Lifecycle Fund: A Default Option for New Pension System

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1. Introduction

India embarked on the path of pension reform in January 2004 with the introduction of an individual account defined contribution pension system for new recruits to Central Government. It has been envisaged that this scheme will be opened for the unorganized sector (those who are not covered by any social security at the time of retirement) when the constituents (i.e. Pension Fund Managers, Central Record keeping Agency and Point of Presence) of this new pension system would be in place. The pension system will have competing fund managers each offering three schemes with different investment guidelines. For example, Scheme A is likely to have a greater proportion of government securities and corporate bonds, Scheme B is likely to be a mix of debt and equity whereas Scheme C is likely to contain a higher proportion of equities.

Every employee will have an individual account and will choose amongst these competing pension funds and schemes for his investments. For many participants of this system, such a choice in investing is a novelty. Many people in India do not exhibit sophistication in their financial decisions. According to a survey done by Invest India Economic Foundation[1] on financial literacy-2002 in India, 60% respondents did not know the current value of their portfolios while around 40% had never calculated the full value of their portfolios. Of the respondents who had calculated the value of their portfolios in the past, 28% calculated the value on an annual basis while a quarter did this on a monthly basis.

This is not too different from international experience either where the experience has been similar. To avoid complex decisions for customers, the pension system in India will offer a default option i.e. that scheme or a fund manager to whom the contributions of an investor will flow, if he is unable to exercise a choice himself. Such systems of default options have been tried in other countries such as Mexico/Sweden where it was found that many of the members chose to invest in the default option. The experience in India is not likely to be any different. In such a situation, the design of the default option assumes importance as a poorly designed default will lead to small accumulations thereby not fulfilling the objective of ensuring adequate consumption in old age. One of the fundamental principles of good investing is to harness the equity premium when young, and move towards a debt portfolio as one nears retirement. Such a pattern of investing is called lifecycle investing and there are funds, which are designed to do the above. It might be useful for India to design a default option based on the lifecycle principle for the New Pension System (NPS).

Rest of the paper is organized as follows. Section 2 provides a brief discussion of the lifecycle fund, outlines the risks while investing in lifecycle fund and some examples. Section 3 describes the costs involved in lifecycle funds. Section 4 analyzes the lifecycle funding approach in the ambit of NPS. Then a section on

1 Find the details about IIEF at www.iief.com

conclusion followed by references.

2. Lifecycle Fund

Lifecycle fund is a fund, which typically performs an asset allocation on the basis of one of the two factors age or risk tolerance of the investor. For example, for an investor at age 30, a life-cycle fund will invest a higher proportion of the investors' portfolio in equity. Asset allocation in this fund moves according to the age of investor. This shows that aggressiveness in the portfolio depends upon the time period left for retirement of the investor. On similar terms an investor who knows his risk appetite and long-term goals related to retirement savings will invest accordingly and update his portfolio also.

The idea behind life-cycle fund, roughly, is to grow and expand assets, and preserve them as one nears retirement or cannot take risk.

Currently, almost all of the existing life-cycle funds are funds of funds i.e. investment is done in the equity, fixed income and money market securities of the underlying funds[2], while a few own individual securities outright.

There are two different paths to address the life-cycle funds.
1. Target allocation
2. Static allocation

Both of the life-cycle funds share two features
1. Diversify to reduce risk, and
2. Invest for a particular time horizon.
But while the two lifecycle approaches share a basic philosophy, they involve very different investment strategies.

2.1. Target Allocation

In target asset allocation, an investor is asked to identify a probable year of retirement and then select the fund that "matures" at that date. Once the fund is selected, the investor need to do nothing more. The fund manager adjusts the asset allocation through the years to become increasingly conservative as the retirement date nears.

Chart1 provides a view on how the target asset allocations between equity versus non-equity investments for each lifecycle fund gradually change over time. Assuming that

An individual will retire after 35 years from now.

2The Investments, which are being made in the pool of funds of equity, fixed income and money market securities is called as investment in underlying funds.

Fund manager's lifecycle strategy is to put 80% of the assets in the equities and 20% in income funds at the initial stage and shift this ratio gradually to 20% and 80% in equities and income funds respectively.
Every year 2% of the total assets move from equity to income funds.

