

The Effect of Profitability, Cost Efficiency and Asset Growth on Fund Adequacy Ratios (RKD) Employer Pension Fund (DPPK) Defined Benefit Pension Program (PPMP) (Empirical Study on PPMP DPPK registered in OJK for Period 2013-2016)

Yulianto^{1*}, Dwi Asih Surjandari²

^{1,2}Magister Akuntansi, Universitas Mercu Buana, Jl. Raya Meruya Selatan No.1, Kembangan, West Jakarta, Indonesia

*Corresponding author: Yulianto

| Received: 12.02.2019 | Accepted: 23.02.2019 | Published: 28.02.2019

DOI: [10.21276/sb.2019.5.2.5](https://doi.org/10.21276/sb.2019.5.2.5)

Abstract

The aims of the research are to analyze the effect of Profitability, Cost Efficiency and Assets Growth on Fund Adequacy Ratio of the Employer Pension Fund with Defined Benefit Pension Program. This research is quantitative research the causal approach uses secondary data and panel data regression analysis method. The research results prove that Return on Investment (ROI), Return on Assets (ROA) and Assets Growth have significant effect on the Fund Adequacy Ratio of The Employer Pension Fund of Defined Benefit Program, but have not been able to prove that Cost Efficiency influences on the Fund Adequacy Ratio of The Employer Pension Fund of Defined Benefit Pension Program.

Keywords: Profitability, cost efficiency, asset growth, pension fund, fund adequacy ratio, defined benefit.

Copyright © 2019: This is an open-access article distributed under the terms of the Creative Commons Attribution license which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use (NonCommercial, or CC-BY-NC) provided the original author and source are credited.

INTRODUCTION

Pension Funds are formed based on Law Number 11 of 1992 dated on April 20th, 1992 concerning Pension Funds, then according to the Financial Services Authority (OJK) Regulation Number 5/POJK.05/2017 dated on March 1st, 2017, Pension Funds are legal entities that manage and run a program that promises retirement benefits as referred to in Act Number 11 of 1992 concerning Pension Funds, including Pension Funds which carry out all or part of their business under Sharia principles.

In the regulation, it is also explained about the type of Pension Fund for Employers hereinafter referred to as DPPK namely a Pension Fund formed by a person or entity that employs employees, as the founder to establish a defined benefit pension plan or a defined contribution pension plan, for the benefit of part or all of its employees as participants, and which creates obligations to the employer as intended in Law Number 11 of 1992 concerning the Pension Fund.

Pension Benefits are periodic payments paid to participants at the time and by the way stipulated in Law Number 11 of 1992.

The Defined Benefit Pension Program, hereinafter abbreviated as PPMP, is a pension program whose benefits are stipulated in the Pension Fund Regulation (PDP) or other pension programs that are not defined contribution pension plans;

The Grand theory behind this research is agency theory [21] that in the Employer Pension Fund (DPPK) what is meant by the Employer is the Founder or Founding Partner that employs employees as referred to in Act Number 11 of 1992 concerning the Pension Fund as a principal, which consists of:

- The person or entity that forms the DPPK; or
- Banks or life insurance companies that form DPLK; the pension fund management as an agent.

The phenomenon in this study is the decrease in the number of Employer Pension Funds (DPPK) as disclosed by Damayanti, Deputy Director of OJK Defined Pension Plan Supervision of Pension Fund Program in an article in the minutes of the event entitled "*The Number of Pension Funds Employers Continues to Shrink*", stating that The Employer Pension Fund (DPPK) specifically the Defined Benefit Pension Program (PPMP) continued to decline from 198 in 2013 to 180 Pension Funds at the end of 2016. Decreasing number of Employer Pension Funds

(DPPK) Defined Benefit Pension Program (PPMP) as stated in Table-1.

Table-1: Number of Pension Funds year 2013-2016

Type of Pension Fund	2013	2014	2015	2016
DPPK-PPMP	198	194	190	180
DPPK-PPIP	43	48	45	44
DPLK	24	25	25	25
Total	265	267	260	249

Source: 2016 Pension Fund Statistics Book and OJK Report

The enactment of Government Regulation (PP) No. 45 of 2015 concerning Pension Insurance (JP) from The Manpower Social Security Organizing Agency (BPJSTK), which became effective since July 2015, is a challenge for the Employer Pension Fund (DPPK) because in its mandatory participation rules may encourage Pension Providers (DPPK) to make a cut off of their pension plans.

