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## Article

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International Journal of Energy Economics and Policy

#### Provided in Cooperation with:

International Journal of Energy Economics and Policy (IJEEP)

*Reference:* Silalahi, Amlys Syahputra/Fachrudin, Khaira Amalia et. al. (2021). Analysis of the bank specific factors, macroeconomics and oil price on dividend policy. In: International Journal of Energy Economics and Policy 11 (2), S. 165 - 171.

<https://www.econjournals.com/index.php/ijeeep/article/download/10676/5718>.

doi:10.32479/ijeeep.10676.

This Version is available at:

<http://hdl.handle.net/11159/8184>

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# Analysis of the Bank Specific Factors, Macroeconomics and Oil Price on Dividend Policy

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**Received:** 16 September 2020

**Accepted:** 28 December 2020

**DOI:** <https://doi.org/10.32479/ijeeep.10676>

## ABSTRACT

The purpose of this study is to find variables that can influence dividend policy using the dividend payout ratio variable. The factor used is debt policy, credit risk, capital adequacy ratio, life cycle, capital structure, Inflation, growth domestic product, unemployment and oil price. The data of this study are 14 banks in Indonesia from 2009-2018. The test method of data is using panel data regression. The results of this study, there are 4 variables that affect dividend policy, namely credit risk, capital structure, inflation and oil prices. While other variables do not have a significant effect on credit risk. The results of variable oil prices are different from previous studies because the subject of this study is banking. Where the increase in oil prices can have a positive impact on dividend policy in the mining industry, but have a negative impact on the banking industry.

**Keywords:** Dividend Policy, Bank Specific Factors, Macroeconomics, Oil Price

**JEL Classifications:** C1, E6, G21, Q41

## 1. INTRODUCTION

The founding of a company has a purpose, the main objective of the company is to maximize shareholder wealth. This purpose can be realized by maximizing the company's market value (Jensen and Meckling, 1976). So that the shareholder wealth can come from dividend and capital gain. Dividend policy is a company's decision to share profits by allocating it in the form of dividends to shareholders, because the policy is carried out to increase company value. Previous study, dividend distribution is still a debate. In several studies debating about dividend policy that can increase firm value. What is the optimal amount of dividend that must be paid by the company? Do dividends affect company value or vice versa? These study questions are some of the important things for companies to manage company finance and dividends.

Each company has a different dividend policy, including a constant payout ratio dividend policy, a residual dividend policy and a

regular low dividend policy with extra dividend (Brigham and Houston, 2012). In previous study has also tried to find optimal dividend value in several company sectors by involving several variables. The dividend payment variable is influenced by the type of investor and the company's cash reserves. The more investors in the company's stock are risk averse, the lower the dividends to be paid (Akyildirim et al., 2014). Other studies consider company profitability factors, company growth, and investment growth opportunities in the future (Hagen, 1973; Décamps and Villeneuve, 2007; Reppen et al., 2020).

Apart from company factors, it is also important to consider the company's external factors in dividend distribution. Because a country's financial policies can have an impact on company performance. Khan et al. (2018) said that macroeconomic variables are variables outside the company's control that must be considered in determining company policy, including dividend policy. The most crucial macroeconomic variable is inflation. The inflation rate

has a direct relationship with the interest rate. If the inflation rate increases, the interest rate decreases and investors must have idle funds in the stock market. Inflation shows the management of the government economy as well as provides evidence of the stability of the local currency. High inflation countries are associated with high uncertainty (Demirgüç-Kunt and Maksimovic, 1996).

Apart from inflation, GDP growth represents the market value of all goods and services produced in a country over a certain period of time. When the real economic activity of the economy increases, it leads to an increase in the corporate income of various companies, which in turn leads to an increase in the dividend payout ratio (Ghafoor et al., 2014). According to Mehmood and Carter (2012) GDP is a measure of economic growth. According to (Jan et al., 2014) GDP is used to show the country's overall performance and has a negative relation with financial leverage. Higher GDP growth rates attract investors to invest their funds in that economy, and that in turn leads to venture funds (Gompers and Lerner, 1998). The growth rate of an economy's gross domestic product is a measure of the growth opportunities available to company in the economy. For the individual company level, the growth rate is a proxy for the set of investment opportunities faced by the company (Smith Jr and Watts, 1992).