Chart 1: Asset Allocation

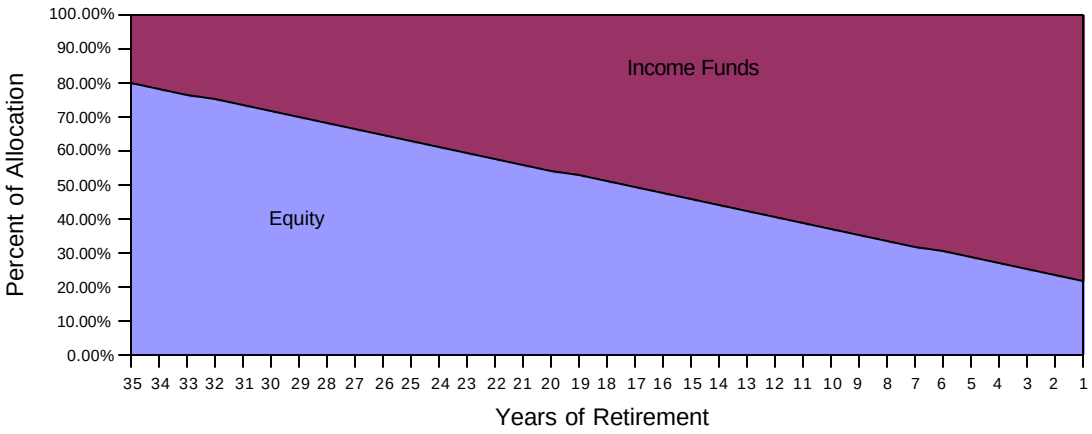


Table1 shows the pattern in which different target retirement funds change with a period of time. As described earlier a target retirement fund is selected on the basis of retirement date. Table2 shows the lifecycle fund, which should be selected by the investor while taking a decision on investing in these funds.

Table1. For different target retirement lifecycle funds.

Fund	Year	Equity / Non Equity (%)
2040	2005	80/20
	2015	70/30
	2025	60/40
	2035	50/50
	2040	35/65
2035	2005	75/25
	2015	65/35
	2025	50/50
	2035	35/65
2030	2005	70/30

	2015	60/40
	2025	50/50
	2030	35/65
2025	2005	65/35
	2015	55/45
	2025	50/50
	2030	35/65
2020	2005	60/40
	2015	50/50
	2020	35/65
2015	2005	55/45
	2010	50/50
	2015	35/65
2010	2005	50/50
	2010	35/65

Table2. Which target lifecycle fund to choose

Retirement Year	**Fund**
2003 to 2007	2005
2008 to 2012	2010
2013 to 2017	2015
2018 to 2022	2020
2023 to 2027	2025
2028 to 2032	2030
2033 to 2037	2035
2038 to 2042	2040

2.2. Static lifecycle fund

The static-allocation strategy presents an investor with a set of portfolios that invest different proportions of assets in underlying funds. The asset mixes have different risk and return characteristics, typically ranging from conservative to aggressive as measured by the exposure to equities. The investor starts out with the portfolio that best fits his time horizon and risk tolerance at that point. These funds are appropriate for the investors that have a willingness and ability to be more involved in their investment decisions. Which of the plan to choose and how to move the funds, all is in the hand of investor. Expenses and costs for managing

a static lifecycle fund also depend on the portfolio chosen by the investor. In general practice plan sponsors provide three kinds of static mixed lifecycle funds, which are shown in chart 2, 3 and 4

