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INVESTMENT FEASIBILITY ANALYSIS OF PAYBACK PERIOD AND NET PRESENT VALUE METHODS IN SOE BANKING

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Abstract

This study aims to determine the feasibility of investment to be invested in the banking subsector, especially in State-Owned Commercial Banks (SOEs). The analysis used in this study is descriptive quantitative analysis with Payback Period and Net Present Value methods. Based on the results of the calculation of the payback period, it is possible to know the level of investment eligibility in Bank BRI, Bank Mandiri, Bank BNI, and Bank BTN (BUMN) for the five-year period 2017–2021. The rate of prediction is said to be reasonable or acceptable, that is, in BRI Bank due to the faster rate of return on investment. Based on the results of the calculation of Net Present Value at Bank BRI, Bank Mandiri, Bank BNI, and Bank BTN (BUMN) for the period 2017 to 2021, the level of investment eligibility is accepted or eligible because of a net present Value >0.

Keywords: *Investment Feasibility, Payback Period, Net Present Value*

Introduction

Every potential investor in a company has an equal opportunity to obtain maximum profit from all its activities aimed at enhancing and stabilizing its business amid increasing competition. Some things should be taken into account by the company in determining its management strategy, i.e., investment decision-making, investment planning, business development, and additional risks. (Abdul Halim).

The investment decision-making process is a continuous decision-making process for a certain period of time until the best investment decision is made. (Tandelilin). The phenomenon that occurs in the analysis of investment eligibility with the methods of payback period and net present value has some weaknesses and advantages, as well as solutions that are applied by the author.

According to Dadang Husen Sobana (2018), the advantage of investment suitability analysis for potential investors is to provide clear instructions about the plans to be made in investing, provide an image or education about the suitability of the investments to be executed correctly, identify the suitabilities of the investment from the beginning against the

risks that may occur later on, and provide accurate information according to the investment conditions that is useful for the potential investor to make a decision in choosing which bank to invest in.

Investment eligibility can provide an image of whether the investment benefits a company or will suffer losses. Therefore, eligibility is always measured by two things: how much assets should be invested in an investment, as well as how much income is generated and what risks are associated with the investment.

Eligibility analysis is done by comparing the value of the investment with the return plus risk. The first step is to measure the return on investment. You can get an overview of the return on invested capital by referring to the operating investment. Investment Value Analysis with Payback Period and Net Present Value (Dadang Husen Sobana, 2018)

According to Suad Husnan and Suwarsono (2002:4) in Nur, M. (2016), feasibility analysis is the study of whether or not an investment project is implemented successfully. Business Capability Analysis: According to Umar (2005:p. 8) in Nur, M. (2016 business capability analysis is the study of a business plan that not only analyzes a worthwhile or unworthy business built but also when it is operated routinely in order to maximize profit for an indefinite time.

Investment, as defined by the Indonesian Accounting Association in its Financial Accounting Standards, is an asset used by the business world to increase wealth (Ikatan Akuntan Indonesia,2015) through the distribution of investment results (such as interest, royalties, dividends, and rent), for the valuation of investment value, or for other benefits to the investment business, such as benefits from trading relationships.

According to G.M. Verryn Stuart, Bank is a legal entity whose form meets the needs of others, offering loans in 44 forms of money that others receive, even with new paper or metal money.

UU RI No. 7 Tahun 1992 tentang Perbankan, Pasal 1 number 1: Banks are enterprises that collect funds from society in the form of savings and channel them to society in order to improve the standard of living of many people.

The results of this study also support the research conducted by Nur, M. (2016), entitled "Investment Qualification Analysis on PT. Bank Mandiri (Persero) Tbk, listed on the Indonesian Stock Exchange (BEI), "that the eligibility of investments with these four methods can be predicted to be accepted or not accepted for an investment project.

The results of this study are also consistent with the study conducted by Busthomy and Za (n.d 2016) entitled "Study on Payback Period, 100 Net Present Value, Profitability Index, and Internal Rate Of Return," which found that the method is valid or acceptable when the value is positive or greater than zero. (0)

Method

The population of this study uses banking sub-sector companies, specifically state-owned banks listed on the Indonesia Stock Exchange (IDX) for the 2017–2021 period. The technique used in selecting the sample is saturated sampling, so that the entire population is used as a sample.

