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The Determinants Factor of Dividend Payout Ratio: an Empirical Study of Bank Buku IV in Indonesia

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ABSTRACT

When it comes to business, for both corporation and shareholders expect a positive return of the investment. Showing profit until paying-out dividend as an indicator of healthy financial performance from banking or non-banking sector will be a proper way to communicate and build positive sentiment to the stakeholders. This study examines the influence variables of financial profitability, risk, collectability and liquidity to determine whether it affects to the dividend policy. By using the panel regression technique with Fixed Effect Model to the Buku IV commercial banks listed in Indonesia Stock Exchange (IDX) of 10 years period from 2010 to 2019 can assess if all the factors significantly or not to the dependent variable of dividend payout ratio. The research distinguishes positive correlation of the profitability and risk factors, not so significant result on the collectability factor and no correlation to the dividend payout ratio. Those factors are represented by independent variables of Net Interest Margin (NIM), Return on Asset (ROA), Capital Adequacy Ratio (CAR), Non-performing Loan (NPL), Loan to Deposit Ratio (LDR). The result indicates that some of the independent variables strongly determine the dividend payout ratio of the banks.

1. Introduction

Today, Indonesia as one of the largest developing country in Asia has stand strong on the economy fundamental indicator compare to the past 10 years. The domestics consumption and businesses are indeed growing which therefore forms a steady foundation rooted from the middle to high level living stadard of the folks and society. The group of people play an important role to drive the economy growth. Many of the are participating in stock market as local investors.

Banking industry itself has become the primary sector which deliberate substantial economy foundation and performed reliable business reprenstation to the people and the world for it reflects the condition of its country of a prudent doing business or investment in the market place. And consequently, the people who plays in the stock market will look up to the corporation sector which is well performed and respectfully transparent in running the business that eventually generates profit in return.

As of January 2019, there are 7 banks in Buku IV. There are BBCA, BMRI, BBRI, BBNI, BNGA, PNBN and BDMN but for the research data, the author excludes the BDMN and PNBN. BDMN has just classified in Buku IV in 2019 due to capital injection as a result of merger with BNP Bank while PNBN has never distributed the cash dividend. The banks in Buku IV classification are relied upon to have more stable and consistent performance compared to the Buku III banks. In this way the used research data is more comprehensive yet limited for a further study with some cairables form those banks in the previous 10 years.

Data is coming the from the financial statement of Buku IV classification given by Bank of Indonesia (BI) which are listed in Indonesia Stock Exchange, 10 years period of 2019 to 2019 with main criteria as follows:

a. Total core capital above IDR 30 trillion,
b. The banks can enter both domestic or off-shore
c. The maximum of ownership for the equity investment is 35%

The discussion of this study is to characterize the main factors of dividend payout policy of banking sector in Indonesia. It is more to examine the actualization of dividend payout and its determintation variables of the financial profitability, safety or risk and efficiency. The resulut of this study provides input to the decision making of top management or else to the investors on what factors are significantly important in the payment of dividend, in order to meet the expectation of the shareholders. Therefore there is some need to test if the dependend variables of Dividend Payout Ratio (DPR) of banks Buku IV in Indonesia has correlation with the following independend variables of:

a. Net Interest Margin (NIM)
b. Capital Adequacy Ratio (CAR)

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c. Loan Deposit Ratio (LDR)
d. Return on Asset (ROA)
e. Non-Performing Loan (NPL)

2. Literature Review

According to Sheffrin Steven M (2003) a dividend is distribution of profit to the shareholders. It is paid or distributed to the shareholder if the company books amount of profit. Houston Chronicle (2019) mentioned that the dividend received by the investor is the income which is subject to income tax. The tax implication of this income is considerably different among countries. The corporation does not receive a tax deduction for the dividends it pays.

The dividend payout ratios is the proportion of total amount of dividend paid out to investors comparative with the net income of the company. It is the level of income delivered to investors in profits. The sum amount that is not paid to the investors is held by the firm to deal with commitment or to re-invest in core activities. It is now and again essentially alluded to as the 'payout ratio'. The dividend payout ratio offers a hint of how much money a company is getting back to investors versus the amount it is keeping to re-invest in development, covering of the obligation, or add to cash holds Adam Hayes (2020)

Ho (2003) mentioned that risk negatively affects dividend payout in Japan yet additional relied upon benefit, size, liquidity, influence, assets blend. Additionally, Aivazian et al. (2001) affirmed that dividend payout is influenced by obligations and risk. The fundamental risk with obligation is non-performing loans. Gil et al. (2010) found that dividend payout depends on sales, profit, tax and debts to equity ratio. Berger and DeYoung (1997) confirmed that performance of banks is related to the quality of asset (loan management) which leads to dividend payout decisions.