Chart 2: Aggressive Lifecycle Fund

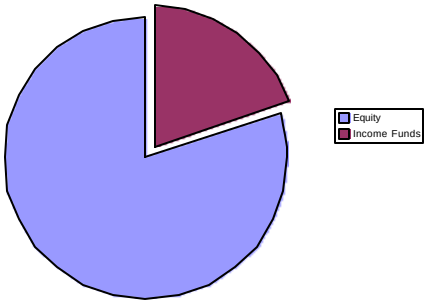


Chart 3: Moderate Lifecycle Fund

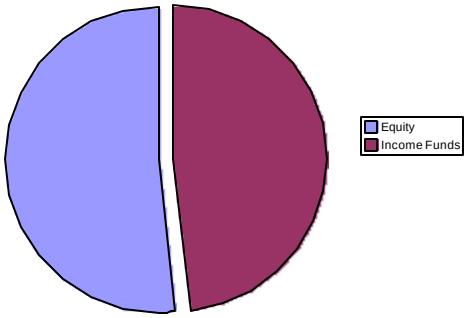
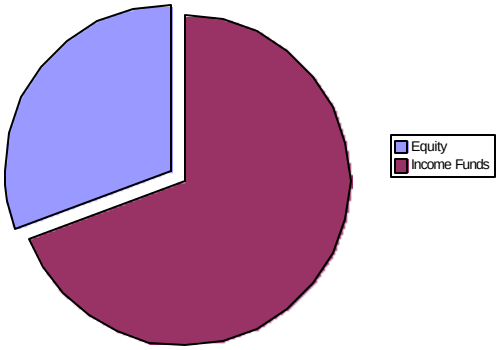


Chart 4: Conservative Lifecycle Fund



2.3. Comparison Table Targeted Maturity Versus Static Allocation

	Targeted Maturity	Static Allocation
Factors in Risk Profile	Investment time horizon (Target retirement date) only.	Risk tolerance, investment experience, And investment time horizon.
Asset Allocation	Dynamic—gradually becomes more conservative as maturity (retirement) date approaches.	Static—automatically rebalances to remain within bands that Define its static allocation.
Participant Profile	Hands-off investors for whom the simplest, turnkey solution is best	Hands-off investors who are nevertheless willing to self-assess risk tolerance by completing the Investor Questionnaire.
Investor Responsibility	None, except to select the appropriate retirement date.	To decide when and how to shift to a more conservative allocation as their risk profile becomes more conservative.

Source: Fund for retirement: Vanguard Funds

2.4. General Risks of Investing in the Lifecycle Funds:

The assets of each Lifecycle Fund are normally allocated among Underlying Funds investing in equity securities, fixed-income securities, and real estate securities; each Fund is subject to varying degrees of risks of each type of security. The Lifecycle Funds are also subject to asset allocation risk. Asset allocation risk is the possibility that the Lifecycle Funds may not be able to invest according to their target allocations and that the selection of Underlying Funds and the allocations among them will result in a Lifecycle Fund under performing other similar funds or cause an investor to lose money.
In general, the risks of investing in specific types of securities or Underlying Funds include

Stock Market Volatility
The risk that the price of securities may decline in response to general market and economic conditions or events.

Company Risk (often called financial risk)
The risk that the issuer s earnings prospects and overall financial position will deteriorate, causing a decline in the security s value over short or extended periods of time.

Foreign Investment Risk
The risks of investing in securities of foreign issuers, securities or contracts traded on foreign exchanges or in foreign markets, or securities or contracts payable in foreign currency. Foreign investing involves special risks, including erratic market conditions, economic and political instability and fluctuations in currency exchange rates.

Financial Services Exposure
Changes in government regulation and interest rates and economic downturns can have a significant negative effect on issuers in the financial services sector.

Technology Industry Concentration
The technology industries can be significantly affected by obsolescence of existing technology, short product cycles, falling prices and profits, and competition from new market entrants. A small number of companies represents a large portion of the technology industries as a whole, and these companies can be sensitive to adverse economic or regulatory developments.

Growth Investing Risk
The value of growth companies is generally a function of their expected earnings growth, there is a risk that such earnings growth may not occur or cannot be sustained.

Small-Cap/Mid-Cap Risk
Smaller company securities may experience steeper fluctuations in price than the securities of larger companies. They may also have to be sold at a discount from their current market prices or in small lots over an extended period, since they may be harder to sell than larger-cap securities.

Special Risks for Real Estate Securities
Securities of companies involved in real estate are subject to all the risks associated with real estate ownership, including fluctuation in the property values, higher expenses or lower income than expected and environmental problems and liability.

Interest Rate Risk (a type of market risk)
This is the risk that bond or stock prices overall may decline when interest rates rise.

Income Volatility Risk
This refers to the risk that the level of current income from a portfolio of fixed-income securities will decline in certain interest rate environments.

