A comparative study of three pillars system and banking methods in accounting long-term purposes of retiree in Indonesian saving account

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Abstract. Human productivity is the main capital in economic activity. This main factor leads to the fact that the continuity of human resources in economic sector depends on the limited productivity age. In other word, once the economic agents has reach the limit of the productivity age. Hence they enter the pension state. In this case, the preparation of ‘old-age’ fund become crucial and should be initiated before the pension state to avoid the destitute condition of retiree. Two most simple and familiar methods in preparing the pension fund are The Three Pillar System and banking methods. Here we simulate the both of the methods for the synthetic data of investment program and analyse the result. The result gives the idea that the Three Pillar System has effective prospect in Long-term scheme. However, the banking method is likely adapted to the short-term plan.

Keywords: Pension Fund, Normal Fee, Three Pillars System, Banking Methods, Saving

1. Introduction

The human age will increase as well as people will grow older. This affects human productivity in finance and economic needs. There are even a moment that humans can no longer meet their need for finances altogether. At that time, the routine of life should be kept as usual. The cost of living is the same or even greater than usual activities will be very burdensome due to reduced finances. According to this background, It is necessary to make a strategy to solve this problem. One solution is to prepare the pension funds prepared during the productive age.

In Indonesia there are many methods of calculating pension funds. Even some agencies offer services to prepare the pension fund. We have to be able to select a best method that will give best result for preparation of pension fund. The Three Pillar System ([1]) and Banking Methods are the methods used to perform calculation of pension funds in several countries. The Three Pillar System has the advantage of being able to show advantages and disadvantages in the calculation of pension
funds. While the Banking Method has an advantage because of its exact calculation. Basically both these systems have different advantages and disadvantages.

The objective of this research is to analyze the use of Three Pillar System with Banking Calculation Method in Indonesia and to find advantages and disadvantages in its application in Indonesia.

2. Basic Concept

The Three Pillar System is a retirement format established by the World Bank in 1998 and has been widely adopted by other countries in Central and Eastern Europe. The purpose of the Three Pillar System is to separate the focus of the object on the calculation of pension funds into three main focuses, namely: (1) Pillar 1 - State Pension, (2) Pillar 2 - Employee Retirement, (3) Pillar 3 - Individual Retirement.

Due to GOV.UK, State pensions are regular government pension payments allowing residents of the country to claim pension funds when they reach the state of pension age. While Retirement Worker is a pension plan that is produced by a company or organization for the benefit of its employees [2], [3]. In this fee scheme, employers and employees contribute to fund the investment that grows during the savings period. In non-contribution schemes, only the employer contributes. The amounts paid to employees on retirement will depend on the type of the scheme and reflect the contribution entered into the employee's last salary. This Scheme is also known as a defined contribution scheme and is one of two employment pension schemes (the other is the final salary scheme). The money-purchase scheme is a scheme where employees effectively have their own pension funds in working pension funds.

According to [3], Individual Retirement is defined as a contribution arrangement between an individual and a pension provider, usually a financial organization such as a community equivalent, a bank, or an insurance company where the employer may also contribute. Individual Retirement can be arranged directly between individuals and providers. In many cases, it is usually fixed by the employer as a means provided to all employees to be able to access pension programs run by pension providers. These are often referred to as private group pensions or in other words employers who sponsor pensions.

2.1 Actuarial Basic Function

The actuarial basic function is a function used for the calculation of normal contributions and actuarial liabilities. Actuarial basic functions used include composite survival function, interest rate function, salary function, benefit function and annuity function. The following is an explanation of each of these functions ([4]).

Composite Survival Function ([4])

Composite survival function is a function that indicates the chance of participants until the time allowed to retire. For example, if a participant is \( x \), the chances of staying active during the active period for the next \( n \) year are formulated as follows:

\[
_nP_x^{(T)} = \frac{l_x^{(T)} x+n}{l_x^{(T)}}
\]

where \( _nP_x^{(T)} \) is the probability of an \( x \)-old participant will remain in service until \( n \) next year. \( l_x^{(T)} \) is the total active employers in age of \( x+n \). While, \( l_x^{(T)} \) is the active employers in age of \( x \).
**Interest Rate Function ([4])**

The interest rate function is used to discount future payments for now. If $i$ is the interest rate assumed to be constant for $n$ years, then the discount factor for $n$ years is calculated as follows:

$$ v^n = \frac{1}{(1+i)^n} $$

with $v^n$ is the discontinue factor within $n$ years.

