



Financial Free in the Retirement Period by Saving on Stocks

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Abstract

This study aims to calculate the minimum estimate of saving stocks per month to be financially free after 30 years of investing in stocks. The research method used is a quantitative method. The results showed that the estimated minimum funds to get passive income of 5 million, which is equivalent for the next 30 years, is IDR 930,936 per month.

Keywords: financial free, retirement, saving stocks.

1. Introduction

Many people are not financially free when they have retired from a job. Someone is said to be financially free if that person can live on passive income without the need to work. Therefore, people need to invest. One type of investment is stock investment.

Stock is a evidence of partial ownership of a company to investors or traders who invest funds in a company. One of the characteristics of shares is that the owner of the shares can earn dividends. Dividends are part of the profits that the company gets distributed to shareholders (Azis et al., 2015; Dai et al., 2020; Hughes et al., 2019).

Stocks ownership can be bought and sold, one of which is on the Indonesia Stock Exchange. The share price is influenced by the volume of purchases and sales volume. If the buying volume is more than the selling volume, then the share price increases. Conversely, the volume of purchases is less than the volume of sales, the price falls. Therefore, share prices are volatile (easy to change) (Hidayat, 2011; Alessie et al., 2004; Gao et al., 2017; Jiang and Kim, 2005).

The share price is also influenced by the net profit of a company. When the net income of a company increases every year, the share price also continues to increase. If the company can increase profits every year, the shares are worth investing in for the long term (Sulisyanto, 2008; Oyedokun et al., 2019; Iyappan and Ganesamoorthy, 2020; Al Nuaimi et al., 2019).

This study aims to calculate the minimum estimate of saving stocks per month to be financially free after 30 years of investing in stocks.

2. Methodology

This section discusses the present value and future value, the estimated needs of a family every month, the estimated inflation every year, and the estimated stock interest earned every year.

This research uses quantitative methods. The data required in this study are the annual net profit of the BCA and BRI banks, the highest annual share value, inflation from 2015-2019, and the market capitalization of BCA and BRI banks. The research steps used are as follows:

Stage 1: Present Value and Future Value

Present value (PV) is the present value determined by the future value. On the other hand, the future value (FV) is the future value which is determined by the present value (Pramono, 2007; Gaspar-Wieloch, 2019; Zaree et al., 2020; Tharani and Uthayakumar, 2020). The formula for the present value is:

$$PV = \frac{FV}{(1+i)^n} \quad (1)$$

where:

i : interest rate per period

n : time period

Stage 2: Estimated Needs Every Month

When you retire, it is important to know how much money you use each month to make ends meet. If the need for funds is not estimated, the pension funds will run out.

The pension fund needed by each person varies depending on the lifestyle. In this article, it is assumed that the amount of pension money (funds) for a family is IDR 5,000,000 each month (Table 1).

Table 1. Estimated pension fund in one month

Budget Allocation	Amount (IDR)
Food	1,000,000.00
Electricity, water and gas	500,000.00
Vehicle tax	400,000.00
Fuel	300,000.00
Recreational Fees	500,000.00
Property tax	300,000.00
Savings	1,000,000.00
Miscellaneous expense	1,000,000.00
Total	5,000,000.00

Stage 3: Estimated Inflation Each Year

Almost every year, Indonesia experiences inflation. Inflation is an indicator of changes in the value of a currency. For example, 10 years ago IDR 25,000 was used to buy 1.5 kg of eggs, whereas now the same amount of money is only enough to buy 1 kg of eggs.

Therefore, inflation forecasts are needed to estimate the future value of the currency. The average inflation for 5 years from 2015-2019 can be seen in Table 2. From Table 2, it is found that the annual increase in inflation for the 5 years from 2015 to 2019 is 6.64%. This figure is used as the annual inflation rate for 30 years.