Credit Risk (a type of company risk)
A decline in a company s overall financial soundness may make it unable to pay principal and interest on bonds when due.

Prepayment and Extension Risk
The risk of loss arising from changes in duration for certain fixed-income securities that allow for prepayment or extension.

Special Risks for Inflation-Indexed Bonds
Market values of inflation-indexed bonds can be affected by changes in investors inflation expectations or changes in real rates of interest (i.e., a security s return over and above the inflation rate).

Quantitative Investing Risk
Securities selected on the basis of quantitative analysis can perform differently.

2.5 Examples of Lifecycle Funds:

Here are some of the pension plans, which are providing lifecycle funds

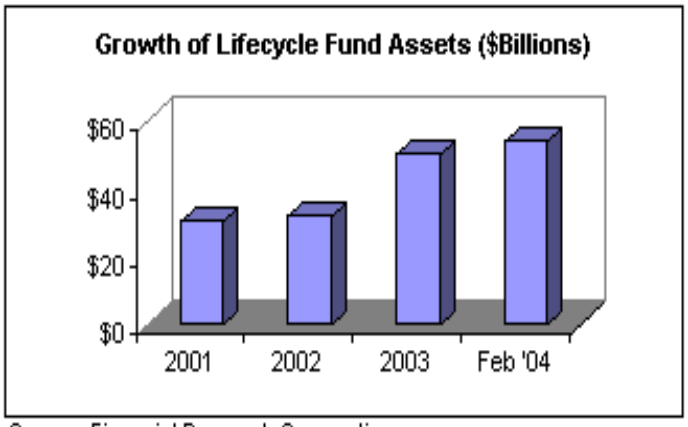
401k plan

A defined contribution plan that permits employees of U.S to have a portion of their salary deducted from their paycheck and contributed to an account. Federal (and sometimes state) taxes on the employee contributions and investment earnings are deferred until the participant receives a distribution from the plan

(typically at retirement). Employers may also make contributions to a participant's account.

The popularity of lifecycle funds has exploded about 19% of companies offer them, up from 9% in 1995. According to Financial Research Corp., total assets in all lifecycle funds (which include asset allocation portfolios and target date maturity portfolios) as of February 2004 was $54.1 billion. In 2001 that number was $30.4 billion.

Chart 5. shows the growth in assets under lifecycle funds in 401k.



Source: Financial Research Corporation

Table 3 Some of the lifecycle funds in 401K plan

Fidelity Freedom Funds	Vanguard Target Retirement Funds	TIAA-CREF Lifecycle Funds	Wells Fargo Outlook Funds
2005	2005	2010	2010
2010	2015	2015	2020
2015	2025	2020	2030
2020	2035	2025	2040
2025	2045	2030	
2030		2035	
2035		2040	
2040			

Thrift Saving Plan (TSP)

The TSP is a retirement savings plan for Federal employees of U.S; it is similar to the 401(k) plans offered by many private employers. As of Oct. 31, 2004, TSP assets totaled more than $143 billion, and retirement savings accounts were being maintained for nearly 3.4 million TSP participants. On November 17, 2004 - The Federal Retirement Thrift Investment Board engaged an Investment Consulting firm to assist in the development of lifecycle funds for the TSP.

According to the board the proposed addition of the lifecycle funds, were the only material gap in the TSP and the next logical step in keeping the TSP consistent with the best plan designs in the industry, from an investment perspective. Board is planning to introduce lifecycle fund by the mid of 2005.

Sweden Premium Pension Fund

In 1998, Sweden passed pension reform that introduced a second tier of mandatory individual accounts, the Premium Pension, in the public system. Currently out of a total of more than 600 funds 6% are lifecycle funds with an average fund fee of 0.61%[3]

The following table shows the share of participants' portfolios Invested in Equity Funds, Balanced Funds, Interest Funds, and Lifecycle Funds by number of funds chosen. This shows that more than 50% of the portfolios which are in lifecycle funds are invested by the participants who have not opted for more than one fund.

