

Atal Pension Yojana: Effect of Inflation And Time Value of Money

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Abstract

Economic Growth and Development of a nation is highly influenced by the financial well-being as well as improved standard of living of its citizens. To ensure a stable income for Indian Citizens after retirement, the Government of India has introduced Atal Pension Yojana in 2015-16 Budget. APY provides a defined guaranteed pension depending on the contributions made by the subscriber towards the scheme. APY could emerge as the most popular social security scheme under the NPS System. The present paper analyzes the amount of money an investor would receive from Atal Pension Yojana after adjusting for the time value of money. The study also examines its benefits, contributions and the current trend among the public towards the scheme. The study uses secondary data. Our findings indicate that, as inflation will erode the value of pension amount over time, the pension under Atal Pension Yojana may be too small to cover the cost of living. The Government must index the subscriber contribution to inflation in order to prevent the pension fund of low-income consumers from depleting over time. If the design flaws of APY are addressed, even the most vulnerable will get benefited.

Keywords: Atal Pension Yojana, Pension, Investment, National Pension System, Inflation

Introduction

The percentage of the world's population that is 65 or older is expected to increase from 10% in 2022 to 16% in 2050 (United Nations Department of Economic and Social Affairs Population Division, 2022). Ageing populations in developing nations have significant effects on poverty and attempts to combat it. When compared to the population of working age, the young and the old have higher rates of poverty, with the very young and the very old having the greatest rates (Barrientos et al., 2003; Srivastava & Mohanty, 2012). Countries with ageing populations should take action to adjust governmental programmes to the rise in the

number of senior citizens, especially by strengthening the viability of the social security and pension systems. According to Anh Tran & Stephen Kidd (2017), pension funds are significant stimulus to the growth of every economy. They serve as a means to reduce inequalities among the people and has a notable impact on their well-being. They also facilitate large-scale investments in the economy. Pension plans are set up by employers, Government, or other organizations to benefit their employees after retirement. Financial stability and security are essential for everyone, especially those retiring from the private sector. Pension plans ensure this by providing a regular retirement

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income. The increased cost of living and inflation make retirement planning inevitable in the current scenario.

In order to regulate the pension sector in the country, the Government of India has established the Pension Fund Regulatory and Development Authority (PFRDA) on 10th October 2003. Further, in 2004, they introduced the National Pension Scheme (NPS), a voluntary defined contribution pension scheme managed by the (PFRDA). It is a social security initiative by the Central Government open to employees from the public, private and unorganized sectors (National Pension System Trust, 2022; Pension Fund Regulatory and Development Authority, 2018). Under NPS Scheme, the subscribers shall regularly contribute to their pension account during their employment period. After retirement, they can withdraw a certain portion of the corpus in lump sum and the rest will be used to purchase an annuity to ensure a steady income after retirement.

Considering the large number of employees working in the unorganized sector, the Government had started the Swavalamban Scheme in 2010-11. But the scheme could not provide clarity of future benefits to the subscribers. To cater this inadequacy, the Government of India has launched the Atal Pension Yojana in May 2015 (Press Trust of India, 2021). This is a guaranteed pension scheme administered and regulated by the Pension Fund Regulatory and Development Authority (PFRDA). The scheme ensures a defined pension based on the amount and duration of contribution. Despite being a popular social security initiative, many individuals are still not aware of APY Scheme, its benefits, eligibility, contribution, and operations (Devi.S, 2021). The present paper primarily focuses on analyzing the amount of money an investor would receive from Atal Pension Yojana after adjusting for the time value of money. The study also examines its benefits, eligibility, contributions and the current trend among the public towards the scheme.