**Salary Function ([4])**

The participant's salary for one year at age $x$ is denoted by $s_x$. $S_r$ represents the cumulative salary of participants from the age of entry $y$ to age $x-1$ whereas the cumulative salary of participants from the age of admission $y$ to $r-1$, which is formulated as follows:

$$ S_r = \sum_{t=y}^{x-1} s_t $$

with $s_t$ is salary of participants for a years when age $t$ year.

**Benefit Function ([4])**

Benefit functions are used to determine the amount of benefits paid to participants at retirement, accelerated retirement, disability, or death. There are three types of benefit functions used to obtain cumulative benefits, namely *flat dollar unit benefits*, *career average*, and *final average*. In this study the function of benefits used for normal retirement age is a career average with the following formula:

$$ B_r = KS_r $$

with $B_r$ is the cumulative benefit achieved by participants from ages $y$ years to $r-1$, $K$ is the proportion of the average salary provided per year of service.

**Annuity Function ([4])**

An annuity is a payment made by the Pension Fund to a certain number of participants, conducted over a certain period of time or duration, on an ongoing basis. Annuities can be obtained by the following formula:

$$ \ddot{a}_x = \sum_{t=0}^{\infty} tP_x^{(m)}v^t $$

with is $\ddot{a}_x$ the present value of the lifetime annuity at the age of $x$, $tP_x^{(m)}$ is an opportunity $x$-age participants will remain alive for $t$ years later.

3.  Methodology

The data for this research is defined as the Table of Mortality and the Morbidity. The Table of Mortality indicates the estimated mortality rate occurs each year in each age group. The amount of pure premium to be paid is determined by mortality rate. While the table of Morbidity indicates the percentile of events each age group. In this research, the dependent variable is the amount of the participant's pension benefit (rupiah), the contribution to be paid by the pension participant.
3.1 Pay as You Go Method

According to [4], the Pay as You Go Method is a Methodology used to establish an actuarial balance in pension calculations. In the Pay as You Go Method or called the Current Cost Method, the employer only finances an employee's or an employee's retirement benefit as needed outside of the last salary.

In a simplified form, actuarial balance (AB) can be expressed as:

$$ AB = \left[ \frac{TF_0 + y_0 \sum_{t=0}^{74} \theta_t N_t \prod_{h=1}^{t} \frac{1+g_h}{1+r_h}}{y_0 \sum_{t=0}^{74} N_t \prod_{h=1}^{t} \frac{1+g_h}{1+r_h}} \right] - \left[ \frac{B_0 \sum_{t=0}^{74} R_t \prod_{h=1}^{t} \frac{1+\lambda_h}{1+r_h} + \prod_{t=0}^{74} \frac{(TF_{74})}{1+r_h}}{y_0 \sum_{t=0}^{74} N_t \prod_{h=1}^{t} \frac{1+g_h}{1+r_h}} \right] \approx 0 $$

whereas:

- $TF_0$ : Asset value at the beginning of the appraisal period
- $\theta_t$ : Tax payroll (contribution) rate in year $t$
- $y_0$ : Average base contribution in year 0
- $N_t$ : Number of contributors in year $t$
- $g$ : Annual real wage growth rate
- $r$ : Projected outcome on trust fund assets
- $BO$ : Average retirement (benefit) in year 0
- $R_t$ : Number of pensioners in year $t$
- $\lambda$ : The real yearly growth rate benefits
- $TF_{74}$ : Asset value at the end of the valuation period

From the actuarial equilibrium equation we get the normal fee equation based on PAYG method

$$ NC_x = y_0 \sum_{t=0}^{74} \theta_t N_t \prod_{h=1}^{t} \frac{1+g_h}{1+r_h} $$

while the retirement benefits of participants at age $r$ based on PAYG are formulated by equation

$$ B_r = B_0 \sum_{t=0}^{74} R_t \prod_{h=1}^{t} \frac{1+\lambda_h}{1+r_h} $$

3.2 Constant Percent of Salary Method ([5])

Constant Percent of Salary is a method of pension funding that calculates pension benefits based on employee salaries from the first employment. This method is used to calculate the amount of actuarial obligation that the company must incur to the employee at the time of normal retirement. The calculation of actuarial liabilities with Constant Percent type is derived from the multiplication of the present value of future benefits with an annuity comparison based on the participant's salary. Then, the normal contribution is obtained from the multiplication of the salary of participants with the proportion of "K" wages of Constant Percent type.