Andrew Bloomenthal (2020) stated that Net interest margin (NIM), the measurement that supports prospective investors to decide whether to invest in a given financial services firm by providing visibility into the profitability of their interest income versus their interest expenses. As written by Adam Hayes (2020) that Capital Adequacy Ratio (CAR) is a critical principal to ensure that banks have enough cushion to cover a reasonable amount of any lapse before insolvent and subsequently lose investors' assets occurred. The capital sufficiency guarantee the proficiency and stability of a country's fundamental economy of its financial system by decreasing the risk of bankruptcy of the banks. All in all, a bank with high capital adequacy ratios is considered safe and likely to meet the financial obligation. Alfer and Anber (2011) analyzed that assets size and non-interest income have a positive and critical impact on bank profitability (ROA). Hendley (2010) mentioned that NPL as is an important indicator of banking crisis alert as it influences the nation economy growth by decreasing credit development. The incremental drift of NPL will alter the efficiency of banking that resulting in banking crisis Vouldis and Louzis (2018). Berg (2010) describes financial model of relationship between loans and deposits. The approach is that deposits can create loans, when deposit grows funding improves the liquidity position of banks where they have room to extend loans (loans are the monetary counterpart of deposits). On the other side, bank loans tend to create deposits from funds received by borrower which will end up in a deposit, either in the account of the borrower or in the account of his counterparty who receives a payment.

3. Research Model & Methodology

In this section causes the author to choose her way to examine the model by utilizing the information relapse with FEM (Fixed Effect Model) and REM (Random Effect Model). For the panel data analysis, various types of models are available such as those two mentioned plus the CEM (Common Effect Model) which is one of the simplest models that ignore the effect of individual bank and time with the assumption that all individual banks are homogenous, and their nature is the same over time Gujarati and Dawan (2015)

There are six factors which affect the dividend payout ratio. This research focuses on those factors which involve some variables as predictive correlation.

Equation of the research model:

$$DPR = \propto + \beta_1 NIM_{i,t} + \beta_2 CAR_{i,t} + \beta_3 NPL_{i,t} + \beta_4 ROA_{i,t} + \beta_5 LDR_{i,t} + \varepsilon$$

$$NIM = \frac{Interest\ Income - Interest\ Expense}{Loan\ Portfolio}$$

$$CAR = \frac{Tier\ 1 + 2\ Capital}{Risk\ Weighted\ Assets}$$

$$Risk = \frac{Non\ Performing\ Loan}{Total\ Gross\ Loan}$$

$$Profit = Return\ on\ Asset = \frac{Net\ Income}{Total\ Assets}$$

$$LDR = \frac{Loan}{Third\ Party\ Liabilities\ (CA + SA + TD)}$$

Where:

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$\propto = Constanta$
$\beta 1 - \beta 5 = Regression\ coefficients\ for\ independent\ variables$
$\varepsilon = Standard\ Error$
NIM = Net Interest Margin
CAR = Capital Adequacy Ratio
LDR = Loan to Deposit Ratio

3.1 Result of Research

This research examines from both independent and dependent data. The dependent variable is DPR while the independent data are NIM, CAR, LDR, NPL and ROA. The unit observations are BBCA, BBNI, BBRI, BMRI are the significantly largest among all.

Table 1.
Descriptive Statistics

	DPR	CAR	NIM	ROA	NPL	LDR
Mean	0.256081	0.192451	0.069314	0.025588	0.021363	0.915877
Median	0.247900	0.196600	0.064700	0.024800	0.022100	0.897300
Maximum	0.470600	0.258100	0.107700	0.040000	0.042800	1.375600
Minimum	0.062900	0.127000	0.051000	0.013300	0.003800	0.560800
Std. Dev	0.084714	0.033282	0.014912	0.006947	0.009150	0.181444
Skewness	0.384951	-0.243396	0.906062	0.635297	-0.059632	0.674962
Kurtosis	3.445603	2.227408	2.784589	2.640703	2.979768	3.031387
Jarque-Bera	1.417768	1.494014	5.966593	3.123774	0.026218	3.266709
Probability	0.492193	0.473782	0.050626	0.209740	0.986976	0.195273
Sum	11.01150	8.275400	2.980500	1.100300	0.918600	39.38270
Sum Sq. Dev.	0.301411	0.046524	0.009340	0.002027	0.003516	1.382728
Observations	43	43	43	43	43	43

Source: E-views11 Student version

Using panel regression model with some exercise and iteration, FEM is the model that the author uses to do the analysis and to get the best estimation technique in a panel data setting that allows one to control for time-invariant unobserved individual characteristics that can be correlated with the observed independent variables.