Review of Literature

Social security programmes and pension

systems are now a need due to an ageing population and rising living expenses. The ageing population in India necessitates social security programmes and initiatives. Since 92 percent of workers are in the informal sector, conventional pension plans do not reach the majority of them (Unnikrishnan & Imai, 2020). Kaushal (2014) researched the impact of a recent increase in India's National Old Age Pension Scheme on senior citizens' well-being. According to him, state pensions have no impact on the employment of senior or almost elderly males with only a high school degree or less, but they have a negligible impact on the employment of similar women. Sudindra (2016) analyzed the feasibility of the subscription of Atal Pension Yojana as a retirement planning instrument demanding more co-contributions from Government to cater the needs of unorganized sector. Employees of both Government and private sector have favourable attitudes towards different aspects of APY scheme (Bhattacharjee & Rengma, 2020). Even though APY scheme provides various benefits, the majority of individuals are not aware about its benefits, eligibility, contribution, operations etc. (Devi.S, 2021). The contribution of older people to the development process must be acknowledged and encouraged if poverty and vulnerability in later life are to be reduced (Barrientos et al., 2003).

Objectives of the Study

1. To analyze the adequacy of the defined benefit plan under Atal Pension Yojana after adjusting for the time value of money.
2. To examine the current trend towards Atal Pension Yojana.
3. To examine the eligibility, contribution and benefits of Atal Pension Yojana.

Methodology

The study is primarily based on data from reports of the Ministry of Finance (2022), National Pension System Trust (2022) and Pension Fund Regulatory and Development Authority (2018). In order to assess the sufficiency of the defined benefit proposed by APY, Discounted Cash Flow Analysis is used.

Discounted Cash Flow (DCF) Analysis is a valuation technique used to estimate the attractiveness of an investment opportunity. Its analysis creates a present value by discounting projected future free cash flows, which is then used to gauge the viability of an investment (French & Gabrielli, 2005). Taking into account the tense global geopolitical situation and the consequently elevated commodity prices, RBI has projected inflation at 6.7 per cent in 2022-23, with Q1 at 7.5 per cent; Q2 at 7.4 per cent; Q3 at 6.2 per cent; and Q4 at 5.8 per cent, with risks evenly (Resolution of the Monetary Policy Committee (MPC), 2022). The study assesses the adequacy of the defined benefit proposed by Atal Pension Yojana by discounting the defined monthly pension assuming 4%, 6% and 8% inflation rates. This method aids in determining the worthiness of APY investment, as if the value determined by DCF analysis is greater than the investment's present cost, the opportunity may be worthwhile. Due to time value of money concept, DCF analysis is appropriate in any situation in which a person is paying money now with the expectation of receiving more money later. Tabular representation of data and graphical analysis are used to examine the eligibility, contribution and current trend towards APY.

Atal Pension Yojana

The Atal Pension Yojana is a defined contribution retirement savings scheme administered and regulated by Pension Fund Regulatory and Development Authority (PFRDA). The Government of India announced this scheme in 2015-16 budget. It focuses on employees in the unorganized sector to help them have a steady income after their retirement. The minimum age of joining APY is 18 years and the maximum is 40 years. The scheme allows any citizen of India between the above-mentioned age group to join through the bank or post office branches where one has a savings bank account.

Under APY, there is a fixed and guaranteed pension amount depending on the amount you save on a regular basis. For an initial period of 5 years (from FY 2015-16 to FY 2019-20) Central Government contributed 50% of the total contribution or Rs. 1000 per annum, whichever is lower, to each eligible subscriber account, who joined the scheme during the period from 1st June, 2015 to 31st March, 2016 and who are not covered by any Statutory Social Security Scheme and are not income tax payers. However, the scheme will continue after this date, but Government Co-contribution will not be available.