According to the Decree of the Minister of Finance of the Republic of Indonesia Number 510/KMK.06/2002 dated on December 4th, 2002 concerning Funding and Solvability of Employer

Pension Funds (DPPK), as last updated through Regulation of the Minister of Finance Number 21/PMK.010/2012 dated on February 1st, 2012 explained that Funding Ratio is the result of sharing wealth for funding with actuarial liabilities.

Fund Adequacy Ratio (RKD) is important to concern and learn considering the effect on the risks faced by the Employer Pension Fund (DPPK) Defined Benefit Pension Program (PPMP) to fulfill its long-term obligations in paying participant pension benefits, in addition to influencing additional contributions will be a burden to the founder when experiencing a deficit.

Table-2: Percentage of RKD DPPK PPMP Development year 2013-2016 (in %)

Level of RKD	2013	2014	2015	2016
Level I	44	40,93	35,79	41,11
Level II	37	38,34	46,84	47,22
Level III	14	14,51	12,63	8,89
Level IV	5	6,22	4,74	2,78
Total	100	100	100	100

Source: Book of Pension Fund Statistics 2013-2016.

Based on data in Table-2 above it can be explained that the number of Employer Benefit Pension Funds (DPPK) for Defined Benefit Pension Program (PPMP) in the Level I Fund Adequacy Ratio (RKD) for the last 4 (four) years has decreased. This shows an unfavorable development because it means that more Employer Pension Fund (DPPK) Defined Benefit Pension Program (PPMP) with a funding condition are not met.

Some of the variables used in this study are Return on Investment (ROI) which according to Sartono [1] Return On Investment (ROI) indicates the company's ability to generate profits from assets used, Return on Assets (ROA) which according to Fahmi [2] is a ratio used to see the extent to which invested investment is able to provide returns as expected, Investment Cost Efficiency (EBI) related to costs for investment activities which if too large will lead to waste and reduce development results, usually consisting of costs fees and commission fees [3].

The next variable is Operational Cost Efficiency (EBO) which is not directly related to the company's products but it is related to the company's daily operational activities [4], Asset Growth variable which is defined as an annual (growth rate) change of

total assets [5]. Variable Fund Adequacy Ratio (RKD) is a comparison of the value of assets or net assets of pension funds to actuarial liabilities [6].

This study attempts to review the effect of profitability and activity ratios (efficiency) related to the Fund Adequacy Ratio (RKD) as one of the benchmarks for the performance of Employer Pension Funds (DPPK) Defined Benefit Pension Program (PPMP).

METHODOLOGY

Types of Research

Based on the variables used in this study, namely Return On Investment (ROI) as X1, Return On Assets (ROA) as X2, Investment Cost Efficiency (EBI) as X3, Operational Cost Efficiency (EBO) as X4, Asset Growth as X5 and Fund Adequacy Ratio (RKD) as Y, hence this research is quantitative research because the research data is in the form of numbers and statistical analysis. The causal approach used aims to determine the effect that is causal between two or more variables.

Return on Investment (ROI)

Return on Investment (ROI) is part of the profitability ratio associated with the return on

investment carried out by the Employer Pension Fund (DPPK) Defined Benefit Pension Program (PPMP).

According to Sartono [1] Return on Investment (ROI) shows the ability of a company to generate profits from assets used.

In the Financial Services Authority Circular Number: 9/SEOJK.05/2016 concerning the Funding of Pension Fund Investment Assessment, it is stated that the Pension Fund Investment Results Report is equipped with the calculation of Investment Returns (Return on Investment/ROI).

Return on Asset (ROA)

Return on Assets (ROA) is a part of Profitability that is related to the ability of a company to generate profits (profits) from assets used in operations.

According to Brigham and Houston [7] Return on Assets (ROA) is the ratio of net income to total assets to measure returns on total assets after interest and tax. Whereas according to Sutrisno [8] Return on Assets (ROA) is a measure of a company's ability to generate profits with all assets owned by the company.

Investment Cost Efficiency (EBI)

According to Kadarisman and Wahyuni [3] investment costs are a measure of efficiency in carrying out investment activities and if it is too large it will lead to waste and reduce the results of investment development.