Actuarial Liabilities ([5])

Actuarial liability is an obligation to provide benefits to pension plan participants at either retirement due to death, disability, early retirement or resignation. The actuarial obligations of the Constant Percent type can be written as follows:
The function \( C_{Pr} (AL)_x \) is a function to obtain the value \( (PVFB)_x \), ie the present value of the normal pension benefit at age \( x \) years. So the equation can be written as follows:

\[
C_{Pr} (AL)_x = \frac{s_{a_x}^{(T)}}{d_{a_x}^{(T)}} ( B_{r-x} P_x^{(T)} y^{r-x} \bar{a}_r ) 
\]

with information as follows:

- \( C_{Pr} (AL)_x \): actuarial liabilities for active participants at age \( x \) years with normal retirement age using Constant Percent.
- \( s_{a_x}^{(T)} \): cumulative current value of lifetime annuity of \( y \) years until the age of \( r-y \) years based on participant's salary.
- \( s_{a_x}^{(T)} \): cumulative current value of lifetime annuity of \( y \) years up to the age of \( x-y \) years based on participant's salary.
- \( B_r \): cumulative benefits achieved by participants from ages \( y \) years to \( r-1 \).
- \( r-x P_x^{(T)} \): the chances of age participants will continue to work until \( r-x \) years upcoming.
- \( v^{r-x} \): discount factor from age to age.
- \( \bar{a}_r \): the present value of a lifetime annuity at retirement age.

The function \( B_{r-x} P_x^{(T)} y^{r-x} \bar{a}_r \) is a function to obtain the value \( (PVFB)_x \), ie the present value of the normal pension benefit at age \( x \) years. So the equation can be written as follows:

\[
C_{Pr} (AL)_x = \frac{s_{a_x}^{(T)}}{d_{a_x}^{(T)}} (PVBV)_x
\]

**Normal Cost ([5])**

The normal fee is the fee that must be fulfilled or paid annually by the participant during the active period of work. In the Constant Percent method, the contribution is normally derived from the percentage of the participant's salary. The normal contribution to the Constant Percent method is derived from multiplying the proportion of "K" values with the participant's salary:

\[
C_{Pr} (NC)_x = K s_x
\]

with \( C_{Pr} (NC)_x \) is the normal contribution for active participants aged \( x \) to age \( r \) years using Constant Percent. \( K \) is the proportion of participant's salary based on Constant Percent type, where the value of "K" is obtained with the following formula:

\[
K = \frac{\gamma (PVFB)_x}{s_y s_{a_x}^{(T)}}
\]

with \( s_{y} \) is the salary of the participant for a year at the age of \( y \) years \( \gamma (PVFB)_x \) is the present value of the normal pension benefit at the age of \( y \) years.

**Traditional Credit Unit**

The Traditional Credit Unit is an actuarial method whose actuarial obligations are the value at the date of valuation, the pension benefit from the date of entry into the plan, by the date of valuation [5]. This
method is also called the Cost Unit Credit Method by Erisa and Anderson, and the Cost Benefit Method by McGill and Grubbs.

If the participant is a pensioner at the age of \( r \) with the annual retirement of \( B_r \), therefore \( B_r \tilde{a}_r^{(12)} \) is sufficient to finance this pension at the age of \( r \). \( B_r \) shows the benefits gained during the active years of service participants, from age \( e \) to age \( r \).

\[
b_x = \frac{B_r}{r-e}
\]  

(13)

The normal cost at the beginning of each year is the cost of the pension benefits received in that year. Given

\[
NC_x = b_x \frac{D_r^{(x)}}{D_x^{(x)}} \tilde{a}_r^{(x)}
\]  

(14)

The normal cost for younger participants is lower due to greater effect than in discount rates \( D_r^{(x)} / D_x^{(x)} \). The normal total cost for a plan each year is the sum of the normal costs for all participants receiving the benefits that should be received. The normal total cost in the coming years will be affected by aging, the size of unit benefits, withdrawals, pensions, deaths, and newcomers.

\[
NC_x = b_x \frac{D_r^{(x)}}{D_x^{(x)}} \tilde{a}_r^{(x)}
\]  

(15)

in the state of \( t=r-x \), hence:

\[
AL_x = NC_x, (x-e)
\]  

(16)

**Saving Account (6)**

Saving Account is a deposit account held in a bank or other financial institution that provides basic security and a simple interest rate. Depending on the type of savings account, account holders cannot write checks from accounts (without adding additional fees or fees) and accounts tend to have a number of transfers / free transactions.