This type of research uses quantitative data in the form of financial reports for the 2017–2021 period. Sources of research data with secondary data obtained from journals, books, and the Indonesian Stock Exchange (IDX) during the study period. Data analysis was carried out using the payback period and net present value methods with the aim of determining investment feasibility. According to Subagyo (2007: 211) in Nur, M (2016), the eligibility criteria for the payback period method are that the project is accepted if the recovery period for investment capital is shorter than its economic age. The project is rejected if the recovery period for investment capital is longer than its economic age. By calculation::

Payback Period = n+ $\frac{a-b}{c-b}$ x 1 Year

See also:

n : Last year the amount of cash flow is still not able to close the initial investment

a : The amount of investment

b :The cumulative amount of cash flow in the year n

c : The cumulative amount of cash flow in year n+1

While net present value (Syamsuddin, 2009:448) in (M,Nur:2016) the NPV eligibility criterion is the Project accepted if NPV is positive (>0) and the Project rejected if NPV is negative (<0)

NPV = (Cash Flow x Discount Factor) – Initial Investment

Result

Analysis of investment

Payback Period

a. PT. Bank Rakyat Indonesia (BBRI)

Table Payback Period PT. Bank Rakyat Indonesia

Years	Cash flow (In million rupiah)	Cumulative Cash Flow (In million rupiah)
2017	24.798.037	24.798.037

Years	Cash flow (In million rupiah)	Cumulative Cash Flow (In million rupiah)
2018	27.421.625	52.219.662
2019	30.219.214	82.438.876
2020	32.274.988	114.713.864
2021	26.299.973	141.013.837

Source: Data Processed By Microsoft Excel

$= 5 + \frac{24.752.035 - 24.798.037}{52.219.662 - 24.798.037} x\ 1\ \text{year} = 5{,}00$

Payback Period= 5,00 year

Years	Cash Flow (In Million Rupiah)	Diskonto	AK Discount (Present Value) (In Million Rupiah)	Cumulative AK Discounts (In Million Rupiah)
2017	24.798.037	0,955	23.682.125	23.682.125
2018	27.421.625	0,960	26.324.760	50.006.885
2019	30.219.214	0,943	28.496.719	78.503.604
2020	32.274.988	0,952	30.725.789	109.229.392
2021	26.299.973	0,963	25.326.874	134.556.266
			134.556.267	

Source: Data Processed By Microsoft Excel

$l = n = \frac{a-b}{c-b} x\ 1\ \text{year}$

$= 5 + \frac{24.752.035 - 23.682.123}{50.006.885 - 23.682.123} x\ 1\ year = 5{,}04\ \text{year}$

Payback Period = 5,00 year

The payback period is discounted = 5,04 year

Based on these results it can be concluded that PT. Bank Rakyat Indonesia (BBRI) is said to be eligible or acceptable due to timely returns of 5 years

b. PT. Bank Mandiri (BMRI)

Table Payback Period PT. Bank Mandiri

Years	Cash Flow (In Million Rupiah)	Cumulative Cash Flow (In Million Rupiah)
2017	24.268.563	24.268.563
2018	27.348.914	51.617.477
2019	28.712.595	80.330.072
2020	26.225.089	106.555.161
2021	23.948.485	130.503.646

Source: Data Processed By Microsoft Excel

$$= 5 + \frac{36.618.753 - 24.268.563}{51.617.477 - 24.268.563} x\ 1\ year = 5{,}45$$

Payback Period = 5,45 year

Years	Cash Flow (In Million Rupiah)	Diskonto	AK Discount (Present Value) (In Million Rupiah)	Cumulative AK Discounts (In Million Rupiah)
2017	24.268.563	0,955	23.176.478	23.176.478
2018	27.348.914	0,960	26.254.957	49.431.435
2019	28.712.595	0,943	27.075.977	76.507.413
2020	26.225.089	0,952	24.966.285	101.473.697
2021	23.948.485	0,963	23.062.391	124.536.088
			124.536.088	

Source: Data Processed By Microsoft Excel

$$= n = \frac{a-b}{c-b} x\ 1\ year$$

$$= 5 + \frac{36.618.753-23.176.478}{49.431.435-23.176.478} x\ 1\ year = \ 5{,}51\ year$$