In the Employer Pension Fund (DPPK) Defined Benefit Pension Program (PPMP) these costs characteristics are inherent in the instruments of investment in land, buildings and land and buildings.

Operational Cost Efficiency (EBO)

Operational Cost Efficiency (EBO) is a ratio to measure the efficiency of a pension fund in carrying out operational activities and performing its duties as a fund collector, investing and paying pension benefits to participants who have entered retirement [17].

The characteristics of the costs will basically reduce investment returns, so that if the operational costs are greater, the results of the development of funds will decrease and will affect the ability to pay their obligations for payment of pension benefits.

Assets Growth (Paset)

The Sharasanti and Ratnawati Journal [9] explains that Pension Fund Growth (PDP) is the ability of pension funds to increase the size that is highly expected by internal parties (Pension Fund Management), as well as external parties (Pension Fund Bureau).

Fund Adequacy Ratio (RKD)

The Employer Pension Fund (DPPK) Performance Defined Benefit Pension Program (PPMP) is a description of the extent to which the success of the management's accomplishments in carrying out its main duties and functions manages finances and maintains the pension fund funding ratio to achieve fully funded conditions. An important aspect in the Fund Adequacy Ratio (RKD) comes from the contributions, both participant contributions and employer contributions and the results of the development of the investment.

The Fund Adequacy Ratio (RKD) has 3 (three) levels of conditions, namely:

- Level I Funding Conditions, is a condition where the funding ratio is at a surplus (over funded) level. In this condition the value of the Fund Adequacy Ratio (RKD) is above or > 100%.
- Level II Funding Conditions, is a condition where the Fund Adequacy Ratio (RKD) is at a fully funded level, because the amount of wealth for funding is equal to the amount of actuarial liabilities or equal to 100%.
- Level III Funding Conditions, is a condition where the Fund Adequacy Ratio (RKD) is at the level of an unfunded, because the amount of wealth for funding is smaller than the actuarial liabilities or below 100%.

In the event of an unfunded case, then the obligation of the Employer (Founder or Founding Partner) to pay the Additional Contributions, which can be paid at once or installments in a certain period according to the applicable regulations.

Kadarisman and Wahyuni [3] state that the first level is the safest funding condition and the second and third levels indicate threatened and hazardous conditions, which are the responsibility of the employer, so that the financial risk is at the employer.

Population and Samples

Population is a generalization area consisting of objects/subjects that have certain quantities and characteristics determined by researchers to be studied and then drawn to conclusions [10].

The method of sampling this study using purposive sampling technique, namely the technique of determining the sample that has certain characteristics and criteria, while the statistical method used to test the hypothesis is the panel cross section data regression.

The data used is secondary data, in the form of reports and financial information, bulletins or annual reports for the 2013-2016 period of 12 (twelve) Employer Pension Funds (DPPK) Defined Benefit Pension Program (PPMP) registered in the Financial Services Authority (OJK) for the period of July 2017, as listed in Table-3.

Table-3: DPPK Data Sampling

No	Name of DPPK	Type of DPPK
1	DP BI	PPMP
2	DP BRI	PPMP
3	DP BNI	PPMP
4	DP BTN	PPMP
5	DP PERTAMINA	PPMP
6	DP TELKOM	PPMP
7	DP PLN	PPMP
8	DP ANTAM	PPMP
9	DP PERKEBUNAN	PPMP
10	DP BPD RIAU	PPMP
11	DP NIAGA	PPMP
12	DP MANDIRI 2	PPMP

Source: data processed by researchers in 2019 with eviews ver. 9

RESULTS AND DISCUSSION

Descriptive statistics

Descriptive statistical tests were carried out by looking at the minimum, maximum, average and standard deviation values of the research data.

The results of the descriptive statistical test on the research data can be seen in Table-4.