Table 4: Share of participants' portfolios Vs. Number of Funds

	Number of Funds Chosen					All
	1	2	3	4	5	Percent of
Participants	14.3	12.8	21.2	19.7	32.0	100
Percent of Portfolio in:						
Equity funds	33.4	68.3	70.1	77.2	83.1	70.3
Balanced funds	11.8	9.8	8.7	7.5	5.9	8.2
Interest-earning funds	1.7	2.0	3.3	2.2	1.8	2.2
Life-cycle funds	53.1	19.9	17.4	13.0	9.1	19.3

Franklin Templeton India Life stage (FTLF) fund of fund:

FTLF is an open-end fund of funds that seeks to generate superior risk adjusted returns to investors in line with their asset allocation. The fund offers a choice of four asset allocation plans.

Table 5: Plans Vs. Asset Allocation

Plans	Equity	Debt
The 20s Plan	80%	20%
The 30s Plan	55%	45%
The 40s Plan	35%	65%

3Source: Säve-Söderbergh (2003)

The 50s Plan	20%	80%
The 50s Plus Floating Rate Plan	20%	80%

The scheme has an inbuilt re-balancing feature that makes each plan revert to the above steady state asset allocation every six months. This ensures that you stay steadfast to your chosen asset allocation, automatically. The equity and debt component in various plans of FTLF are invested in the funds of the Franklin Templeton funds.

Table 6: Lifecycle Plans Vs. % of Investment in Different Funds

Plan	% FIBCF	% FIPF	% TIGF	% TIIF	% TIIBA	% TFIF(LT)
The 20s Plan	50	15	15	10	10	0
The 30s Plan	35	10	10	25	20	0
The 40s Plan	15	10	10	35	30	0
The 50s Plan	10	0	10	40	40	0
The 50s Plus Floating Rate Plan	10	0	10	0	0	80

Franklin India Bluechip Fund (FIBCF)	Large cap focused diversified equity fund
Franklin India Prima Fund (FIPF)	Medium & Small cap focused diversified equity fund
Templeton India Growth Fund (TIGF)	Large cap, 'Value' Focus, diversified equity fund
Templeton India Income Builder Fund (TIIBA)	Moderately aggressive income fund
Templeton India Income Fund (TIIF)	Conservatively managed income fund
Templeton Floating Rate Income Fund (TFIF)	Conservatively managed floating rate fund

3. Cost

Costs should always factor in a decision about the choice of investment. Unlike returns, costs are controllable, and for mutual fund shareholders, higher costs mean less return. Costs vary considerably for life-cycle funds. Some of the cost differences between various fund families can be explained by their choice of investment methodology; Vanguard's lifecycle funds invest only in its low-cost

index funds[4], while T. Rowe Price and Fidelity invest primarily in actively managed funds[5] that generally carry higher costs. Vanguard also invests each of its life cycle funds in far fewer underlying funds than do its competitors. Its Target Retirement Funds invest in four broadly diversified index funds. By contrast, the T. Rowe Price Retirement Funds invest in as many as 11 underlying funds each, and Fidelity's Freedom Funds invest in as many as 19 underlying funds. In addition, expense ratios may represent different types of costs for different life-cycle funds. The lifecycle funds that use a fund-of-funds approach add their own expense ratios to those of the underlying funds. (For example, the life-cycle fund may have an expense ratio of 10 basis points that is added to the 60-basis-point ratio of the underlying funds, for a total of 70 basis points.) But some of them don't charge expenses beyond those of the underlying funds. A comparison of fees and expenses of few of the leading lifecycle fund providers of 401K plans is shown below. (Fees and expenses may vary)
Assumptions

1. Each fund's annual return is 5 %
2. Fees and expenses of the lifecycle funds are according to their brochures.

For every $10,000 investment, following is the table, which an investor would pay as expenses in the Fidelity, TIAA-CREF, Vanguard and Wells Fargo if he sells all of his shares at the end of each time period indicated:

Table 7: Charge Structure of various 401k Plans

Fund	Fidelity		TIAA-CREF		Vanguard		Wells Fargo	
	SELLING AFTER							
	1year	3year	1year	3year	1year	3year	1year	3year
2005	$83	$259	NA	NA	$22	$68	NA	NA
2010	$84	$262	$66	$207	NA	NA	$203	$636
2015	$88	$274	$66	$208	$24	$74	NA	NA
2020	$91	$284	$67	$210	NA	NA	$203	$634
2025	$92	$288	$67	$211	$24	$74	NA	NA
2030	$93	$292	$68	$212	NA	NA	$203	$636
2035	$95	$295	$68	$214	$24	$74	NA	NA
2040	$95	$298	$69	$215	NA	NA	$203	$636
2045	NA	NA	NA	NA	$24	$74	NA	NA

Source: Fidelity, TIAA-CREF, Vanguard and Wells Fargo prospectus.