The author also runs the testing along the research using Chow Test that evaluates which one most stable model data panel between CEM and FEM. Haussman Test that evaluates the consistency of appropriate model between FEM or REM. Also, the classical assumption testing of each Histogram Normality test to ensure the data is distributed normally, Multicollinearity test to check if the model includes multiple factors that are correlated not just to the response variable, but also to each other, Heteroscedasticity to test if there is similarity variance of the residual observed variables and Auto-correlation.

Subsequently, the author performs the hypothesis testing from result of the FEM panel regression, analyze the coefficient determination (R-Squared) to measure the proportion of the variance for a dependent variables that's explained by an independent variable or variables in a regression model. Whereas correlation explains the strength of the relationship between an independent and dependent variable, R-squared discloses how much the change of one variable clarifies the fluctuation of the subsequent variable. And also performs the partial testing and analysis on each variable to determine the better sign of the full model than the reduced model.

Based on the hypothetical test using the dependent variable of dividend payout ratio and independent variable of net interest margin, non-performing loan ratio, loan to deposit ratio, capital adequacy ratio and return on asset ratio that computing in software Eviews11 Student version with panel regression model, it determined that Fixed Effect is the most suitable model for the research. The result study from the research of each variables could be explained that NIM and CAR have significant influence to DPR. ROA and NPL also have positive correlation to DPR while LDR at alpha 0.5 has negative influence towards DPR, at alpha 0.6 LDR has positive correlation with DPR.

Dependent Variable: DPR
Method: Panel Least Squares
Date: 01/19/21 Time:08:59
Sample: 2010 2019
Periods included: 10
Cross-sections Included: 5
Total panel (unbalanced) observations: 43

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Table 2.
Fixed Effect Model Result

Variable	Coefficient	Std. Error	t-Statistics	Prob.
C	0.365710	0.119088	3.070924	0.0043
NIM	-3.475788	1.575719	-2.205843	0.0345
CAR	1.055198	0.446164	2.365043	0.0241
ROA	-10.21580	2.118995	-4.821061	0.0000
NPL	1.242050	2.357641	0.526819	0.6018
LDR	0.178070	0.151003	1.179246	0.2467
Effects Specification				
Cross-section fixed (dummy variables)				
Root MSE	0.047405		R-squared	0.679405
Mean dependent var	0.256081		Adjusted R-squared	0.591969
S.D. dependent var	0.084714		S.E of regression	0.054113
Akaike info criterion	-2.795064		Sum squared resid	0.096631
Schwarz criterion	-2.385482		Log likelihood	70.09387
Hannan-Quinn criter.	-2.644023		F-statistic	7.770386
Durbin-Watson stat	1.642957		Prob (F-statistic)	0.000005

Source: Output data panel regression result of Eviews 11 Student Version

Based on table 2, the hypothetical result shows that t-table value with real ratio of 5%; df = n-k-l = 43 that df = 43-5-1 = 37 then the t-table value is 3.070924, based on the assumption data then:

a. Net interest margin has t-count of -2.205843, that -2.205843 < 3.070924 then t-count < t-table with probability of 0.0345 < 0.05, which means net interest margin strongly influences dividend payout ratio. Based on the hypothetical, if it considers that net interest margin determines the dividend payout ratio then it is accepted.
b. Capital Adequacy Ratio has a t-count of 2.365043, that 2.365043 < 3.070924 then t-count < t-table with probability of 0.0241 < 0.05, which means capital adequacy ratio influences dividend payout ratio. Based on the hypothetical, if it considers that capital adequacy ratio determines the dividend payout ratio then it is accepted.
c. Loan to deposit ratio has t-count of 1.179246, that 1.179246 > 3.070924 then t-count < t-table with probability of 0.2467 > 0.05, which means loan to deposit ratio does not influence dividend payout ratio. Based on the hypothetical, if the loan to deposit ratio determines the dividend payout ratio then it is not significant influenced
d. Return on Asset ratio has t-count of -4.821061, that -4.821061 < 3.070924 then t-count < t-table with probability of 0.0000 < 0.05, which means return on asset ratio strongly influences dividend payout ratio. Based on the hypothetical, if it considers that return on asset ratio determines the dividend payout ratio then it is accepted.
e. Non-performing loan has t-count of 0.526819, that 0.526819 > 3.070924 then t-count < t-table with probability of 0.6018 > 0.05, which means non-performing loan not significant influences dividend payout ratio. Based on the hypothetical, if it considers that a non-performing loan determines the dividend payout ratio then it is not accepted with alpha 0.06.