In a simplified form, the calculation of a deposit account can be expressed as:

\[
B_n = \text{deposit.} \left( \frac{1 + \frac{j}{m}^n}{1 + \frac{j}{m}^n} \right) - 1
\]  

(17)

with information as follows:

- \( B_n \): Future value of saved funds
- \( \text{deposit} \): Large initial storage fund
- \( j \): Nominal percent interest
- \( m \): interest rate conversion
- \( n \): storage period
- \( p \): additional deposits per year
4. Result and Discussion

4.1 Comparison of the First Pillar

In this section, the calculation of contributions and retirement benefits for a person aged \( x = 25 \). With income of Rp5,000,000 per month and retirement at age \( r = 56 \) years, percentage of salary increase \( S = 10\% \) and percentage of normal pension benefit equal to \( k = 2\% \). The calculation for obtaining pension benefits for normal pensions using Pay-as-You-GO method is done using equation (8). Then it will be calculated the value of contributions and pension benefits using the Saving Account Method with equation (17).

A similar calculation is made to calculate the pension benefit and the normal contribution for the age of 25 to 56 years. The results are summarized in Table 1.

| Table 1. Comparison Results on the First Pillar |
|---|---|---|---|
| Age | First Pillar System | Saving Account |
| | Contribution | Benefit | Contribution | Benefit |
| 25 | 6,000,000 | 6,000,000 | 6,000,000 | 6,000,000 |
| 26 | 13,200,000 | 12,240,000 | 12,000,000 | 12,120,000 |
| 27 | 21,780,000 | 18,727,200 | 19,200,000 | 18,362,400 |
| 28 | 31,944,000 | 25,468,992 | 27,120,000 | 24,729,648 |
| 29 | 43,923,000 | 32,472,965 | 35,832,000 | 31,224,241 |
| 30 | 57,978,360 | 39,746,909 | 45,415,200 | 37,848,726 |
| 31 | 74,405,562 | 47,298,822 | 55,956,720 | 44,605,700 |
| 32 | 93,538,421 | 55,136,912 | 67,552,392 | 51,497,814 |
| 33 | 115,753,796 | 63,269,607 | 80,307,631 | 58,527,771 |
| 34 | 141,476,861 | 71,705,554 | 94,338,394 | 65,698,326 |
| 35 | 171,187,002 | 80,453,632 | 109,772,234 | 73,012,293 |
| 36 | 205,424,403 | 89,522,950 | 126,749,457 | 80,472,538 |
| 37 | 244,797,413 | 98,922,860 | 145,424,403 | 88,081,989 |
| 38 | 289,990,782 | 108,662,957 | 165,966,843 | 95,843,629 |
| 39 | 341,774,850 | 118,753,089 | 188,563,527 | 103,760,501 |
| 40 | 401,015,824 | 129,203,360 | 213,419,880 | 111,835,712 |
| 41 | 468,687,245 | 140,024,142 | 240,761,868 | 120,072,426 |
| 42 | 545,882,791 | 151,226,073 | 270,838,055 | 128,473,874 |
| 43 | 633,830,574 | 162,820,072 | 303,921,861 | 137,043,352 |
| 44 | 733,909,085 | 174,817,341 | 340,314,047 | 145,784,219 |
| 45 | 847,664,994 | 187,229,372 | 380,345,451 | 154,699,903 |
| 46 | 976,832,993 | 200,067,957 | 424,379,996 | 163,793,901 |
| 47 | 1,123,357,942 | 213,345,195 | 472,817,996 | 173,069,779 |
| 48 | 1,289,419,550 | 227,073,494 | 526,099,796 | 182,531,175 |
| 49 | 1,477,459,901 | 241,265,587 | 584,709,775 | 192,181,798 |
| 50 | 1,690,214,127 | 255,934,535 | 649,180,753 | 202,025,434 |
| 51 | 1,930,744,599 | 271,093,735 | 720,098,828 | 212,065,943 |
| 52 | 2,202,479,024 | 286,756,928 | 798,108,711 | 222,307,262 |
| 53 | 2,509,252,888 | 302,938,212 | 883,919,582 | 232,753,407 |
| 54 | 2,855,356,735 | 319,652,044 | 978,311,540 | 243,408,475 |
| 55 | 3,245,888,822 | 336,913,255 | 1,082,142,694 | 254,276,645 |
| 56 | 3,685,313,759 | 354,737,053 | 1,196,356,963 | 265,362,178 |
And we can see in Graph comparing contributions and pension benefits from First Pillar and Banking Calculations.