Payback Period = 5,45 year

The payback period is discounted = 5,51 year

Based on these results it can be concluded that PT. Bank Mandiri (BMRI) is said to be ineligible or not accepted because the return is longer than 5 years.

c. PT. Bank Negara Indonesia (BBNI)

Table Payback Period PT. Bank Negara Indonesia

Years	Cash Flow (In Billion Rupiah)	Cumulative Cash Flow (In Billion Rupiah)
2017	11.578	11.578
2018	14.044	25.622
2019	15.362	40.984
2020	16.908	57.892
2021	13.684	71.576

Source: Data Processed By Microsoft Excel

$$= 5 + \frac{22.805-11.578}{25.622-11.578} x\ 1\ year = 5{,}80\ year$$

Payback Period = 5,80 year

Years	Cash Flow (In Billion Rupiah)	Diskonto	AK Discount (Present Value) (In Billion Rupiah)	Cumulative AK Discounts (In Billion Rupiah)
2017	11.578	0,955	11.057	11.057
2018	14.044	0,960	13.482	24.539
2019	15.362	0,943	14.486	39.026
2020	16.908	0,952	16.096	55.122
2021	13.684	0,963	13.178	68.300
			68.300	

Source: Data Processed By Microsoft Excel

$= n = \frac{a-b}{c-b} x\ 1\ year$

$= 5 + \frac{22.805-11.057}{24.539-11.057} x\ 1\ year = 5{,}87$ year

Payback Period = 5,80 year

Discounted payback period = 5.87 years

Based on these results it can be concluded that PT. Bank Negara Indonesia (BBNI) is said to be ineligible or not accepted because the return is longer than 5 years

d. PT. Bank Tabungan Negara (BBTN)

Table Payback Period PT. Bank Tabungan Negara

Years	Cash Flow (In Million Rupiah)	Cumulative Cash Flow (In Million Rupiah)
2017	1.027.554	1.027.554
2018	1.243.615	2.271.169
2019	1.369.167	3.640.336
2020	1.429.426	5.069.762
2021	1.539.577	6.609.339

Source: Data Processed By Microsoft Excel

$= 5 + \frac{4.837.319-3.640.336}{5.069.762-3.640.336} x\ 1\ year = 6$ year

Payback Period = 6 year

Years	Cash Flow (In Million Rupiah)	Diskonto	AK Discount (Present Value) (In Million Rupiah)	Cumulative AK Discounts (In Million Rupiah)

Years	Cash Flow (In Million Rupiah)	Diskonto	AK Discount (Present Value) (In Million Rupiah)	Cumulative AK Discounts (In Million Rupiah)
2017	1.027.554	0,955	981.314	981.314
2018	1.243.615	0,960	1.193.870	2.175.184
2019	1.369.167	0,943	1.291.124	3.466.309
2020	1.429.426	0,952	1.360.814	4.827.122
2021	1.539.577	0,963	1.482.613	6.309.735
			6.309.735	

Source: Data Processed By Microsoft Excel

$= n = \frac{a-b}{c-b} x\ 1year$

$= 5 + \frac{4.837.319-4.827.122}{6.309.735-4.827.122} x\ 1\ year$ = 5,01 year

Payback Period = 6 year

Discounted payback period = 5,01 year

Based on these results it can be concluded that PT. The State Savings Bank (BBTN) is said to be ineligible or not accepted because the return takes longer than 5 years

Net Present Value

a. Net Present Value Bank Rakyat Indonesia (BBRI)

Table Net Present Value PT. Bank BRI

Year	Cash Flow (In Million Rupiah)	Discount Factor	PV Present Value (In Million Rupiah)
2017	24.798.037	0,955	23.682.125
2018	27.421.625	0,960	26.324.760
2019	30.219.214	0,943	28.496.719
2020	32.274.988	0,952	30.725.789
2021	26.299.973	0,963	25.326.874
Total Nilai Sekarang (PV)			134.556.267
Initial Investment			24.752.035
Net Present Value (NPV)			109.804.232

Source: Data Processed By Microsoft Excel

From the calculation of the Net Present Value, it can be seen that the feasibility of investing in Bank Rakyat Indonesia for five years from 2017 to 2021 is acceptable or feasible because the Net Present Value (NPV) > 0

b. Net Present Value Bank Mandiri (BMRI)