Table 1

Indicative Monthly Contribution Chart

Monthly Contribution towards APY to get a monthly pension of:					
Age of Entry	Rs 1000	Rs 2000	Rs 3000	Rs 4000	Rs 5000
18	42	84	126	168	210
20	50	100	150	198	248
25	76	151	226	301	376
30	116	231	347	462	577
35	181	362	543	722	902
40	291	582	873	1164	1454

Source: Pension Fund Regulatory and Development Authority (PFRDA)

As per the above Indicative monthly contribution chart, a person of age 18 years shall

contribute Rs. 42 per month to get a monthly pension of Rs. 1000 after retirement age. In this

way, a subscriber would receive a minimum guaranteed pension of Rs. 1,000, Rs. 2,000, Rs. 3,000, Rs. 4,000 and Rs. 5,000 per month after attaining the age of 60 years, depending upon his contributions. The same pension would be paid to the spouse of the subscriber after the demise of the subscriber and on the demise of both the subscriber and spouse, the pension wealth as accumulated till age 60 of the subscriber would be returned back to the nominee (Ministry of Finance, 2015).

Exit from the APY before 60 years of age is not permitted except for the demise of the beneficiary or terminal disease. Upon delay in payment of contribution, banks are required to collect charges varying from a minimum of Rs. 1 per month to Rs 10/- per month. A default in payment exceeding 6 months can render your account frozen; exceeding 12 months it will be

deactivated and after a default period of 4 months, the account will be closed.

Results and Interpretation

Discounted Cash Flow (DCF) Analysis

APY is a defined contribution retirement savings scheme. Discounted cash flow analysis is used to gauge how appealing an investment opportunity is. It is used to calculate the amount of money an investor would receive from Atal Pension Yojana after adjusting for the time value of money. Because, a dollar today is worth more than a dollar tomorrow. This research creates a present value by discounting future defined monthly pension, which is then utilized to assess the investment potential. The investment is worthwhile if the pension amount determined through DCF analysis is greater than the defined pension.

The following formula is used to calculate the discounted pension:

$$Actual\ discounted\ pension = \frac{Defined\ Pension}{(1 + Rate)^n}$$

Actual discounted pension: Pension after adjusting the time value of money.

Defined pension: The defined APY monthly pension ranging from Rs. 1000 to Rs. 5000.

Rate: Assumed inflation rates of 4%, 6% and 8%

n: Years of contribution

Table 2

Defined Pension Benefit of Rs. 1,000/- after adjusting inflation

Age of Joining	Years of Contribution	Monthly Contribution	Actual Pension of Rs. 1,000/- discounted @		
			8%	6%	4%
18	42	42	39	87	193
22	38	59	54	109	225
26	34	82	73	138	264
30	30	116	99	174	308
34	26	165	135	220	361
38	22	240	184	278	422
40	20	291	215	312	456

Source: Author's own Calculation.

Table 2 shows the present value of the defined monthly pension of Rs. 1,000/- when discounted at assumed inflation rates of 8, 6, and 4 percent respectively. From the analysis, it is evident that at

8% inflation rate, the difference between a discounted pension and respective monthly contribution is negative for all age groups. The same is positive at 6% and 4% indexation.

Table 3

Defined Pension Benefit of Rs. 3,000/- after adjusting inflation

Age of Joining	Years of Contribution	Monthly Contribution	Actual Pension of Rs. 1,000/- discounted @		
			8%	6%	4%
18	42	126	118	260	578
22	38	177	161	328	676
26	34	246	219	414	791
30	30	347	298	522	925
34	26	495	406	659	1082
38	22	720	552	833	1266
40	20	873	644	935	1369

Source: Author’s own Calculation.

Table 3 shows the present value of the defined monthly pension of Rs. 3,000/- when discounted at assumed inflation rates of 8, 6, and 4 percent respectively. From the analysis, it is noticeable that at 8% inflation rate, the difference between discounted pension and respective monthly contribution is negative for all age groups. The benefit is double the contribution at 6% and quadruples the contribution at 4% indexation if investment began at early ages. The benefit goes on decreasing as the age of joining increases.

Table 4

Defined Pension Benefit of Rs. 5,000/- after adjusting inflation

Age of Joining	Years of Contribution	Monthly Contribution	Actual Pension of Rs. 1,000/- discounted @		
			8%	6%	4%
18	42	210	197	433	963
22	38	292	268	546	1126
26	34	409	365	690	1318
30	30	577	497	871	1542
34	26	824	676	1099	1803
38	22	1196	920	1388	2110
40	20	1454	1073	1559	2282

Source: Author’s own Calculation.