Apart from inflation and GDP, the unemployment rate is also a problem for a country. In simple terms, unemployment means that people do not have a job. According to the International Labor Organization 1982 resolution, a person can be said to be unemployed if he is without a job, is available for work and looking for work. The unemployment rate is high when the economy is in recession.

Apart from factors inside the company (microeconomics) and factors outside the company (macroeconomics), other factor that can also be considered in dividend payment policies is international factor. This factor can also have an impact on economic stability in a country and of course companies in that country. The factor that can affect the stability of a country is the world crude oil price factor. Chortareas and Noikokyris (2014) found that the volatility of world oil prices or the shocks of ups and downs of world oil prices can have an effect on dividend policy in the US. This study is appear because of the decomposition based on the Campbell and Vuolteenaho framework (2004). A positive relation between rising oil prices and dividend yields emerges, the persistence of which depends on news that drives higher oil prices.

Other study in Indonesia is limited to the factors that influence dividend policy in the banking sector. A significant factor affecting dividend policy in Indonesia in the banking sector is the ratio of debt to equity (Jalung et al., 2017). Based on that arguments and the limited study that seeks to find the optimal dividend value in the banking sector, this study topic becomes important for the development of the dividend policy literature. Previous study in Indonesia was only limited to the banking sector, because the banking sector is one of the sectors that distributes dividends regularly. The banks that distribute dividends each period include Bank BNI, Bank BRI, Bank Mandiri, and BCA. These banks distribute dividends at a ratio of 25%, 50%, 45% and 32.40% of the profits earned in 2018.

Bank Indonesia even give a warning to the bank to prioritize the capital adequacy ratio and the ratio of non-performing loans. Dividend distribution with a high ratio can reduce the portion of the Bank's capital. Bank Indonesia and the Financial Services Authority (OJK) have plans to issue policies related to dividend management in banks listed on the Indonesia Stock Exchange. The variables that need to be considered in determining the dividend payout ratio are the sufficiency of funding and the growth in the ratio of third party's funds as bank credit expansion. Therefore, it is necessary to do the study that can formulate the optimal dividend value which can be a policy recommendation for Bank Indonesia and the Financial Services Authority, because on the one side dividend payments can attract investors' interest but on the other side it will have an impact on decreasing the share of capital and opportunities for expansion credit.

From the explanation above, it is found the formulation of the problem, are the company's internal factors (bank specific factors) can influence dividend policy in Indonesian banking? Can the external (macroeconomic) factors influence dividend policy in Indonesian banking? And can international factors (world crude oil prices) influence dividend policy in Indonesian banking? Therefore, this study aims to find variables that can influence dividend policy using the dividend payout ratio (DPR) variable.

## 2. LITERATURE REVIEW

The theory of dividend policy is still a controversy today. First, dividend policy is irrelevant to company value. According to Miller and Modigliani (1961) who stated that in a perfect market (where there are no fees and taxes in it) shareholders are still indifferent between dividends and capital gains. Also, what determines the increase in company value is the ability to create positive cash flow, not dividend payments. Second, dividend policy is relevant to company value. According to Gordon and Lintner (1963) dividend payments have an impact on increasing the value of the company, where risk averse shareholders prefer dividends than capital gains. It further argues that profitable companies that pay consistent dividends have a competitive advantage because they have easy access to the capital market.

Several previous studies also examined the factors that influence dividend policy. From internal factors, external factors to international factors. In this study the study subjects were carried out in banking. Internal factors are examined using bank specific factors. Previous study such as Al-Twaijry (2007), Deshmukh et al. (2013) Strebulae and Yang (2013) revealed debt policy factors using debt equity ratio (DER). Find out that the liability policy has a negative effect on dividend payment policy. So, the higher the debt that is used as a business growing in a company, the lower the dividend payments. Because the company will pay more interest than its profits. Furthermore, credit risk factors at banks are seen through non-performing loans (NPL). Ahmad and Muqaddas (2016) found that credit risk also has a negative effect on dividend policy. The higher the risk happen to banks, the lower the dividend payment policy taken.