4Mutual fund that attempts to match the performance of a specified stock or bond market index by purchasing some or all of the securities that comprise the index.

5A style of investment management where the fund manager aims to outperform a benchmark by superior asset allocation, market timing or stock selection (or a combination of these).

4. Simulation

An analysis is performed on the target lifecycle fund, under the assumptions:

Contributions and accumulations will not be with drawn before a period of 35 years.

Interest rates on equity and income funds are static through out 35 years i.e. 4% on equity and 2% on income funds.
Calculations of AUM based charges are done per annum at the end of the year i.e. 80 bps.
AUM based charges are static through out 35 years.
Change in funds is taking place once in a year, at a fixed rate i.e. 2% of total funds.

Following table shows the terminal accumulations at different contribution rates after the deduction of charges.

Table 8: Accumulation in lifecycle funds under different rate of investment

Amount Invested per annum	***Interest Rate***		***AUM based Charges***	***Accumulation after the charges***
	Equity	***Income Fund***		
3000	4.00%	2.00%	0.80%	177249.52
5000	4.00%	2.00%	0.80%	295415.86
10000	4.00%	2.00%	0.80%	590831.73

Amount Invested per annum	*Interest Rate*		*AUM based Charges*	*Accumulation after the charges*
	Equity	*Income Fund*		
12000	4.00%	2.00%	0.80%	708998.08

In the NPS three schemes i.e. Scheme A, B and C has been described from the investment point of view. The fund managers for the investors would float these schemes. The investment pattern of these three schemes is shown in Chart 6, 7 and 8.

Chart 6: Scheme A

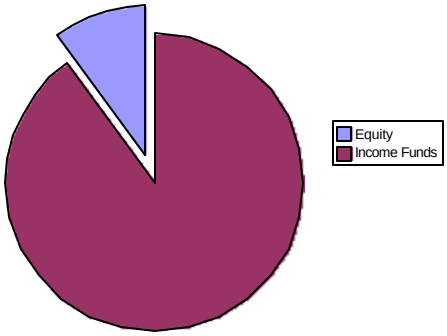
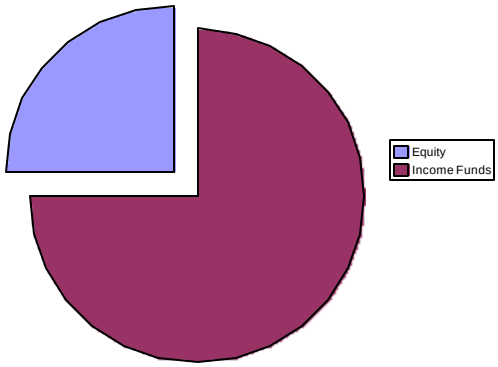
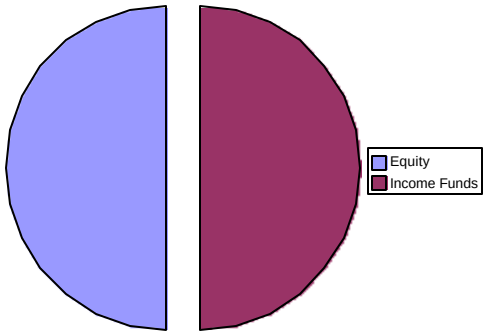