![Graph comparing contributions and pension benefits]

**Figure 1.** The graph comparing the first pillar (red line) and the saving account (blue line) for (a). Normal Contribution and (b). Benefit

### 4.2 Comparison on the Second Pillar

In this section a retirement benefit calculation is calculated for a person aged $x = 25$. With revenues of Rp5,000,000 per month and retirement at age $r = 56$ years, the percentage of salary increase $S = 10\%$ and the proportion of participant's salary equal to $K = 2\%$. The calculation for obtaining pension benefits for normal retirement using the Constant Percent of Salary method is done using equation (4).

Furthermore, calculated the normal contribution paid by the participant pension using equation (5). Then it will be calculated the value of contributions and benefits of pension using Saving Account Method with equation (12). A similar calculation is made to calculate the pension benefit and the normal contribution for the age of 25 to 56 years. The results are summarized in Table 2.

| Table 2. Comparison Results on the Second Pillar |
|-----------------------------------------------|
| Age  | First Pillar System | Saving Account |
|      | Contribution | Benefit | Contribution | Benefit |
| 25   | 1,200,000 | 1,200,000 | 1,200,000 | 1,200,000 |
| 26   | 1,320,000 | 2,904,000 | 1,320,000 | 2,666,400 |
| 27   | 1,452,000 | 5,270,760 | 1,452,000 | 4,443,701 |
| 28   | 1,597,200 | 8,503,493 | 1,597,200 | 6,583,032 |
| 29   | 1,756,920 | 12,861,533 | 1,756,920 | 9,143,082 |
| 30   | 1,932,612 | 18,674,946 | 1,932,612 | 12,191,150 |
| 31   | 2,125,873 | 26,362,798 | 2,125,873 | 15,804,344 |
| 32   | 2,338,461 | 36,455,984 | 2,338,461 | 20,070,934 |
| 33   | 2,572,307 | 49,625,708 | 2,572,307 | 25,091,895 |
| 34   | 2,829,537 | 66,719,008 | 2,829,537 | 30,982,643 |
| 35   | 3,112,491 | 88,802,999 | 3,112,491 | 37,875,017 |
| 36   | 3,423,740 | 117,219,959 | 3,423,740 | 45,919,509 |
| 37   | 3,766,114 | 153,655,830 | 3,766,114 | 55,287,803 |
| 38   | 4,142,725 | 200,225,366 | 4,142,725 | 66,175,640 |
| 39   | 4,556,998 | 259,577,885 | 4,556,998 | 78,806,066 |


Based on the data in Table 2. We can make a graph as Figure 2.

![Graph](image)

**Figure 2.** The graph comparing the second pillar (red line) and the saving account (blue line) for (a). Normal Contribution and (b). Benefit

### 4.3 Comparison on the Third Pillar

In this section, the calculation of retirement benefit for a person aged \( x = 35 \) years old at the time of evaluation. It is assumed that a person is calculated to be a retirement participant at the age of \( e = 25 \) years and retired at age \( r = 56 \) years. The calculation to obtain pension benefit for normal pension using Traditional Credit Unit Method is done by using the formula (13).