Then, the capital factor, there are 2 types used in this study, namely the capital ratio and capital structure. According to Manuel Munaz (2019) there is no influence between the capital adequacy ratio (CAR) on dividend policy. This is because each bank has a standardized capital adequacy ratio. In Indonesia, the minimum CAR is set by Bank Indonesia at 20%, so the bank cannot be less or more than that. If it is insufficient, banking stability will be disrupted, if it is more, the bank's performance will be less optimal. Meanwhile, the capital structure using a third-party fund has a negative effect on dividend policy because if the debt capital structure is larger than capital, the dividends to be paid will be lower (Manos, 2001). Another bank specific factor by previous study is the life cycle of the company using the market to book value (MBV). Baker and Powel (2012), Rehman and Takumi (2012), Perretti et al. (2013), Elly and Hellen (2013), Yarram and Dollery (2015), Dewasiri et al. (2019) reveal that the theory of life cycle has a negative effect on dividend policy.

The external factors that have been studied by many previous studies are inflation, GDP and unemployment. Elly and Hellen (2013) that inflation has a positive effect on dividend policy. According to Khan et al. (2018), dividend policy is not influenced by inflation and GDP. Meanwhile, according to Basse and Reddemann (2011) inflation and GDP have a negative effect on dividend policy. The difference in the results of this study is due to differences in the countries sampled and the year the samples were taken. If inflation has a negative effect, dividend policy can be paid when inflation is low. If GDP has a positive effect, this means that dividend policy can be paid when a country's economic growth is rising. Unemployment has a positive effect on dividend policy according to Singh et al. (2011) and Khan et al. (2018).

In addition, world oil price shocks can affect banking performance through an increase in loans related to oil companies, business activities related to oil or liquidity reserves (Effendi, 2019). If the performance of banks in a country is disrupted, dividend policy will also be a serious consideration. Are financial companies such as banks able to pay dividends or not. Thus, the banking industry can also be affected by the volatility of oil prices. Previous study that has examined this is Chortareas and Noikokyris (2014) saying that there is a relation between an increase in oil prices and dividend yields. According to him, this relation depends on the news that pushes up oil prices. Previous study also conducted by Sim and Zhou (2015) and Raza et al. (2016) found that oil prices have a positive effect on dividend payment policies. This is because the subject in this study is directly on the oil company.

### 3. DATA AND METHOD

The objects of this study are Debt Equity Ratio - DER ( $X_1$ ), Non Performing loan - NPL ( $X_2$ ), Capital Adequacy Ratio - CAR ( $X_3$ ), Market to Book Value - MBV ( $X_4$ ), Third-party Fund - TPF ( $X_5$ ), inflation-CPI ( $X_6$ ), Gross Domestic Product-GDP ( $X_7$ ), Unemployment - UNEMP ( $X_8$ ), Oil Price - Oil ( $X_9$ ) and Dividend Payout Ratio - DPR (Y). The analysis used is regression analysis of data panel. The data in this study is secondary data which is banking financial statements contained in the respective website, as well as macroeconomic data obtained from the central statistical

agency and Bank Indonesia, and oil price from world bank data. The data were taken using annual data from 2009 to 2018. The data of this study are 14 banks in Indonesia. The test method of data is using the normality and multicollinearity test, data testing using panel data regression. This research uses an explanatory analysis. The tests above using econometrics with Eviews 10. In the panel data regression testing requires 3 steps, namely: Correlation test, Model Test and Regression. In the correlation test, the value between variables should be  $<0.8$  to be free from multicollinearity. Next is the model test, this is done to determine the best regression model. There are four regression model of panel data namely: Common effect, fixed effect, fixed effect with cross section weight and random effect. There are three test models named chow test, hausman test and lagrange multiplier test. Below is a hypothesis for model test:

- The first model is a chow test that is  $h_0$ : Common effect and  $h_a$ : Fixed effect.
- The second model is the test of that  $h_0$ : Random effect and  $h_a$ : Fixed effect.
- The third model is lagrange multiplier test that is  $h_0$ : Common effect and  $h_a$ : Random effect.
- If  $p > 0.05$  then accept  $h_0$  and if  $p < 0.05$  then reject  $h_0$ .

The next step is to read the results of the panel data regression which is the best model, whether it is common effect, fixed effect and random effect. But, if chow and hausman test result is fixed effect, lagrange multiplier test not required.