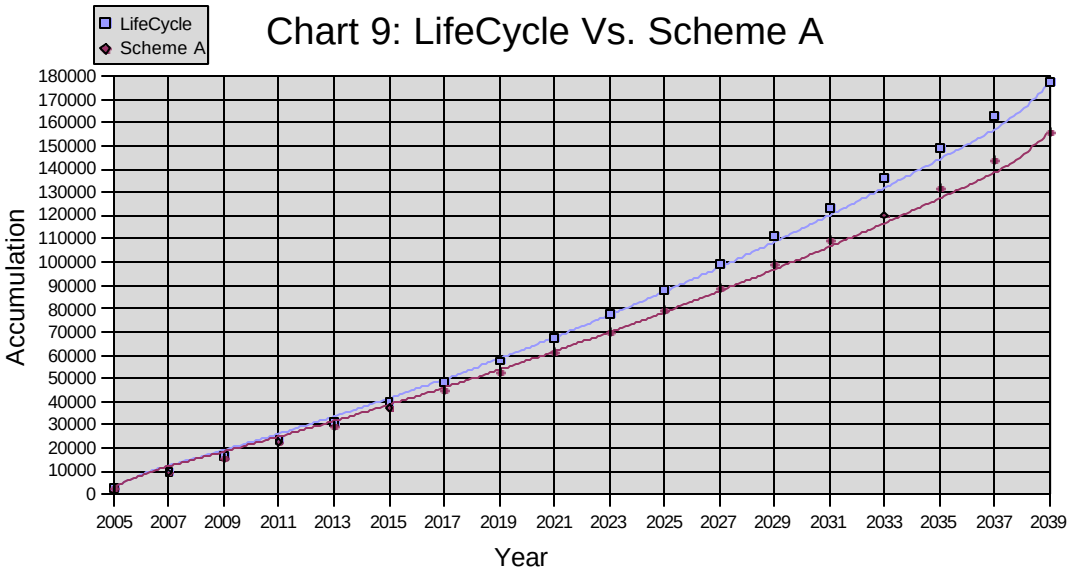
Chart 7: Scheme B



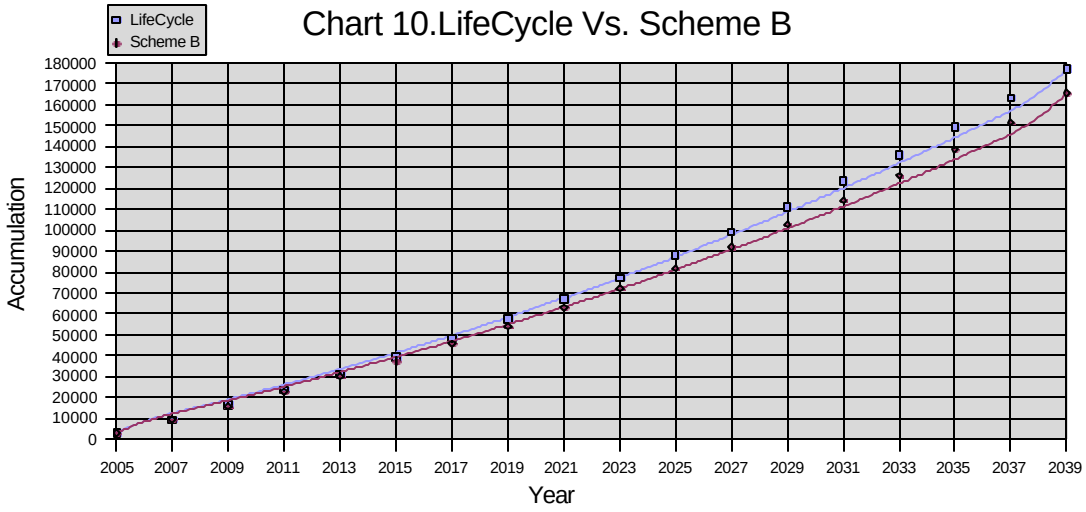
The idea behind Scheme A is to save the portfolio from the downside risk, which may arise because of the exposure to equities. But on the other side when market performs well this scheme will not add up much into ones portfolio. Therefore this scheme can be used during retirement period to preserve the accumulations. In this regard a comparison between Scheme A and target lifecycle asset allocation approach is performed on an investment of rupees 3000 per annum. Chart 9 shows the result of the same.