Table Net Present Value PT. Bank Mandiri

Year	Cash Flow (In Million Rupiah)	Discount Factor	PV Present Value (In Million Rupiah)
2017	24.268.563	0,955	23,176,478
2018	27.348.914	0,960	26,254,957
2019	28.712.595	0,943	27,075,977
2020	26.225.089	0,952	24,966,285
2021	23.948.485	0,963	23,062,391
Total Nilai Sekarang (PV)			124,536,088
Initial Investment			36.618.753
Net Present Value (NPV)			87.917.335

Source: Data Processed By Microsoft Excel

From the calculation of the Net Present Value, it can be seen that the feasibility of investing in Bank Mandiri for five years from 2017 to 2021 is acceptable or feasible because the Net Present Value (NPV) > 0 with a result of 87,917,335

c. Net Present Value Bank Negara Indonesia (BBNI)

Table Net Present Value PT. Bank BNI

Year	Cash Flow (In Billion Rupiah)	Discount Factor	PV Present Value (In Billion Rupiah)
2017	11.578	0,955	11.057
2018	14.044	0,960	13.482
2019	15.362	0,943	14.486
2020	17.324	0,952	16.492
2021	13.684	0,963	13.178
Total Nilai Sekarang (PV)			68.696
Initial Investment			22.805
Net Present Value (NPV)			45.891

Source: Data Processed By Microsoft Excel

From the calculation of the Net Present Value, it can be seen that the feasibility of investing in Bank Negara Indonesia for five years from 2017 to 2021 is acceptable or feasible because the Net Present Value (NPV) > 0 with a result of 45,891

d. Net Present Value Bank Tabungan Negara (BBTN)

Table Net Present Value PT. Bank BTN

Year	Cash Flow (In Million Rupiah)	Discount Factor	PV Present Value (In Million Rupiah)
2017	1.027.554	0,955	981.314
2018	1.243.615	0,960	1.193.870
2019	1.369.167	0,943	1..291.124
2020	1.429.426	0,952	1.360.8134
2021	1.539.577	0,963	1.482.613
Total Nilai Sekarang (PV)			6.309.735
Initial Investment			4.837.319
Net Present Value (NPV)			1.472.416

Source: Data Processed By Microsoft Excel

From the calculation of the Net Present Value, it can be seen that the feasibility of investing in the State Savings Bank for five years from 2017 to 2021 is acceptable or feasible because the Net Present Value (NPV) > 0 with a result of 1,472,416

Discussion

Based on the results of this study, it has answered the formulation of the problem which states that the Payback Period and Net Present Value methods can predict the feasibility of investing in banking sub-sector companies at state-owned banks with predictive results that are feasible or not and whether investment feasibility is accepted or not accepted.

Based on the results of calculations using the Payback Period method for the BUMN banking sub-sector from 2017 to 2021, Bank BRI is declared eligible or accepted because the payback period is 5 years in accordance with its economic value, except for BMRI, BNI and BTN payback periods are rejected because the payback period is more than 5 years.

Based on the calculation results of the investment feasibility analysis using the Net Present Value method of banking sub-sector companies at state-owned banks for the period 2017 to 2021 it is said that four companies are eligible or accepted, namely PT. BRI Bank, PT. Bank Mandiri, PT. Bank BNI and PT. Bank BTN.

Conclusion

Based on the results of the investment feasibility analysis using the Payback Period and Net Present Value methods in the banking sector listed on the Indonesia Stock Exchange

1. From the results of the investment feasibility analysis using the Payback Period method in the state-owned banking sector, the most superior or the best is Bank Rakyat Indonesia (BBRI)

2. From the results of the investment feasibility analysis using the Net Present Value method in the BUMN Banking sector, it is stated that it is feasible or acceptable

Suggestion

With the limitations in this study, it is expected to improve in subsequent research, including:

1. Calculations using the Payback Period method are simplified to predict investment feasibility so that potential investors find it easier to find out how long the rate of return will be
2. Calculations with Net Present Value are simplified to predict investment feasibility so that potential investors know the company's ability to manage investments
3. Using a method other than Payback Period and Net Present Value
4. For further research, it is hoped that it will be able to carry out an analysis of the feasibility of investments other than BUMN in the banking sector and complement the deficiencies that exist in this study.

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