13,936	76,378	4,048	2,43,94,363	2,43,94,362
Repurchases / Redemption					
2017-18	2,06,52,260	71,872	2,722	2,07,26,855	2,07,26,855
2018-19	2,42,12,669	65,711	6,282	2,42,84,661	2,42,84,661
Net Inflow / Outflow of Funds					
2017-18	2,70,118	2,091	-412	2,71,797	2,71,797
2018-19	1,01,267	10,667	-2,234	1,09,701	1,09,701

SEBI Classification 38 types of funds

- to match the investor's risk takin ability with returns
- Create a risk and return continuum

Equity Funds-11	Predominantly into equity – further classified into 11 categories depending on the size, style of investing, tax saving
Debt Funds -16	Predominantly into debt – further classified into 16 categories depending on the tenor , style of investing
Hybrid Funds -7	Mix of debt and equity funds
Solution Oriented -2	Schemes which are aimed at a specific financial goal such as retirement and children's education
Others -2	The outliers from above - index funds and fund of funds

Schemes	No. of Schemes	Gross Funds Mobilised (` crore)	Repurchase/ Redemption (` crore)	Net Inflow/ Outflow of Funds	AUM as on March 31, 2019 (crore)	% of total AUM
A. Income/ Debt Oriented Schemes						
i) Liquid/Money Market	65	2,33,86,284	2,33,10,191	76,093	4,36,224	18.3%
ii) Gilt	27	2,106	5,547	-3,441	8,099	0.3%
iii) Debt (other than assured returns)	1,252	5,49,508	6,70,633	-1,21,124	7,18,919	30.2%
iv) Infrastructure Development	10	153	0	153	2,650	0.1%
Subtotal (i-iv)	1,354	2,39,38,051	2,39,86,371	-48,320	11,65,891	49.0%
B**. Growth/ Equity Oriented Schemes**						
i) ELSS	69	20,382	7,611	12,771	96,019	4.0%
ii) Others	485	2,83,424	1,88,224	95,200	7,96,082	33.5%
Subtotal (i+ii)	554	3,03,805	1,95,835	1,07,970	8,92,101	37.5%
C. Balanced Schemes	27	51,621	44,756	6,864	1,80,648	7.6%
D**. Exchange Traded Funds**						
i) Gold ETFs	12	128	539	-411	4,447	0.2%
ii) Other ETFs	66	1,00,158	56,807	43,351	1,34,626	5.7%
Subtotal (i+ii)	78	1,00,286	57,346	42,940	1,39,072	5.8%
E. Fund of Funds Investing Overseas	29	600	353	246	1,871	0.1%
TOTAL (A+B+C+D+E)	2,042	2,43,94,362	2,42,84,661	1,09,701	23,79,584	100.0%

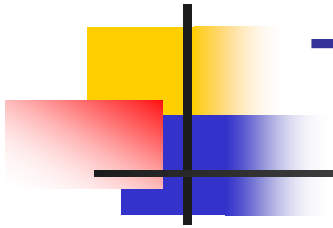
cleartax

How is your mutual fund return taxed?

In mutual funds, your returns will be taxed as below

Holding Period / Types of funds	Less than 1 year	1-3 years	More than 3 years
Equity / Hybrid	15% tax applicable	10% tax applicable if gains are more than 1 lakhs	10% tax applicable if gains are more than 1 lakhs
Debt	Taxed as per income tax slab	Taxed as per income tax slab	20% tax applicable with benefit of indexation