Table 4 shows the present value of the defined monthly pension of Rs. 5,000/- when discounted at assumed inflation rates of 8, 6, and 4 percent respectively. From the analysis, it is clear that at 8% inflation rate, the difference between discounted pension and respective monthly contribution is negative for all age groups. The benefit is double the contribution at 6% and quadruples the contribution at 4% indexation if investment began at early ages. The benefit goes on decreasing as the age of joining increases.

From the above analysis, it is evident that the Atal Pension Yojana is not giving benefits to subscribers at 8% inflation rate. Even though the scheme provides benefits at 6% and 4% indexation, it is ideal for joining in the scheme at early ages as the benefit of the scheme is double and

quadruple at 6% and 4% inflation rates if invested in early age. Thus it is suggestable to join the scheme at early ages to avail the maximum benefit out of it. As inflation will erode the value of Pension amount over time, the pension under Atal Pension Yojana may be too small to cover the cost of living. The Government must index the subscriber contribution to inflation in order to prevent the pension fund of low-income consumers from depleting over time.

Potential Limitations

As with any methodology, the present

survey also has potential limitations. Despite being useful for investors to derive real values, DCF analysis has certain drawbacks. Assumptions are the foundation of DCF analysis. Inflation rates are assumed on the basis of RBI's projected inflation of 6.7 per cent in 2022-23, with risks evenly (Resolution of the Monetary Policy Committee (MPC), 2022). As inflation rates are forecasted, they may change in future depending on the global geopolitical situations. This risk has been minimized to a certain extent by assuming three different inflation rates; 4%, 6% and 8% in the study.

Trend towards Atal Pension Yojana

Table 5

Current Status of APY

Particulars	No. of Subscribers (Lakh)	Contribution (Cr)	AUM (Cr)
Sep 2020	236.9	11585	13042
Sep 2021	312.9	16078	18649
Growth (%)	32.1	38.8	43

Source: Pension Fund Regulatory and Development Authority (PFRDA)

The total number of subscribers under Atal Pension Yojana (APY) increased from 236.9 lakh as on September 2020 to 312.9 lakh as on September 2021, recording a growth of 32.10 per cent over the year. The overall contribution grew by more than 38.8 per cent from 11585 Crore to 16078 Crore during the period September 2020 - September 2021. This shows an overall growing trend in Atal Pension Yojana Statistics over the years.

Enrolments under the Atal Pension Yojana

Table 6

Number of enrolments (category-wise) under the APY Scheme

Category of Banks	Mar-19	Mar-20	Mar-21	12 th Oct 2021
Public Sector Banks	10,719,758	1,56,75,442	2,12,52,435	2,43,90,974
Private Banks	1,145,289	15,62,997	19,86,467	21,21,377
Small Finance Bank	9,190	15,760	35,114	56,012
Payment Bank	48,182	3,44,001	8,18,800	10,93,602
Regional Rural Banks	3,171,152	43,30,190	57,10,770	64,15,150
District Co-op Banks	38,863	48,581	54,628	58,775
State Co-op Banks	1,053	4,620	5,350	5,604
Urban Co-op Banks	14,469	17,355	20,095	21,881
DOP	270,329	3,02,712	3,32,141	3,44,132
Total	1,54,18,285	2,23,01,658	3,02,15,800	3,45,07,507

Source: Pension Fund Regulatory and Development Authority (PFRDA)

According to PFRDA, Public Sector Banks accounted for the largest number of APY subscribers as on 12th October, 2021 i.e., more than Rs 2.43 crore. It is followed by Regional Rural Banks (64.15lakh subscribers), private banks (21.21 lakh), payment banks (10.93 lakh), the Department of Posts (3.44 lakh) and so on. From 10,719,758 enrollments in March 2019, Public Sector Banks achieved a growth to 2,43,90,974 in October 2021.