The analysis method in this study is illustrated in Figure 1.

The linear data panel model 9 independent variable can be represented as below:

$$y_{it} = \alpha_0 + \sum_{j=1}^k \alpha_j X_{j,it} + u_{it}$$

And implemented into the estimation equation as follows:

$$DPR = C(1) + C(2)*DER + C(3)*NPL + C(4)*CAR + C(5)*MBV + C(6)*TPF + C(7)*CPI + C(8)*GDP + C(9)*UNEMP + C(10)*OIL [CX=F]$$

### 4. ANALYSIS AND EXPLANATION

The summarizes of the correlation values for all the variables used. This test is performed to identify some variables that have high correlation with correlation value above 0.8. If there is a correlation value above 0.8, then inter variables occur multicollinearity.

Test results from Table 1 show that all variables have a correlation value below 0.8. This means that all variables are free from multicollinearity. If all variables are released from multicollinearity, the study can be continued.

Testing the first model is a test using Chow test. Test result shows that  $h_0$  is rejected so that the result obtained is a fixed effect model ( $P = 0.000$ ) better than the common effect model. Therefore,

Figure 1: Frameworks

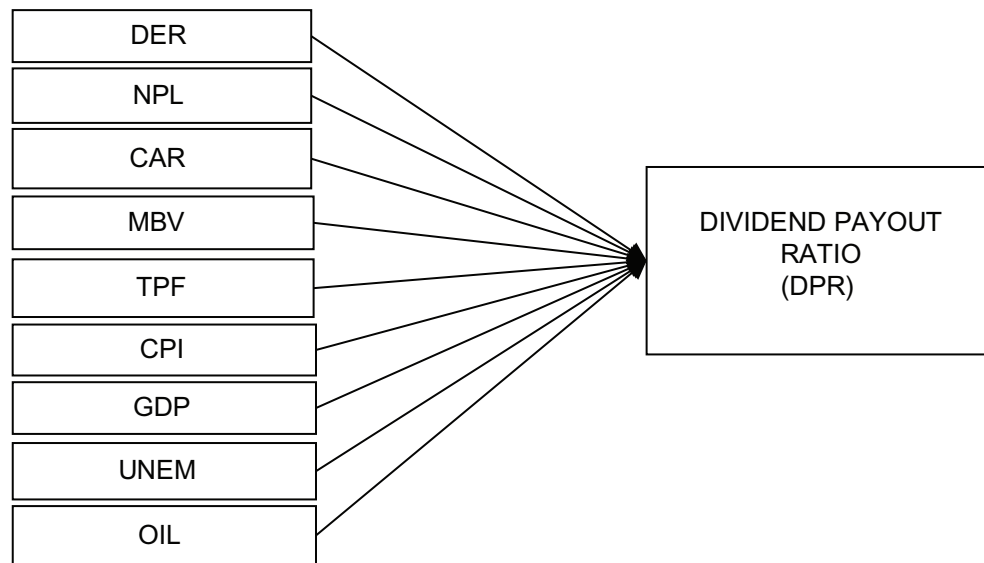


Table 1: Multicollinearity test

	DPR	DER	NPL	CAR	MBV	PDPK	CPI	GDP	UNEMP	OIL
DPR	1.000000									
DER	0.172539	1.000000								
NPL	0.009866	-0.026017	1.000000							
CAR	0.094096	-0.119727	0.131260	1.000000						
MBV	0.083536	0.064470	0.045071	0.002532	1.000000					
PDPK	0.157285	0.379693	0.096884	0.220066	0.242026	1.000000				
CPI	-0.059851	0.047349	0.007087	-0.231069	-0.167459	0.009131	1.000000			
GDP	-0.025205	-0.032615	-0.028657	0.073878	0.060790	0.086356	0.128150	1.000000		
UNEM	-0.075278	0.042273	-0.090160	-0.330700	-0.331106	-0.429382	0.259516	-0.306910	1.000000	
OIL	-0.066552	-0.031581	-0.002929	0.121735	0.074554	0.046507	-0.379637	-0.137362	-0.148692	1.000000

according to the results of Chow testing, the model used is a fixed effect model (Table 2).