Table-4: Descriptive Statistics in %

INFO	RKD	ROI	ROA	EBI	EBO	PASET
Mean	103.5506	9.667083	8.784792	4.406042	0.633750	4.467292
Median	104.5550	9.680000	8.010000	3.280000	0.565000	3.905000
Maximum	139.0000	29.93000	31.29000	31.10000	1.320000	54.25000
Minimum	72.65000	-4.820000	-4.250000	0.260000	0.200000	-11.38000
Std. Dev.	14.91670	6.394571	5.411615	5.259797	0.276572	11.47016
Observ.	48	48	48	48	48	48

Source: data processed by researchers in 2019 with eviews ver. 9

From data Table-4 The Fund Adequacy Ratio (RKD) in Employer Pension Funds (DPPK) Defined Benefit Pension Program (PPMP) which is the sample of this study has a value range of 72.65%-139.00%, an average value of 103.55% means partially the amount of the Employer Pension Fund (DPPK) Defined Benefit Pension Program (PPMP) which is the sample of this study has a value of the Fund Adequacy Ratio (RKD) that has been fulfilled (fully funded).

In Return on Investment (ROI) variable the range of values recorded as a result of the descriptive statistical test is -4.82%-29.93%. The average return on investment (ROI) of 9.66% shows a good value.

In Return on Assets (ROA) variable the range of values recorded as a result of the descriptive statistical test is -4.25%- 31.29%. The average value of Return on Assets (ROA) of 8.78% shows a fairly good value (positive).

In the Investment Cost Efficiency variable (EBI) the range of values recorded as a result of the descriptive statistical test is 0.26%-31.10%. The average Investment Cost Efficiency (EBI) of 4.40% shows a fairly good value.

In the Operating Cost Efficiency variable (EBO) the range of values recorded as a result of the descriptive statistical test is 0.20%-1.32%. The average value of Operating Cost Efficiency (EBO) of 0.63% shows a fairly good value.

In the Asset Growth (Paset) variable the range of values recorded as a result of the descriptive statistical test is -11.38%-54.25%. The average value of Asset Growth (Paset) of 4.47% shows a fairly good value.

Test Panel Data Estimation Test Results

Test results from several panel data estimation testing methods that have been carried out as listed in Table-5.

Table-5: The Results Test of Panel Model Estimate Conclusion

No.	Test Method	Test Results
1.	Chow Test	Fixed Effect
2.	Hausman Test	Random Effect
3.	Lagrange Multiplier Test	Random Effect

Source: data processed by researchers in 2019 with eviews ver. 9

Based on data Table-5 It can be concluded that the most appropriate panel data estimation method used in this study is *random effect*.

Estimated Random Effect Model

The Random Effect model is a panel data estimation model with coefficient and intercept assumptions different between individuals and random effects. The estimation results of the random effect model for this study are listed in Table-6.

Table-6: Random Effect Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	104.5530	8.312466	12.57785	0.0000
ROI	0.233600	0.114703	2.036571	0.0480
ROA	-0.253898	0.133952	-1.895436	0.0649
EBI	-0.179685	0.187692	-0.957339	0.3439
EBO	-3.206379	11.50603	-0.278670	0.7819
PASET	0.401497	0.060013	6.690131	0.0000
Weighted Statistics				
R-squared	0.248066	Mean dependent var	38.40467	
Adjusted R-squared	0.158550	S.D. dependent var	9.560544	
S.E. of regression	8.769944	Sum squared resid	3230.301	
F-statistic	2.771189	Durbin-Watson stat	1.262985	
Prob(F-statistic)	0.029862			