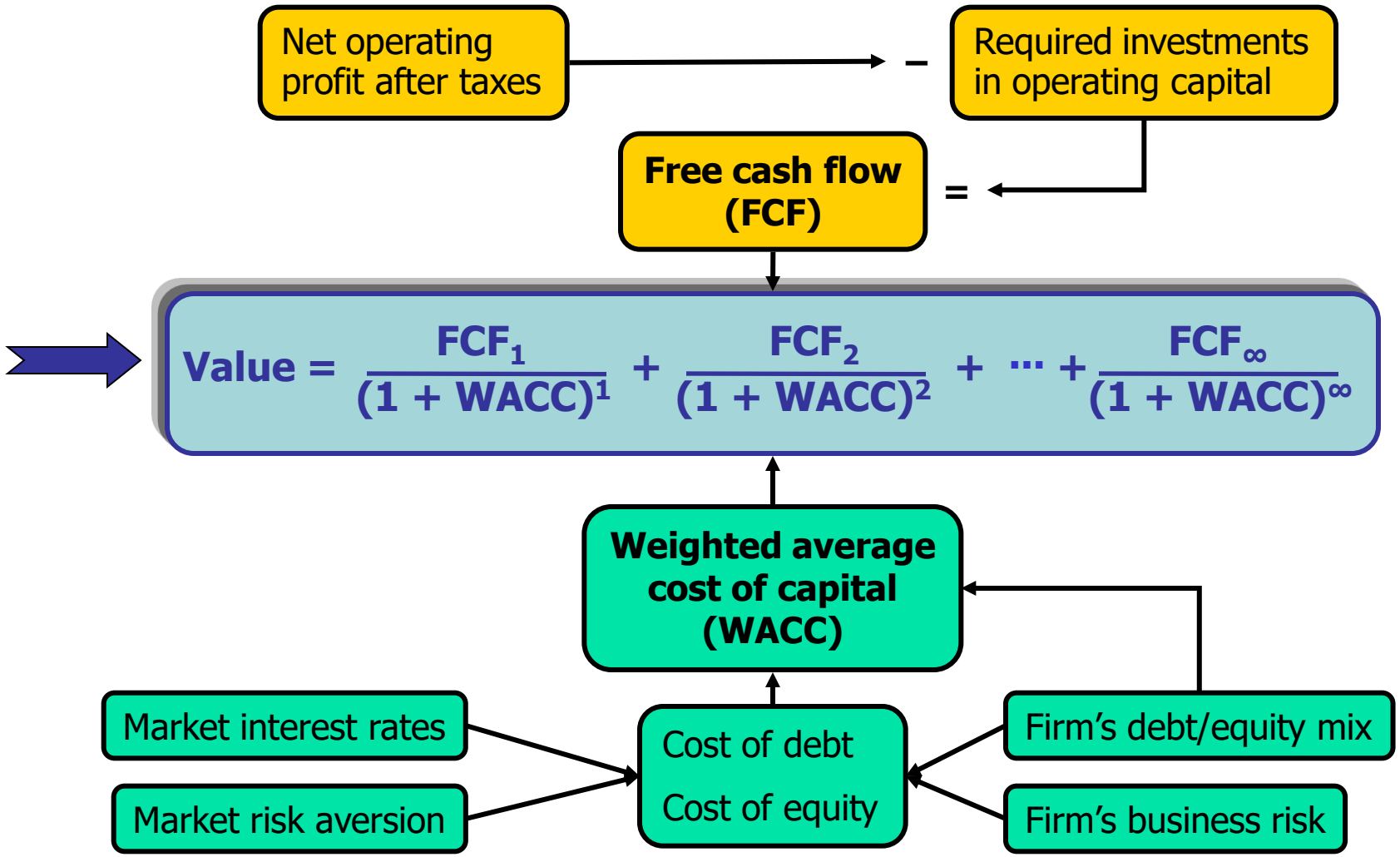
SIP - Each installment is considered as an individual investment. Tax will be applicable as per the above table.