The next model test uses the Hausman test in Table 3. The results indicate incompatibility with the previous test, i.e., ho accepted then the resulting result is a fixed effect model ( $p = 1.000$ ) is better than the random effect model.

If in the Chow and Hausman test are not align, then the next required test is Lagrange multiplier test. But, chow and hausman test result is fixed effect, lagrange multiplier test not required.

The estimation results in Table 4 are the results of panel data regression with the best choice model, namely fixed effect.

Table 4 is the result of testing panel data regression with the whole model. After passing the testing phase of the model is fixed effect model was chosen as the best model in this panel data regression test. Goodness of fit in this model is 0.533002 or 53.30%. This means that the nine independent variables such as debt policy (DER), credit risk (NPL), capital adequacy ratio (CAR), life cycle (MBV), capital structure (TPF), Inflation (CPI), growth domestic product (GDP), unemployment (UNEM) and oil price (OIL) affects dividen policy in indonesian banks by 53.30% while the other 46.7% is influenced by other factors. R-square is very

important in every research, but only limited to the informer how much influence the independent variable to the dependent variable.

The results of the analysis in Table 4 show that the variables that significantly influence dividend policy in Indonesian banks are credit risk and capital structure from the internal side of the company, the inflation rate from the external side of the company and the oil price from the international side. Meanwhile, the variable debt policy, capital adequacy ratio, life cycle, domestic product growth, and unemployment rate did not have a significant effect on dividend policy.

Credit risk (NPL) has a negative and significant effect on dividend policy. This research is in line with previous research, namely Ahmad and Muqaddas (2016) which found that credit risk also has a negative effect on dividend policy. The higher the risk experienced by banks, the lower the dividend payment policy that is taken. A non-performing loan is a measure of risk, it shows the debtor's ability to pay the contract interest plus principal payments to the bank concerned. In other words, it evaluates the efficiency of a bank in finding financially sound customers. Loan management is very important for the survival of the bank. An increase in the number of NPLs is a sign of bankruptcy and reduces the amount of profit for the bank. Banks with a lower NPL ratio to down payments/gross loans are believed to be safer and have less risk.



Dividend payment is inseparable from credit risk, which is one of the factors in considering dividend payments for shareholders.

Capital structure (TPF) has a negative and significant effect on dividend policy. This study is in line with Manos (2001) who found a negative influence between capital structure and dividend policy. The capital structure used in this study is a third-party fund, which is part of a bank's liabilities. If in financing its business, the bank uses more liabilities, the profits earned by the bank are more used to pay debts and interest to customers than to pay dividends to shareholders. So the more debt used, the smaller the dividends paid.

**Table 2: Chow test**

Redundant Fixed Effects Tests			
Equation: Untitled			
Test cross-section fixed effects			
Effects Test	Statistic	d.f.	Prob.
Cross-section F	9.021807	(13,117)	0.0000
Cross-section Chi-square	97.210111	13	0.0000

**Table 3: Hausman test**

Correlated Random Effects - Hausman Test			
Equation: Untitled			
Test cross-section random effects			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	9	1.0000

\*Cross-section test variance is invalid. Hausman statistic set to zero.

Inflation has a negative effect on dividend policy. This study is in line with Basse and Reddemann (2011) who found that inflation and GDP have a negative effect on dividend policy. This explains that high inflation can reduce dividend payments to banks in Indonesia. Oil price negatively affects dividend policy. In which dividend payments increase when the price of oil is low. This study contradicts previous research, namely Sim and Zhou (2015), Raza et al. (2016) Kusuma et al. (2018) which found positive results. This is due to previous research on the subject of mining. Which is the dividend payment will increase if the price of oil increases. According to McSweeney and Worthington (2008), oil price movements have a positive effect on the energy industry, while other industries such as banking, retail and transportation have a negative relation.

Debt policy, capital adequacy ratio, life cycle, domestic product growth, and unemployment rate did not significantly influence dividend policy. This study is not in line with Al-Twaijry (2007) Deshmukh et al. (2013) Strebulaev and Yang (2013) which states that debt policy factors have a negative effect on dividend policy. The higher the debt used as a business mover in a company, the lower the dividend payments made. Because the company will pay more interest than its profits. However, this study is in line with the results of Moon et al. (2015) and Kusuma et al. (2018) who found that debt policy has no effect on dividend policy. This is possible because companies with high debt ratios will get profits in the following year, while the current profits will be allocated to pay debt contracts that may be due. In addition, the distribution of company data with an average debt ratio of below 1 means that the company is able to manage its debt composition well. This is why debt policy has no effect on dividend policy.