Source: data processed by researchers in 2019 with eviews ver. 9

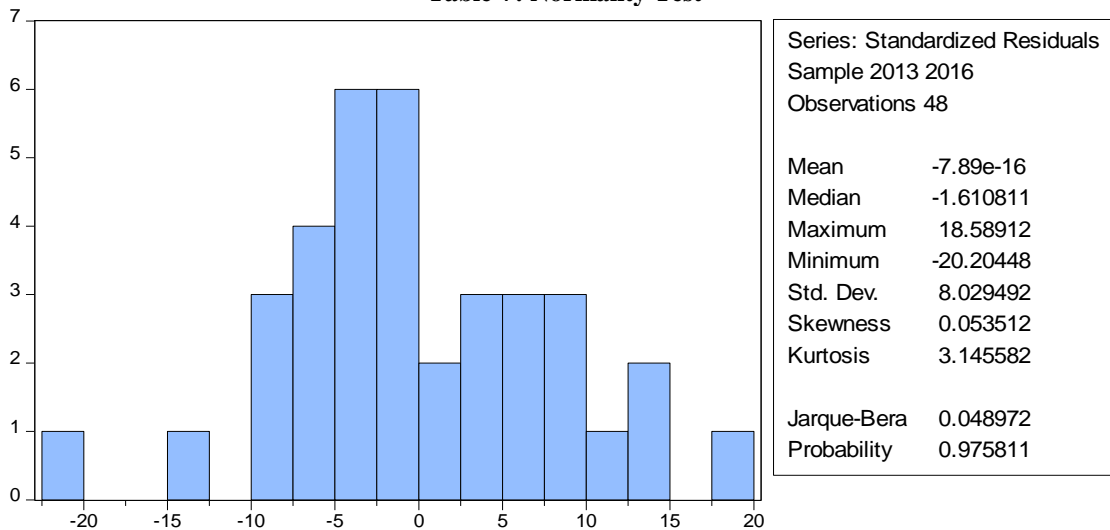
Classic Assumption Test

The classic assumption test is a test conducted to test whether or not a regression model is used in a study.

Normality test

Simply done by comparing the probability value of calculating errors with alpha level, with the determination that if the probability of fallows is greater than alpha then the residuals are normally distributed, so that the classical assumptions about the normality of the estimation model can be fulfilled. The results of the normality test are listed in Table-7.

Table-7: Normality Test



Source: data processed by researchers in 2019 with eviews ver. 9

Based on Table-7 above, it is obtained the probability of jarque-berra value of 0.975811 or 97.58% which means it is greater than the significance value of 0.05 and it can be concluded that the residuals have been normally distributed so that the classical assumptions about the normal estimation of the random effect model have been fulfilled.

Multicollinearity Test

Multicollinearity test is conducted to test whether in the regression model, there is a correlation between the independent variables [11]. In a good regression model there should be no correlation in the independent variable. Test results carried out as listed in Table-8.

Table-8: Multicollinearity Test

	ROI	ROA	EBO	EBI	PASET
ROI	1.00000	0.67822	-0.02163	-0.12729	0.54307
ROA	0.67822	1.00000	-0.14363	-0.20028	0.36118
EBI	-0.02163	-0.14363	1.00000	-0.20188	0.11075
EBO	-0.12729	-0.20028	-0.20188	1.00000	-0.04469
PASET	0.54307	0.36118	0.11075	-0.04469	1.00000

Source: data processed by researchers in 2019 with eviews ver. 9

Based on Table-8 it can be seen that the correlation value is < 0.8 so it can be concluded that there is no multicollinearity in this study.

Heteroscedasticity Test

Heteroscedasticity test is conducted with the aim to test whether in the regression model there is an inequality of variance from the residual one observation to another observation [11]. According to Wati [12] heteroscedasticity is common in the type of cross section data. Of the three panel data regression models (common effects, fixed effects and random effects), only common effects and fixed effects allow heteroscedasticity to occur, while random effects do not occur. This is because the estimation of common effects and fixed effects still uses the Ordinary Least Square (OLS) approach while the random effect uses Generate Least Square (GLS). In connection with this research, it has been concluded that the regression model that is

suitable to be used is random effect, so in this discussion there is no heteroscedasticity test.

Autocorrelation Test

The autocorrelation test can be done using Durbin-Watson (DW-Test), which is by comparing the DW value in the regression model table (Table-6) with the DW value of the Durbin Watson Table (standard), which produces the following comparison numbers:

- DW value in Table-5 The Random Effect Regression Model is 1.26299
- The value in the DW table is $dL = 1.36192$, $dU = 1.72061$, $4-dU = 2.27939$

By looking at the comparison value, the result is $d < dL$, which means there is a correlation (positive).

The autocorrelation test of differentiation methods carried out in this study as listed in Table-9.

Table-9: Autocorellation Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.944961	3.859755	-0.503908	0.6180
ROI	0.540110	0.191474	2.820801	0.0084
ROA	-0.484784	0.066444	-7.296167	0.0000
EBI	0.029600	0.084962	0.348397	0.7300
EBO	-3.870309	7.985916	-0.484642	0.6315
PASET	0.756504	0.085977	8.798943	0.0000
Weighted Statistics				
R-squared	0.602367		Mean dependent var	1.845833
Adjusted R-squared	0.536095		S.D. dependent var	12.73348
S.E. of regression	8.672842		Sum squared resid	2256.546
F-statistic	9.089299		Durbin-Watson stat	1.890055
Prob(F-statistic)	0.000024			

Source: data processed by researchers in 2019 with eviews ver. 9

Based on Table-9 The above obtained DW value of the random effect regression model compared with the standard DW table value is $1.72061 < 1.89005 < 2.27939$ which is in accordance with the $dU < d < (4-dU)$ equation which indicates that the

random effect regression model table has no correlation (positive) again.