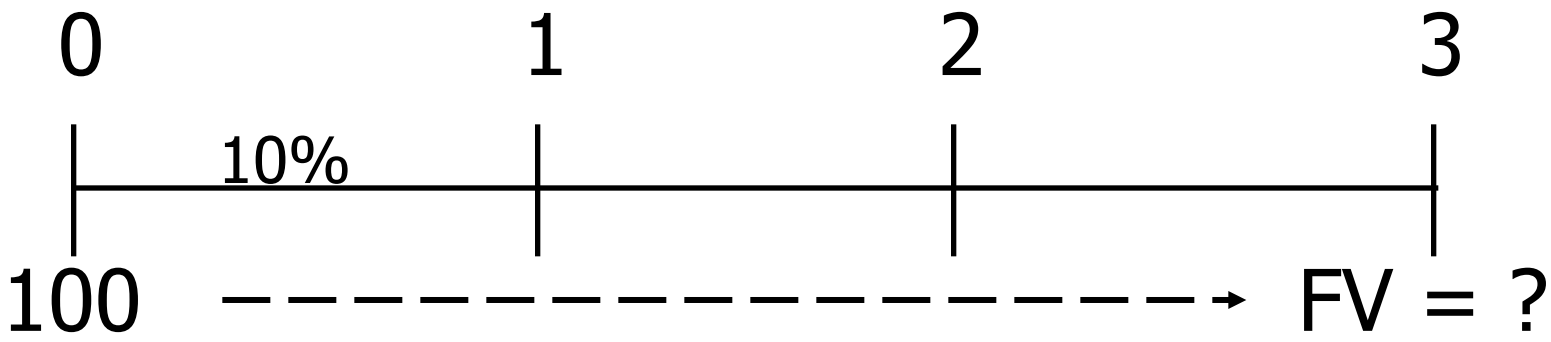
Time Value Topics

- Future value
- Present value
- Rates of return
- Amortization

Determinants of Intrinsic Value: The Present Value Equation



FV of an initial $100 after 3 years (I = 10%)



Finding FVs (moving to the right on a time line) is called compounding.

After 3 years

$$FV_3 = FV_2(1+I) = PV(1+I)^2(1+I)$$
$$= PV(1+I)^3$$
$$= \$100(1.10)^3$$
$$= \$133.10$$

In general,

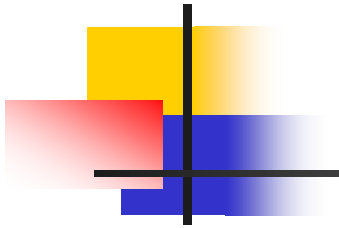
$$FV_N = PV(1+I)^N$$

Spreadsheet Solution

- Use FV function: see spreadsheet
- RETIREMENT_CORPUS_CALCULATOR.xls

- = FV(I, N, PMT, PV)
- = FV(0.10, 3, 0, -100) = 133.10

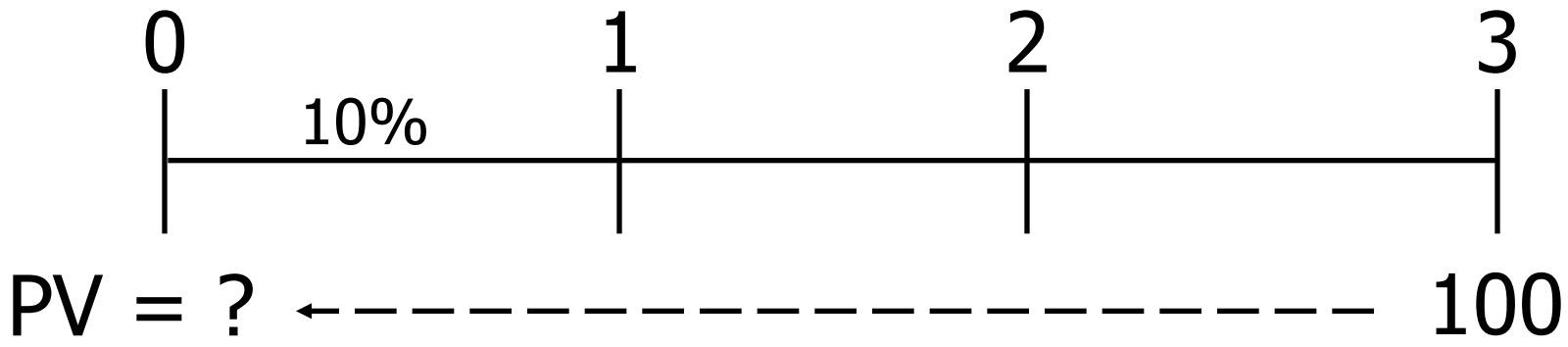
Discounting $$



- Money needed today to accumulate x$ value in future
- Solve for Present Value (PV)
- Mathematical process (divide)

What's the PV of $100 due in 3 years if I/YR = 10%?