**Table 4: Result of regression analysis**

Dependent Variable: DPR				
Method: Panel Least Squares				
Date: 09/13/20 Time: 07:05				
Sample: 2009 2018				
Periods included: 10				
Cross-sections included: 14				
Total panel (balanced) observations: 140				
Dependent Variable: DPR				
Method: Panel Least Squares				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DER	0.046907	0.179620	0.261144	0.7944
NPL	-2.703839	0.906743	-2.981925	0.0035
CAR	0.126496	0.709696	0.178239	0.8588
MBV	-0.000273	0.000209	-1.305364	0.1943
TPF	-0.620519	0.157657	-3.935871	0.0001
CPI	-5.144506	2.346257	-2.192644	0.0303
GDP	-1.402664	2.074818	-0.676042	0.5003
UNEMP	1.894936	4.396954	0.430966	0.6673
OIL	-0.558204	0.182843	-3.052907	0.0028
C	0.164138	0.495808	0.331052	0.7412
R-squared	0.533002	Mean dependent var		0.457143
Adjusted R-squared	0.445191	S.D. dependent var		0.499949
S.E. of regression	0.372389	Akaike info criterion		1.011349
Sum squared resid	16.22483	Schwarz criterion		1.494619
Log likelihood	-47.79443	Hannan-Quinn criter.		1.207735
F-statistic	6.069845	Durbin-Watson stat		1.148156
Prob(F-statistic)	0.000000			

Furthermore, Manuel Munaz (2019) found that there was no influence between the capital adequacy ratio (CAR) on dividend policy. This is in line with the results of this study because each bank has a standard capital adequacy ratio. In Indonesia, the minimum CAR is set by Bank Indonesia at 20%, so the bank cannot be less or more than that. If it is insufficient, banking stability will be disrupted, if it is more, the bank's performance will be less than optimal. In this study, the life cycle of the firm does not have a significant effect on dividend policy. This research is not in line with Baker and Powel (2012), Rehman and Takumi (2012), Perretti et al. (2013), Elly and Hellen (2013), Yarram and Dollery (2015), Dewasiri et al. (2019) reveal that the theory of life cycle of the firm has a negative effect on dividend policy. However, this study is still in line with Botoc and Pirtea (2014) who found that there is no relationship between MBV and dividend policy. So that the high or low value of the MBV does not affect dividend policy. GDP and Unemployment do not affect dividend policy on banks in Indonesia in line with Khan et al. (2018). This is possible because Indonesia has a stable GDP level. While the unemployment rate has no effect because the unemployment rate can affect the ups and downs of the central bank's interest rate policy, this does not directly affect the dividend policy of banks in Indonesia.

## 5. CONCLUSION

This study aims to find the variables that can affect the dividend policy using the dividend payout ratio (DPR) variable. Both variables are from inside and outside the company. The objects of this study are Debt policy (DER), credit risk (NPL), Capital Adequacy Ratio (CAR), life cycle of the firm (MBV) Capital structure (Third-party Fund - TPF) inflation (CPI), Gross Domestic Product (GDP), Unemployment and Oil Price and Dividend Payout Ratio as independent variables. The analysis used is regression analysis of panel data. The data in this study is secondary data which is banking financial statements contained in the respective website, as well as macroeconomic data obtained from the central statistical agency and Bank Indonesia, and oil price from the world bank data. The data were taken using annual data from 2009 to 2018. The data of this study are 14 banks in Indonesia.

The results of this study affect dividend policy such as credit risk, capital structure, inflation and oil prices, while other variables do not affect dividend policy. The difference in the results of this study with previous studies is due to differences in research subjects and the year of sampling. The similarity of this research with previous research can be due to conformity with the theory.

## ACKNOWLEDGMENT

This research is funded by USU according to A Contract of Conducting Research Talenta USU Fiscal Year 2020 number 43/UN.5.2.3.1/PPM/SPP-TALENTA USU/2020 28 April 2020.

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