F Statistics Test

The F statistical test is performed to determine whether or not the estimation model used in

this study is feasible, whose test results are as listed in Table-10.

Table-10: F Statistic Test

Weighted Statistics			
R-squared	0.602367	Mean dependent var	1.845833
Adjusted R-squared	0.536095	S.D. dependent var	12.73348
S.E. of regression	8.672842	Sum squared resid	2256.546
F-statistic	9.089299	Durbin-Watson stat	1.890055
Prob(F-statistic)	0.000024		

Source: data processed by researchers in 2019 with eviews ver. 9

Based on Table-10 above, obtained the value of the statistical test F of 9.089299 with the Prob (F-statistic) of 0.000024, which indicates that panel data estimation is feasible and suitable to be used because the significance level is smaller than 0.05.

Determinant Coefficient (R²)

Determinant coefficient (R²) is used to find out how far the ability of the independent variables explained the dependent variable.

The results of determinant coefficients test are listed in Table-11.

Table-11: Determinant Coefficient Test (R²)

Weighted Statistics			
R-squared	0.602367	Mean dependent var	1.845833
Adjusted R-squared	0.536095	S.D. dependent var	12.73348
S.E. of regression	8.672842	Sum squared resid	2256.546
F-statistic	9.089299	Durbin-Watson stat	1.890055
Prob(F-statistic)	0.000024		

Source: data processed by researchers in 2019 eviews ver.9

Based on Table-11 obtained R-square value of 0.602367 or 60.24% and Adjusted R-Squared of 0.536095 or 53.61% which indicates that the independent variables are able to explain 53.61% of the dependent variable, then there are other independent variables that are not included in the panel data

estimation of this research with a value of 46.39% which can affect the dependent variable.

t Statistical Test

The results of the t statistical test in this study are listed in Table-12.

Table-12: t Statistical Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.944961	3.859755	-0.503908	0.6180
ROI	0.540110	0.191474	2.820801	0.0084
ROA	-0.484784	0.066444	-7.296167	0.0000
EBI	0.029600	0.084962	0.348397	0.7300
EBO	-3.870309	7.985916	-0.484642	0.6315
PASET	0.756504	0.085977	8.798943	0.0000

Source: data processed by researchers in 2019 eviews ver.9

From Table-12 data above can be presented in a panel data regression equation from the inward coefficient values as follows:

$$RKD = -1,94 + 0,54ROI - 0,48ROA + 0,03EBI - 3,87EBO + 0,76Paset + e$$

Based on data from Table-11 Return on Investment (ROI) variable has a significance level of <5% which is equal to 0.0084, which shows the results of the study support the hypothesis that the Return on

Investment (ROI) has an effect on the Fund Adequacy Ratio (RKD) with a positive direction coefficient of 0.54, so it can be concluded that the hypothesis is accepted.

The results of this study are in line with the results of research conducted by Hery, Hermanto and Lukytawati [13], which concluded that the investment portfolio return was influential to maintain a fully funded Fund Adequacy Ratio (RKD). Other study result

that optimal investment portfolio is important for pension fund investment performance [19].

The variable Return On Assets (ROA) has a significance value of $<5\%$ which is equal to 0.0000, which shows the results of the study supporting the hypothesis which states Return On Assets (ROA) affects the Fund Adequacy Ratio (RKD), with a negative direction coefficient of -0,48, so it can be concluded that the hypothesis is accepted.

The results of this study are in line with the results of research conducted by Rofiah [14] which explained that profitability influences the condition of the Fund Adequacy Ratio (RKD) of Bank ABC Pension Funds.