Finding PVs is discounting, and it's the reverse of compounding.



Spreadsheet Solution

- Use PV function: see spreadsheet

- RETIREMENT_CORPUS_CALCULATOR.xlsx
- = PV(I, N, PMT, FV)

- = PV(0.10, 3, 0, 100) = -75.13

Spreadsheet Solution

- Use NPER function:
- = NPER(I, PMT, PV, FV)
- = NPER(0.10, 0, -1, 2) = 3.8

Case Study

a. Current Age	30
b. Retirement age	60
C. Life expectancy	85
Current annual income	6,00,000
Expected growth in income p.a	10.00%
Current annual expenses	3,60,000
Retirement Expenses will be	80%
Savings till date	0.00
Return on investment p.a. during accumulation of corpus	12.00%
Return on investment p.a. during distribution of corpus	9.00%
Inflation p.a.	6%

KEY POINTS IN NEED ANAYLSIS – EXPENSES REPLCEMENT METHOD

a. Current Age	30
b. Retirement age	60
c. No. of years left for retirement (b-a)	30
d. Life expectancy	85
e. Years after retirement (d-b)	25
Current annual expense	3,60,000
Expected growth in expense	6%
Annual expense at retirement age per annum	20,67,657
Expenses required after retirement	80%
Required annual expenses at retirement per annum	16,54,125

How to arrive at future expenses by projecting current expenses? Time value of money

RETIREMENT_CORPUS_CALCULATOR.xlsx

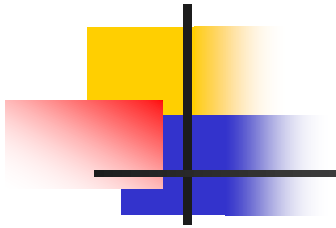
SUMMARY OF RESULTS	
d. Life expectancy	85
e. Years after retirement (d-b)	25
Current annual expense	3,60,000
Expected growth in expense	6%
Annual expense at retirement age	20,67,657
Expenses required after retirement	80%
Required annual expenses at retirement	16,54,125
Rate of return on accumulation of retirement corpus	12.00%
Rate of return on distribution of retirement corpus	9.00%
Inflation rate	6%
Inflation adjusted rate of return	2.83%
Savings Corpus as on date	0.00
Retirement Corpus	3,01,87,036
Monthly savings required to reach corpus	8,552
Annual savings required to reach corpus	1,25,085

ACUMULATION PHASE			
ASSET	ALLOCATION	RETURN	
EQUITY	60%	15%	9.00%
DEBT	40%	8%	3.20%
PORTFOLIO RETURN WACC			12.20%

DISTRIBUTION PHASE			
ASSET	ALLOCATION	RETURN	
EQUITY	25%	15%	3.75%
DEBT	75%	8%	6.00%
PORTFOLIO RETURN WACC			9.75%

So lets do some mutual fund hunting

- https://www.valueresearchonline.com/



Q & A

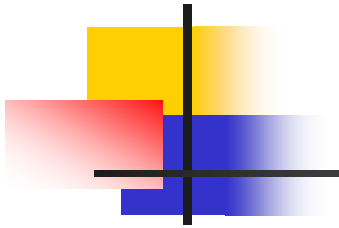
Equity Funds -11 types of SEBI Classification

Large Cap Fund	Minimum investment in equity & equity related instruments of large cap companies- 80% of total assets
Mid Cap Fund	Minimum investment in equity & equity related instruments of mid cap companies- 65% of total assets
Small cap Fund	Minimum investment in equity & equity related instruments of small cap companies- 65% of total assets
Dividend Yield Fund	Scheme should predominantly invest in dividend yielding stocks. Minimum investment in equity- 65% of total assets
Value Fund*	Scheme should follow a value investment strategy. Minimum investment in equity & equity related instruments - 65% of total assets
ELSS – Equity Linked savings scheme	Minimum investment in equity & equity related instruments - 80% of total assets. An open ended equity linked saving scheme with a statutory lock in of 3 years and tax benefit