Table 2.Inflation in Indonesia, 2014-2019

Year	Inflation (%)
2015	13.66
2016	6.03
2017	5.28
2018	4.59
2019	3.92
Average inflation per year	6.64

Source: <https://www.bi.go.id/id/moneter/inflasi/data/Default.aspx>

Stage 4: Estimated Stock Interest Earned Each Year

A company is said to be healthy when the net profit earned by the company continues to increase every year. A healthy company is expected to keep increasing share prices every year. The author uses the market capitalization indicators in selecting stocks, namely market capitalization greater than 10 trillion and stock interest greater than 15% within the first 5 years when the IPO (Initial Public Offering). Other indicators is stock interest rate.

Market capitalization is the number of shares multiplied by the share price in that company. The greater the market capitalization, the less likely one or more people will control large amounts of shares (for example 10% of market capitalization). Thus, stock prices are more stable when the market capitalization is large. The formula for finding the stock's interest value is

$$i_s = n \sqrt[n]{\frac{HS_x}{HS_{x-n}}} \quad (2)$$

where

i_s : the increase of share price per year

n : time period

HS_x : stock price in year x

HS_{x-n} : Share price in year $(x - n)$

3. Results and Discussion

In this article, the highest stock price is used each year because the author tries to see the stock price when the company is performing well. The author does not estimate stock prices for the next few days or months because stock prices are strongly influenced by the number of buyers and sellers of shares.

Next, two stocks that meet the requirements were selected, namely shares of PT Bank Central Asia Tbk (BBCA) and PT Bank Rakyat Indonesia (BBRI). The first requirement is a market capitalization of more than 10 trillion and BBCA and BBRI meet the first requirements. The market capitalization of BBCA and BBRI can be seen in Table 3.

Table 3. Market capitalization

Stocks	Market Capitalization (IDR in Trillions)
BBCA	497,130
BBRI	247,020

Source: <https://idx.co.id/data-pasar/ringkasan-perdagangan/ringkasan-saham/>

The second condition is that the stock interest rate is greater than 15% in the first five years. The stock price after five years until the share price in 2019 is used to determine the increase in share prices each year. The increase in BBCA and BBRI stock prices can be seen in Table 4 and Table 5. Based on Table 4 and Table 5, the share interest rate in the first five years for BBCA and BBRI shares is 29.59% and BBRI is 60.08%, respectively. Both figures are greater than 15%, so the second condition is met.

Table 4. BBCA Stock Price

Year	Highest Stock Price (IDR)	Stock Interest Per Year (%)
2005	1,950	
2009	5,500	29.593140
2010	7,200	30.909090
2011	8,850	22.916670
2012	9,500	7.344633
2013	11,400	20.000000
2014	13,575	19.078950
2015	15,600	14.917130
2016	16,200	3.846154
2017	22,750	40.432100
2018	26,975	18.571430
2019	34,000	26.042630
2010-2019	Increase in stock price per year	18.820000

Source: <https://finance.yahoo.com/quote/BBCA.JK/>

Table 5. BBRI Stock Price

Year	Highest Stock Price (IDR)	Stock Interest Per Year (%)
2003	132.5	
2007	870.0	60.075860

2008	780.0	-10.344800
2009	870.0	11.538460
2010	1,280.0	47.126440
2011	1,450.0	13.281250
2012	1,570.0	8.275862
2013	1,990.0	26.751590
2014	2,440.0	22.613070
2015	2,690.0	10.245090
2016	2,595.0	-3.531600
2017	3,720.0	43.352600
2018	3,920.0	5.376344
2019	4,730.0	20.663270
2008-2019	Increase in stock price per year	17.800000

Source:<https://finance.yahoo.com/quote/BBRI.JK/>

Furthermore, the author will see if the stock price rises in the following year the company's net profit also increases. BBKA and BBRI net income can be seen in Table 6 and Table 7.

We can see that one of the criteria for selecting stocks is influenced by company profits except for BRI shares in 2008 and 2016. In 2008, BRI's highest decline in share price decreased by 10.35%. Share prices fell due to the global financial crisis (PT Bank Rakyat Indonesia, 2008). In 2016, BRI's highest share price decline decreased by 3.53%. Share prices fell because the smallest increase in net income from 2007-2019 was 2016.

Furthermore, the author will estimate the minimum amount of funds that need to be invested every month, so that someone gets a passive income of 5 million per month within 30 years.