The states having APY account enrolment of 10 lakhs and more.

Table 7

States which have APY account enrolment of 10 lakhs and more as on 12th October 2021

Sl. No.	State Name	Number of APY Accounts(in Lakh)
1	Uttar Pradesh	51.9
2	Bihar	32.7
3	West Bengal	27.6
4	Maharashtra	26.8
5	Tamil Nadu	25.5
6	Andhra Pradesh	20.5
7	Karnataka	20.5
8	Madhya Pradesh	20.2
9	Rajasthan	17.2
10	Gujarat	14.3
11	Orissa	13.1

Source: Pension Fund Regulatory and Development Authority (PFRDA)

According to the above table, there are 11 states which have APY account enrolment of 10 lakhs and more. They are Uttar Pradesh (51.9 lakhs), Bihar (32.7 lakhs), West Bengal (27.6 lakhs), Maharashtra (26.8 lakhs), Tamil Nadu (25.5 lakhs), Andhra Pradesh (20.5 lakhs), Karnataka (20.5 lakhs), Madhya Pradesh (20.2 lakhs), Rajasthan (17.2 lakhs), Gujarat (14.3 lakhs) and Orissa (13.1 lakhs). There are many states in which enrolment is less than 10 lakhs. It implies that the acceptance of the scheme varies from state to state.

Age & Gender-wise distribution of Atal Pension Yojana subscribers

According to the Economic Survey 2021-2022, young people appear to have become more serious about saving for retirement. Enrolment to the Atal Pension Yojana (APY) at younger age has grown from 29% in 2016 to 43% in the

year 2021. Around 96% of NPS members, who belong to the youngest age group (18-25 years old), have opted for Atal Pension Yojana. Further, out of the total APY subscribers, 45 per cent are aged between 18 and 25 years. On the other hand, more and more people are opting for the basic pension amount of 1,000 per month. In September 2021, approximately 78% of subscribers opted for an amount of 1,000 per month, compared to 38% of subscribers in March 2016(Ministry of Finance, 2022). The gender gap in APY memberships has narrowed with an increase in proportion of female subscribers, down from 37% in 2016 to 44% in 2021.

Importance and Benefits of Atal Pension Yojana

Employees of public, private as well as unorganized sectors can contribute towards the APY scheme. Subscribers can customize their

pension plan in terms of the return required and contributions made. The guarantee of getting a pension amount of ¹ 1000, ¹ 2000, ¹ 3000, ¹ 4000 or ¹ 5000 on attaining the age of 60 years by the Government. On the death of the subscriber, the pension amount will be provided to his/her spouse or nominee. The subscribers to APY are eligible for an Income Tax benefit under section 80CCD of the Income Tax Act, 1961. The Atal Pension Yojana is basically secured as it is backed by the Government of India. The subscribers are not required to contribute in lump sum. An APY account can be opened online with a bank by using one's Aadhaar number known as E APY.

Conclusion

Over the past years, Atal Pension Yojana (APY) has emerged as the most popular social security scheme under the National Pension System with over 3.45 crore subscriber base. It aims at providing financial security to all Citizens of India, especially the workers belonging to the unorganized sector. The scheme has a growing trend in terms of no. of subscribers, total contribution and AUM. Atal Pension Yojana is a complicated scheme while considering the rate of return. The lack of Indexation is a major drawback of the scheme. As inflation will erode the value of Pension amount over time, the pension under Atal Pension Yojana may be too small to cover the cost of living. The Government must index the subscriber contribution to inflation in order to prevent the pension fund of low-income consumers from depleting over time. To combat this, Government and Banking Institutions should take collective initiatives. India has not yet truly established itself in terms of social security systems. The standards of social security programme implementation in India can and do rise with time (Srivastava & Mohanty, 2012). It is suggestible to join the scheme at early ages to avail the maximum benefit out of it. If these design flaws APY are addressed, even the most vulnerable will get benefited.

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