Debt Funds -16 types of SEBI Classification

Category	Scheme Characteristics
Overnight Fund	Investment in overnight securities having maturity of 1 day
Liquid Fund	Investment in Debt and money market securities with maturity of upto 91 days only
Ultra Short Duration Fund	Investment in Debt & Money Market instruments such that the Macaulay duration of the portfolio is between 3 months - 6 months
Low Duration Fund	Investment in Debt & Money Market instruments such that the Macaulay duration of the portfolio is between 6 months- 12 months
Money Market Fund	Investment in Money Market instruments having maturity upto 1 year
Short Duration Fund	Investment in Debt & Money Market instruments such that the Macaulay duration of the portfolio is between 1 year - 3 years
Medium Duration Fund	Investment in Debt & Money Market instruments such that the Macaulay duration of the portfolio is between 3 years - 4 years
Medium to Long Duration Fund	Investment in Debt & Money Market instruments such that the Macaulay duration of the portfolio is between 4 - 7 years

Time Value Basic Concepts

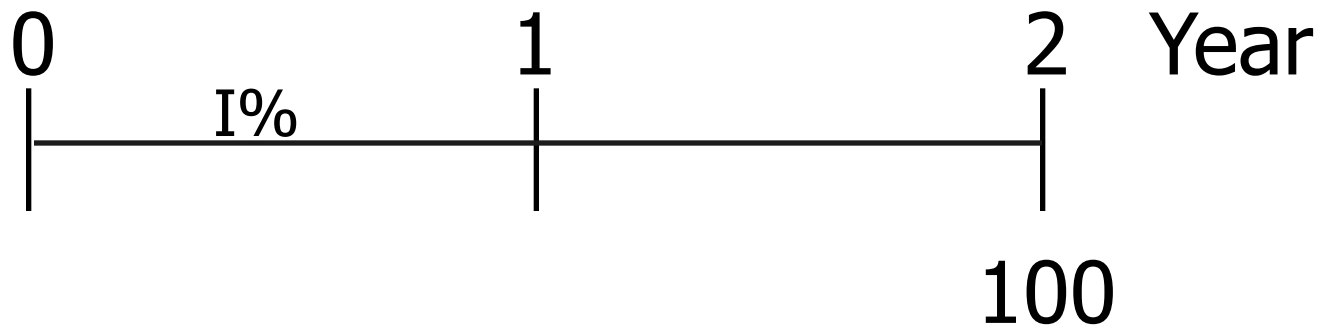


- Time lines
- Future value / Present value of lump sum
- FV / PV of annuity
- Perpetuities
- Uneven CF stream
- Compounding periods
- Nominal / Effective / Periodic rates
- Amortization

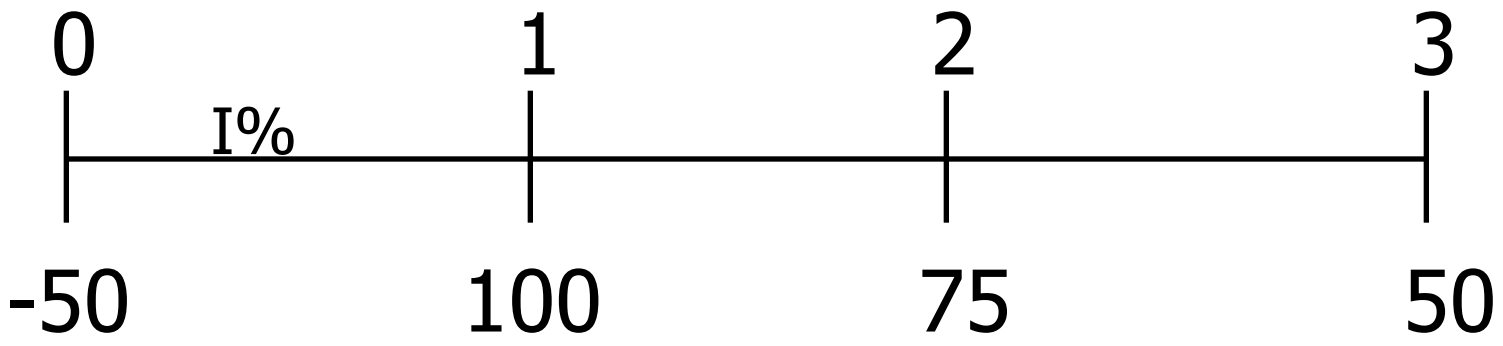
Time lines show timing of cash flows.