3.2 Classic Assumption Testing

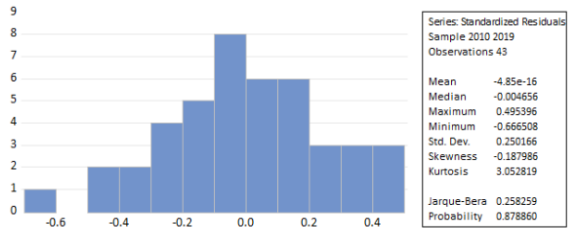

Fig 1. Histogram Normality Test Result
Source: Output data panel regression result of Eviews 11 Student Version

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Based on Figure 3, Jarque-Bera Probability indicates value >0.5, it means the distribution is normal. In the opposite, if the
probability value shows <0.5 then it is rejected because the distribution is considered not normal.

Table 3.
Multicollinearity Test Result

	CAR	NIM	ROA	NPL	LDR
CAR	1.000000	0.128562	0.012447	0.204075	0.450164
NIM	0.128562	1.000000	0.303639	-0.014470	-0.014998
ROA	0.012447	0.303639	1.000000	-0.716103	-0.443755
NPL	0.204075	-0.014470	-0.716103	1.000000	0.425674
LDR	0.405164	-0.014998	-0.443755	0.425674	1.000000

Source: Output data panel regression result of Eview 11 Student Version

Based on table 3 the independent variable of net interest margin, capital adequacy ratio, loan to deposit ratio, non-performing loan and return on asset do not have multicollinearity problematic because the VIF <10, therefore it means that those variables can be used for this research.

Table 4.
Heteroscedasticity Panel Cross-Section Test

Panel Period Heteroskedasticity LR Test
Specification: CAR DPR LDR NPL ROA NIM C
Null hypothesis: Residual are homoscedastic

Likelihood ratio	Value	df	Probability
	7.512323	6	0.2761

LR test summary:

	Value	df
Restricted LogL	116.7554	47
Unrestricted LogL	110.5116	47

Source: Output data panel regression result of Eview 11 Student Version

Based on table 4, there is probability chi-square of the Obs*R-squared > 0.05 as of 0.2761 >0.05 of probability value results that it is accepted, therefore it concluded there is no heteroscedasticity found in both series and period.

Dependent Variable: DPR
Method: Panel Least Squares
Date: 01/19/21 Time:08:59
Sample: 2010 2019
Periods included: 10
Cross-sections Included: 5
Total panel (unbalanced) observations: 43

Table 5.
Auto-correlation Diagram Result

Variable	Coefficient	Std. Error	t-Statistics	Prob.
C	0.365710	0.119088	3.070924	0.0043
NIM	-3.475788	1.575719	-2.205843	0.0345
CAR	1.055198	0.446164	2.365043	0.0241
ROA	-10.21580	2.118995	-4.821061	0.0000
NPL	1.242050	2.357641	0.526819	0.6018
LDR	0.178070	0.151003	1.179246	0.2467

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Variable	Coefficient	Std. Error	t-Statistics	Prob.
Effects Specification				
Cross-section fixed (dummy variables)				
Root MSE	0.047405		R-squared	0.679405
Mean dependent var	0.256081		Adjusted R-squared	0.591969
S.D. dependent var	0.084714		S.E of regression	0.054113
Akaike info criterion	-2.795064		Sum squared resid	0.096631
Schwarz criterion	-2.385482		Log likelihood	70.09387
Hannan-Quinn criter.	-2.644023		F-statistic	7.770386
Durbin-Watson stat	1.642957		Prob (F-statistic)	0.000005

Source: Output data panel regression result of Eviews 11 Student Version

Based on the table 5 it shows that there is no auto-correlation because DL < DW > DU and DL < (4-DW) > DU. Where DW is 1.6429, DL is 1.7794 and DU is 1.2260. DU and DL numbers are refer to the Dublin Watson table.

4. Conclusion

Based on the result of this research there are factors of profitability, efficiency ratio and risk factors of the banking sector that are represented by independent variables of net interest margin, capital adequacy ratio, loan-to-deposit, return on asset ratio and non-performing loan. Of all those variables, some of them determine the dependent variable of dividend payout ratio to the Buku IV Banks listed in Indonesia Stock Exchange, period of 2010 to 2019. BNGA is significantly the smallest compare to BBCA, BBRI, BBNI and BMRI.

Using panel data regression, the author tried to find the most suitable panel regression model to do the research using CEM, and FEM. Based on Chow testing, FEM is the most suitable to do analysis with the model. The author was also checking on the data observation whether it was normal and well distributed as the based research data. There is classical assumption testing, using 4 types of experimental testing to ensure it:

a. Normality Test
b. Multicollinearity Test
c. Heteroscedasticity Test
d. Auto-correlation Test

In summary, the determinants variables to dividend payout ratio significantly result in the variables of net interest margin, capital who distributed dividends from 2010 to 2019.

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