Furthermore, the calculated normal contribution paid by the participant pension using equation (14). Then it will be calculated the value of contributions and pension benefits using the Saving Account Method with equation (18), namely: The same calculations performed to calculate the benefits of pensions. The normal fee and actuarial liability for the age of 25 to 56 years. The results are summarized in Table 3.
Table 3. Comparison Results on the Third Pillar

| Age | Contribution | Benefit | Contribution | Benefit |
|-----|--------------|---------|--------------|---------|
| 25  | 2,667,493    | 0       | 2,667,493    | 2,667,493 |
| 26  | 2,667,493    | 6,000,000 | 2,667,493    | 5,388,335 |
| 27  | 2,667,493    | 12,000,000 | 2,667,493    | 8,163,594 |
| 28  | 2,667,493    | 18,000,000 | 2,667,493    | 10,994,359 |
| 29  | 2,667,493    | 24,000,000 | 2,667,493    | 13,881,739 |
| 30  | 2,667,493    | 30,000,000 | 2,667,493    | 16,826,866 |
| 31  | 2,667,493    | 36,000,000 | 2,667,493    | 19,830,896 |
| 32  | 2,667,493    | 42,000,000 | 2,667,493    | 22,895,007 |
| 33  | 2,667,493    | 48,000,000 | 2,667,493    | 26,020,399 |
| 34  | 2,667,493    | 54,000,000 | 2,667,493    | 29,208,300 |
| 35  | 2,667,493    | 60,000,000 | 2,667,493    | 32,459,958 |
| 36  | 2,667,493    | 66,000,000 | 2,667,493    | 35,776,650 |
| 37  | 2,667,493    | 72,000,000 | 2,667,493    | 39,159,676 |
| 38  | 2,667,493    | 78,000,000 | 2,667,493    | 42,610,362 |
| 39  | 2,667,493    | 84,000,000 | 2,667,493    | 46,130,062 |
| 40  | 2,667,493    | 90,000,000 | 2,667,493    | 49,720,156 |
| 41  | 2,667,493    | 96,000,000 | 2,667,493    | 53,382,051 |
| 42  | 2,667,493    | 102,000,000 | 2,667,493    | 57,117,185 |
| 43  | 2,667,493    | 108,000,000 | 2,667,493    | 60,927,021 |
| 44  | 2,667,493    | 114,000,000 | 2,667,493    | 64,813,054 |
| 45  | 2,667,493    | 120,000,000 | 2,667,493    | 68,776,808 |
| 46  | 2,667,493    | 126,000,000 | 2,667,493    | 72,819,837 |
| 47  | 2,667,493    | 132,000,000 | 2,667,493    | 76,943,726 |
| 48  | 2,667,493    | 138,000,000 | 2,667,493    | 81,150,093 |
| 49  | 2,667,493    | 144,000,000 | 2,667,493    | 85,440,588 |
| 50  | 2,667,493    | 150,000,000 | 2,667,493    | 89,816,892 |
| 51  | 2,667,493    | 156,000,000 | 2,667,493    | 94,280,723 |
| 52  | 2,667,493    | 162,000,000 | 2,667,493    | 98,833,830 |
| 53  | 2,667,493    | 168,000,000 | 2,667,493    | 103,477,999 |
| 54  | 2,667,493    | 174,000,000 | 2,667,493    | 108,215,052 |
| 55  | 2,667,493    | 180,000,000 | 2,667,493    | 113,046,845 |
| 56  | 2,667,493    | 186,000,000 | 2,667,493    | 117,975,275 |

And the comparison between the methods is in Figure 3.
From the results, we can see that the three pillar system provides more efficient benefits than conventional bank calculation system. With three different treatments, almost all calculations with the three pillar system give greater benefit value as the pension length increases. In the first pillar system, has not seen the advantages of the three pillar system. This is because the value of contributions in the first pillar system is greater than the calculation of the bank. Nevertheless, the benefits gained are greater. In the second pillar system, the value of the contribution is the same. Here it appears that the three pillar system can provide greater benefits. Similarly, the third pillar system that provides greater benefits with the same value contribution between the three pillar systems with saving account method.

Due to the calculations, it give us a new idea that the saving conventional account is too old to be used since the Three Pillars system may have more efficient calculation on giving benefit.

5. Conclusion

From the previous discussion, the authors conclude that; in the First Pillar the premium per age is greater and its benefits are greater as well compared to premium by the Saving Account Method. In the second Pillar, the obligatory premium is relatively constant but relatively larger than the method of Saving Account, while the benefits obtained are greater than the Saving Account Method. In the third Pillar, the premium is equal but their benefit is greater than the calculation by using Saving Account Method. So it can be concluded that the Three Pillar System is better than the Banking Calculation Method.

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