Tick marks at ends of periods, so Time 0 is today; Time 1 is the end of Period 1; or the beginning of Period 2.

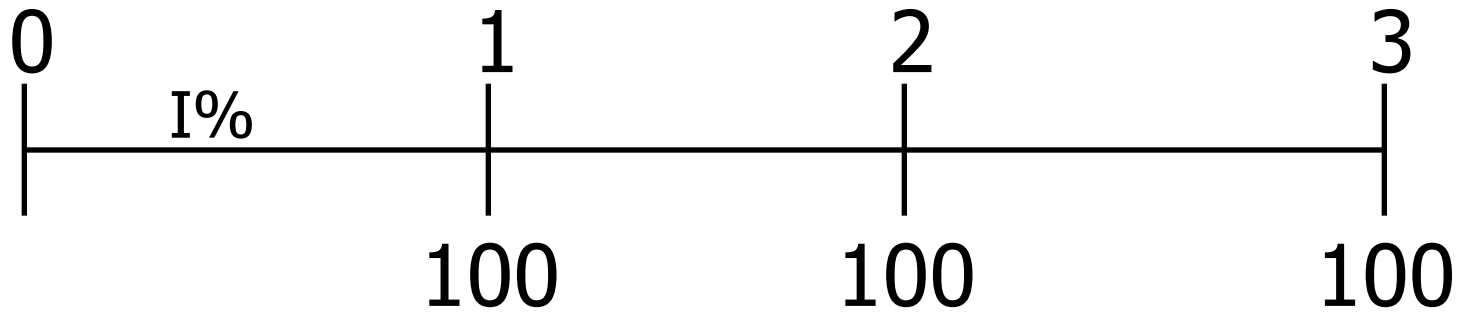
Time line for a $100 lump sum due at the end of Year 2.



Time line for uneven CFs



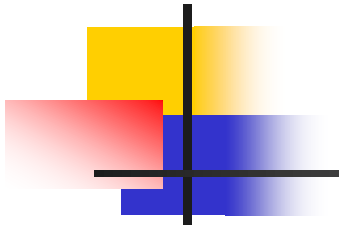
Time line for an ordinary annuity of $100 for 3 years



After 4 years

- PV = $100
- N = 4
- i = 10%
- FV = ? = $146.41

Compounding $$



- Growing Money to accumulate value in future
- Solve for Future Value (FV)
- Mathematical process (multiply)

After 1 year

$$
\begin{aligned}
FV_1 &= PV + INT_1 = PV + PV\,(I) \\
&= PV(1 + I) \\
&= \$100(1.10) \\
&= \$110.00
\end{aligned}
$$

After 2 years

$$
\begin{aligned}
FV_2 &= FV_1(1+I) = PV(1 + I)(1+I) \\
&= PV(1+I)^2 \\
&= \$100(1.10)^2 \\
&= \$121.00
\end{aligned}
$$