The Investment Cost Efficiency Variable (EBI) has a significance value of $>5\%$ which is equal to 0.7300, which shows the results of the study have not been able to support the hypothesis that Investment Cost Efficiency (EBI) affects the Fund Adequacy Ratio (RKD), with a positive direction coefficient of 0.03, so it can be concluded that the hypothesis is rejected.

The results of this study are in line with the results of research conducted by Anggraeni [6] who argue that Investment Cost Efficiency (EBI) does not always affect the Fund Adequacy Ratio (RKD). Research conducted by Bikker and Lecq [15] also argues that investment costs do not have a significant effect on funding, especially on pension funds with large asset values.

The Operational Cost Efficiency variable (EBO) has a significance value of $>5\%$ which is equal to 0.6315, which shows the results of the study have not been able to support the hypothesis that Operational Cost Efficiency (EBO) affects the Fund Adequacy Ratio (RKD), with a negative coefficient of -3.87, so it can be concluded that the hypothesis is rejected.

The results of this study are in line with the research conducted by Irdawati [16] which concluded that the ratio of Banking Operational Costs (BOPO) did not affect the Capital Adequacy Ratio (CAR) of commercial banks in Indonesia.

The Assets Growth (Paset) variable has a significance value of $<5\%$ which is equal to 0.0000, which means it shows the results of the study supporting the hypothesis that asset growth has an effect on the Fund Adequacy Ratio (RKD), with a positive direction coefficient of 0.76 so that it can be concluded that the hypothesis is accepted.

The results of this study are in line with the research conducted by Broeders, Van Oord and Rijsbergen [17] who concluded that the scale of assets affects the return on investment and its obligations, as

well as the research conducted by Avanza, Henriksen and Wonk [18] which explains that assets are influential against liability (RKD). In other research by Waluyo [20], asset growth affects the level of debts due to the increasing confidence of external parties.

CONCLUSIONS

Based on supporting data that has been obtained, collected, processed and analyzed, researchers can obtain several conclusions, namely:

- Return on Investment (ROI) has an effect on the Fund Adequacy Ratio (RKD) with the dimension of investment income that affects the value of assets (wealth) for funding.
- Return on Assets (ROA) has an effect on the Fund Adequacy Ratio (RKD) with the dimensions of net income and total assets on Return on Assets (ROA) that affect the increase in asset value (wealth) for funding.
- Investment Cost Efficiency (EBI) in this study does not affect the Fund Adequacy Ratio (RKD) because the high investment cost dimension does not always adversely affect the Fund Adequacy Ratio (RKD), because investment returns are expected to be commensurate with the investment costs incurred.
- Operational Cost Efficiency (EBO) has no effect on the Fund Adequacy Ratio (RKD) because the operational cost dimensions are generally assumed in the Annual Work Plan & Budgeting and Investment Plan of Pension Fund (RKA & RI), so as long as the costs incurred accordingly will not affect the results of the business, the value of assets (wealth) and the Fund Adequacy Ratio (RKD) that have been set.
- Assets Growth (Paset) influences the Fund Adequacy Ratio (RKD) because most assets owned by Pension Fund are investment assets which if managed properly with risk assessment will be able to generate high investment returns and be able to increase assets (wealth) for funding to be fulfilled (fully funded).

Research Implications

Implications or suggestions related to research carried out to interested parties as follows:

1. For Pension Fund Managers

Pension Fund Managers must be professional in compiling and selecting the right investment instruments along with risk assessment, and able to supervise and control costs according to established Work Plan & Budgeting and Investment Plan (RKA & RI), so that funding assets can be maintained and the target of Fund Adequacy Ratio (RKD) can be achieved.

2. For Regulator

The Financial Services Authority (OJK) can make policies that help facilitate and expand the

pension fund's space to invest in the capital market and be able to maintain and protect the continuity of the Employer Pension Fund (DPPK) Defined Benefit Pension Program (PPMP) as a legal entity established under the Law No. 11 of 1992.

Limitations and Suggestions for Future Research

Limitations in this study are:

- The independent variables used in this study are limited to Profitability, Cost Efficiency and Assets Growth, so it is possible to have other independent variables that affect the dependent variable which are not discussed in this study.
- The object of the study is limited to the Employer Pension Fund (DPPK) of the Defined Benefit Pension Program (PPMP) registered in the Financial Services Authority (OJK) as of July 2017, with criteria that comprise 12 Pension Funds with this research period of 4 (four) year namely 2013-2016 with the type of entity that provides limited data, so that the next researcher can extend the research period and add research objects so that the sample data obtained becomes more numerous.