Suppose the author takes the share price per year from 2008-2019 BRI bank is 17.8% with an inflation rate of 6.64%. Furthermore, the author will estimate the total stock fund needed for the next 30 years.

The first step, the author will estimate the total stock fund that will be taken every year after 30 years of investing in stocks.

Table 6.BBKA's Net Profit

Year	Net Profit Per Year (Trillion IDR)	Annual Net Profit Increase (%)
2005	3.598	
2009	6.807	17.27992
2010	8.479	24.56295
2011	10.820	27.60939
2012	11.721	8.32717
2013	14.254	21.61078
2014	16.486	15.65876
2015	18.000	9.18355
2016	20.600	14.44444
2017	23.300	13.10680
2018	25.900	11.15880
2019	28.600	10.42471

Source: PT Bank Central Asia Tbk., (2009), PT Bank Central Asia Tbk., (2014), and PT Bank Central Asia Tbk., (2019)

Table 7.BBRI's Net Profit

Year	Net Profit Per Year (Trillion IDR)	Annual Net Profit Increase (%)
2003	2.579	

2007	4.838	17.03173
2008	5.958	23.15006
2009	7.308	22.65861
2010	11.472	56.97865
2011	15.088	31.52022
2012	18.687	23.85339
2013	21.160	13.23380
2014	24.176	14.25331
2015	25.204	4.25215
2016	25.753	2.17823
2017	28.469	10.54634
2018	32.400	13.80800
2019	34.400	6.17284

Source: PT Bank Rakyat Indonesia Tbk., (2008), PT Bank Rakyat Indonesia Tbk., (2012), PT Bank Rakyat Indonesia Tbk., (2017), and PT Bank Rakyat Indonesia Tbk., (2019)

The estimated total stock fund for each year after 30 years of investing in stocks is:

$$100\% + i_i = (100\% - a)(100\% + i_s)$$

$$106.7\% = (100\% - a)(117.8\%)$$

$$a = 9.42\%$$

where

a : stock fund estimates are taken annually after 30 years of stock investing

i_i : estimated increase in inflation every year

i_s : estimated increase in share prices each year

So, the estimated total equity fund after 30 years of investing in stocks is 9.42%.

The second step, the writer will estimate the total stock fund needed at this time (present value). The total share fund needed at this time is:

$$PV = PV_{12} \times 12 \times \frac{1}{a}$$

$$PV = \text{IDR } 5,000,000 \times 12 \times \frac{1}{9.42\%}$$

$$PV = \text{IDR } 637,200.00$$

where

PV_{12} : monthly needs in a family.

The estimate that the total required share fund currently is IDR 637,200,000.00. Furthermore, the authors will estimate the value of IDR 637,200,000.00 in the next 30 years, namely

$$FV = PV \times (1 + i_i)^n$$

$$FV = \text{IDR } 637,200,000 \times (1 + 6.7\%)^{30}$$

$$FV = \text{IDR } 637,200,000 \times 7$$

$$FV = \text{IDR } 4.2604 \text{ billion}$$

It is estimated that the total stock fund needed after 30 years of investing in stocks is IDR 4.4604 billion. Furthermore, the author will estimate how much minimum funds each month in order to obtain shares of IDR 4.4604 billion within 30 years.

$$IM = \left(\frac{FV}{(1+i)^{30} + (1+i)^{29} + \dots + (1+i)} \right) \left(\frac{1}{12} \right)$$

$$IM = \left(\frac{\text{Rp4.4604 billion}}{(1+0.1391)^{30} + (1+0.1391)^{29} + \dots + (1+0.1391)} \right) \left(\frac{1}{12} \right)$$

$$IM = \text{IDR } 930,936 \text{ per month}$$

where

IM : funds are invested into stocks every month

i : estimated increase in stock interest per year

The estimated fund needed to invest in stocks each month is IDR 930,936 per month. The total funds that can be withdrawn after 30 years of investing in stocks is IDR 4.4604 billion multiplied by 9.42% = 420.169 million / year or IDR 35,014 million / month.

4. Conclusion

From this research it can be concluded that the estimated minimum funds to get passive income of 5 million which is equivalent for the next 30 years is IDR 930,936 per month.

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