After 4 years, but different compounding per year

Semi-annual

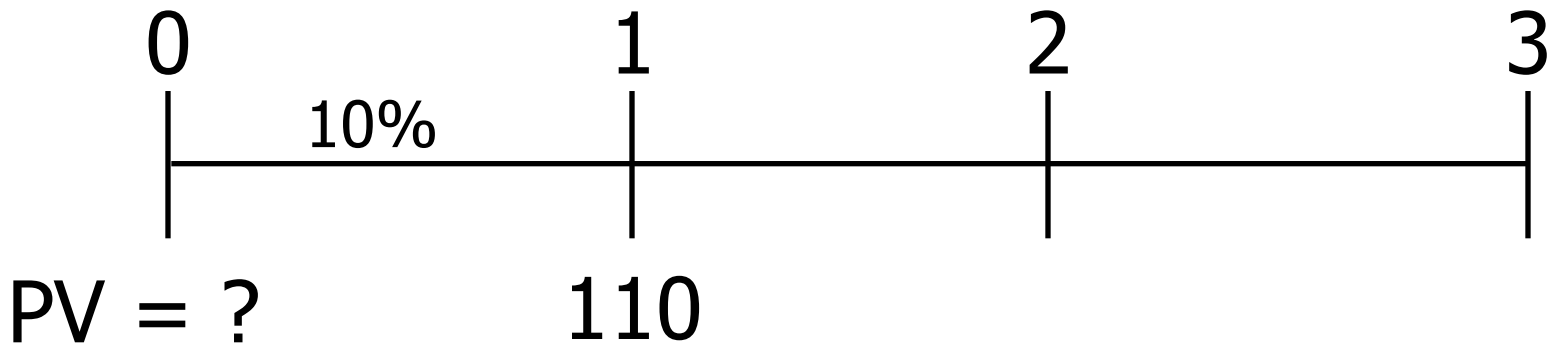
- PV = $100
- N = 4 yrs x 2 = 8 periods
- i = 10% / 2 = 5% per period
- FV = ? =

Quarterly

- PV = $100
- N = 4 yrs x 4 = 16 periods
- i = 10% / 4 = 2.5% per period
- FV = ? =

What's the PV of $110 due in 1 year if I/YR = 10%?

Finding PVs is discounting, it's reverse of compounding.



Solve $FV_N = PV(1 + I)^N$ for PV

$$PV = \frac{FV_N}{(1+I)^N} = FV_N \left[\frac{1}{1+I}\right]^N$$

$$PV = \left[\frac{110}{1.10}\right]^1$$

PV= $110

What's the PV of $110 due in 1 year if I/YR = 10%?

Annual Compounding

- FV = $110
- N = 1 yr
- i = 10%
- PV = ? =

Semi-annually

- FV = $110
- N = 1 yr x 2 = 2 periods
- i = 10% / 2 = 5.0% per period
- FV = ? =

Solve $FV_N = PV(1 + I)^N$ for PV

$$PV = \frac{FV_N}{(1+I)^N} = FV_N \left[\frac{1}{1+I}\right]^N$$

$$PV = \$100\left[\frac{1}{1.10}\right]^3$$

$$= \$100(0.7513) = \$75.13$$

Cash Flow signs

Investing $ today

- Outlay (invest) $ today in present to earn greater return in the future.
- Earn interest (revenue), plus principal
- PV = <->
- FV = +

Borrowing $ today

- Take in (borrow) $ today in present to use now, then repay with interest in the future.
- Pay interest (expense), plus principal
- PV = +
- FV = <->

Time to Double (Continued)

$$\$2 = \$1(1 + 0.20)^N$$
$$(1.2)^N = \$2/\$1 = 2$$
$$N \; LN(1.2) = LN(2)$$
$$N = LN(2)/LN(1.2)$$
$$N = 0.693/0.182 = 3.8$$

Step 2: Find interest charge for Year 1.

$$INT_t = \text{Beg bal}_t\,(I)$$

$$INT_1 = \$1{,}000(0.10) = \$100$$

Step 3: Find repayment of principal in Year 1.

Repmt = PMT - INT
= $402.11 - $100
= $302.11

Step 4: Find ending balance after Year 1.

End bal = Beg bal - Repmt
= $1,000 - $302.11 = $697.89

Repeat these steps for Years 2 and 3 to complete the amortization table.