REFERENCES

1. Sartono, A. (2010). *Manajemen Keuangan Teori dan Aplikasi*. Yogyakarta, BPFE.
2. Fahmi, I. (2017). *Analisis Kinerja Keuangan*. Bandung: Alfabeta.
3. Kadarisma dan S. Wahyuni. (2010). *Manajemen Dana Pensiun Indonesia*. Jakarta: Mediantara Semesta.
4. J. Jusuf. (2014). *Analisis Kredit untuk Account Officer*. Jakarta: PT Gramedia..
5. Hartono, J. (2015). *Teori Portofolio dan Analisis Investasi*. BPFE Yogyakarta.
6. Anggraeni, K. A. (2012). Analisis Kinerja Keuangan dan Rasio Kecukupan Dana pada Dana Pensiun Pemberi Kerja Manfaat Pasti di Indonesia. *Jurnal Ilmu & Riset Akuntansi*, 1(11).
7. Brigham, E. F., & Houston, J. F. (2012). *Dasar-dasar manajemen keuangan*. Jakarta: Salemba Empat.
8. Sutrisno. (2013). *Manajemen Keuangan*. Yogyakarta: Ekonisia.
9. Sharasanti, D. A., & HP, R. (2017). Analisis Penilaian Kinerja Keuangan Pada Dana Pensiun Universitas Surabaya. *Jurnal Bisnis Terapan*, 1(1), 1-12.
10. Sugiyono. (2014). *Memahami Penelitian Kualitatif*. Bandung: Alfabeta.
11. Ghozali, I. (2016). *Aplikasi Analisis Multivariate Dengan Program IBM 23 SPSS*. Semarang: BPFE Universitas Diponegoro.
12. Wati, L. N. (2017). *Metodologi Penelitian Bisnis Terapan Aplikasi SPSS, EViews, Smart PLS, dan AMOS*.
13. Setiawan, H., Siregar, H., & Anggraeni, L. (2015). Optimalisasi Kinerja Portofolio Investasi (Studi Kasus pada Dana Pensiun Pertamina). *Jurnal Aplikasi Manajemen*, 13(4), 557-565.
14. Rofiah. (2012). *Analisis Rasio Likuiditas, Solvabilitas, Aktuaria dan Profitabilitas pada DP Bank ABC*. Repository Universitas Gunadarma, 05-03-2012.
15. Alserda, G. A., Bikker, J. A., & Van Der Lecq, F. S. (2018). X-efficiency and economies of scale in pension fund administration and investment. *Applied Economics*, 50(48), 5164-5188.
16. Irdawati. (2018). Pengaruh faktor fundamental mikro terhadap Capital Adequacy Ratio (CAR) (Study pada Bank Umum Indonesia yang tercatat di Bursa Efek Indonesia tahun 2011-2015). *Jurnal Program Pascasarjana Universitas Haluoleo, Indonesia*.
17. Broeders, D. W., van Oord, A., & Rijsbergen, D. R. (2016). Scale economies in pension fund investments: A dissection of investment costs across asset classes. *Journal of International Money and Finance*, 67, 147-171.
18. Benjamin, A., Lars, F., Henriksen, B., & dan Bernard, W. (2016). On the Distribution of Exedents of Funds with Assets and Liabilities in Presence of Solvency and Recovery Requirements. *UNSW Business School Working Paper No. 2016ACTL03, 15 Desember 2016*.
19. Rolanda, Ivo dan Kurniasih, A. (2017). Analisis Portofolio Optimal: Pendekatan Mean Variance (Studi Kasus pada DPLK Muamalat). *Firm Journal Of Management Studies Vol.2, No. 1. 2017*.
20. Waluyo.(2018). Do Efficiency of Taxes, Profitability and Size of Companies affect Debt? A Study of Companies Listed in the Indonesian Stock Exchange. *European Research Studies Journal Vol.XXI, Issue 1, 2018*.
21. Jensen, M. C., & Meckling, W.H. (1976). Theory of the Firm : Managerial Behaviour, Agency Cost and Ownership Structure. *Journal of Financial Economics*, 3(4), 305-360.