Chart 8: Scheme C

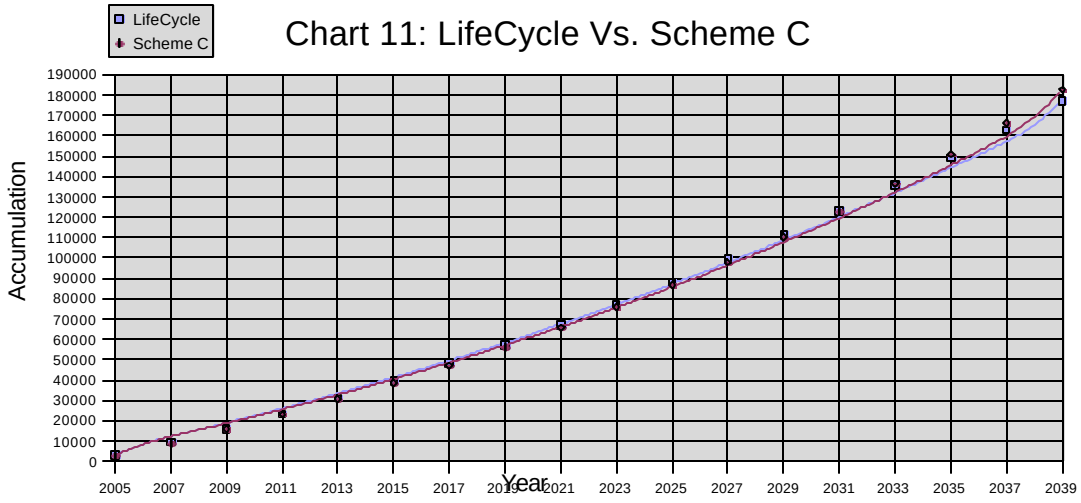




On similar patterns a comparison is performed between Scheme B (quarter of the assets in equity) and target lifecycle asset allocation fund, which is shown in Chart 10.



Now if we look at the Scheme C which has an approximately fifty percent of the total assets in equity may provide a decent accumulation at the retirement stage, but one should not forget the value at risk involve in this kind of portfolio near to retirement. Chart 11 shows the comparison between lifecycle fund and scheme C



Following table is providing the terminal accumulation in Scheme A, B, C and target lifecycle asset allocation after a period of 35 years assuming that return on equity and income fund is static through out 35 years.

Table 9: Comparison between the three schemes and lifecycle funds under different investment options.

Amount invested per annum	***Scheme A***	***Scheme B***	***Scheme C***	***Lifecycle Fund***
3000	156155.04	165509.67	182634.18	177249.52
5000	260258.40	275849.45	304390.30	295415.86
100000	520516.81	551698.91	608780.60	590831.73
12000	624620.17	662038.69	730536.73	708998.08

This simulation states that investment in a lifecycle fund for an investor who does not know much about his risk appetite can provide a portfolio, which would not be much riskier near the time of his retirement. It may also provide an accumulation which would be more than what Scheme A, B and C may provide, if one look at the profile of risk and returns together.

5. Conclusion

Given the increasing demand of simple investment solutions, a lifecycle fund is an appropriate investment for most of the investors. Two kind of lifecycle funds have been discussed in this paper.

The investors who opt for target lifecycle funds typically are either the investors who are looking for a simple solutions that requires nothing of them or

Relatively knowledgeable investors who lack the time or desire to monitor their investments but want the benefit of professional management.

On the other side static lifecycle funds are accepted by the investors who know their risk appetite.

The targeted population should be examined to decide which of the path to choose. Which path to choose depends upon their knowledge, attitude, and motivation towards investment decision? This could be gauged by a survey or an examination, which must include questions like

Are returns rates on savings are low relative to the average market return in their present portfolios?

Do they want to plan asset allocation tend to move with market returns, indicating that participants will not re-balance the portfolios according to their age and risk tolerance capacities?

The use of equity in investments will be low, irrespective of their age?

Will they use only a narrow range of the investment options provided?

Are they typically unresponsive to education and advice programs?

The answers to these questions will help policymakers to assess the overall willingness and ability of the investors to be engaged in the investment process.

If most answers are "yes," the plan's participants may be a relatively unsophisticated group for whom targeted maturity funds could be more appropriate.

In other case i.e. of "no" answers may imply a more sophisticated, engaged population for whom a line up of static-allocation funds would be appropriate.

Therefore, in determining which type of the two paths to offer, one must decide which of the two better matches the unique needs of the participants.

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