

## ANALYSIS OF THE EFFECT OF GRDP AND INFLATION ON THE MW OF NORTH SUMATRA PROVINCE IN 2000-2018

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### **Abstrak**

Wage/net salary is the compensation received for a month by workers/employees in the form of money or goods paid by the company/office/employer. In-kind rewards are valued at local prices. The purpose of this study was to determine how the influence of GDP and inflation on the minimum wage in North Sumatra. This research method is a quantitative method using secondary data obtained from the Central Statistics Agency. The model used in this research is multiple regression analysis model with eviews program. From this study, it can be seen that the GRDP independent variable gives a positive direction to the MW. This is indicated by the positive value of the regression coefficient on the GDP variable, which is 0.506748 while the second independent variable, namely inflation, gives a negative direction to the dependent variable of the MW, this is indicated by the regression coefficient value of the negative inflation-free variable, which is -0.012338.

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**Keywords: wages, GDP, inflation.**

### **INTRODUCTION**

**W**ages are the most important thing in employment, because the purpose of people working is to get wages that will be used to meet their daily needs. If the value of the wages offered by a company is deemed insufficient to meet the workers' living needs, the worker will refuse the job offered. One of the reasons that is commonly used and creates a bad image of workers is low labor productivity. If we look at the official data from the Central Statistics Agency (BPS), Indonesia's labor productivity during 2001-2010 tends to increase. Looking at the solution mediated by the government, it seems that the labor problem in Indonesia will never be resolved. The national labor force has always questioned the feasibility of the minimum wage for which there was never an agreement between the workers and employers.

Giving fair and commensurate wages will trigger high work motivation so that the performance of the workers / workers becomes better and of course the effect on company income. Wage is useful for increasing output and efficiency, we must be aware of the various difficulties that arise from the incentive wage system (Heidjrahman and Suad Husnan).

### **Formulation of the problem**

This study is about the effect of GDP and inflation on the minimum wage in the province of North Sumatra. This means about: (1) How is the influence of GRDP in North Sumatra Province? (2) How is the effect of GDP on the minimum wage in the Province of North Sumatra?.

### **Research purposes**

The purpose of this study is to deepen the researcher's understanding of wages, such as the types of wages, terms of payment of wages and how to determine the amount of wages. In addition, the main objective of this study is to find out how GRDP and inflation affect the minimum wage in North Sumatra.

## **LITERATURE REVIEW**

### **Understanding Wages**

Wage is the right of the worker/labourer that is received and expressed in the form of money as a reward from the entrepreneur and the employer to the worker/labourer which is determined and paid according to a work agreement, agreement or statutory regulation including allowances for workers/au workers and their families for a job. work and / or services that have been and will be performed (Pujiastuti.2008). Meanwhile, another opinion defines wages as payments received by workers as long as they do work or are seen as doing work or awards for someone's services which are paid in the form of money. (Evi Savitri.2015). Wages are rewards received by workers for services provided in the process of producing goods or services in a company (Soedarjadi).

Wage/net salary is the compensation received for a month by the workers/employees in the form of money or goods paid by the company/office/employer. In-kind rewards are valued at local prices. The net wages/salaries referred to are after deducting mandatory contributions, income taxes and so on. (BPS Province of North Sumatra). Wages are rewards received by workers for the services they provide in the process of producing goods or services in the company (Alan Amundi Wibowo).

### **Definition of Minimum Wage**

The minimum wage is the lowest monthly wage in the form of wages without allowances or basic wages including fixed allowances set by the governor as a safety net. The provincial minimum wage is the minimum wage that applies to all regency/city within one province. (Regulation of the Minister of Manpower of the Republic of Indonesia No. 15 of 2018).

### **Definition of GDP**

Gross Regional Domestic Product is added value that can be created as an economic activity in a region. Or it can also be interpreted that GRDP is the entire gross production value of both goods and services produced by production factors operating in an area, usually calculated within a certain period. (Bunyamin). GRDP at constant prices is the total value of goods and services produced and calculated based on the base year.

### **Definition of Inflation**

Inflation is an economic phenomenon that shows a continuous increase in the general price level. (Ali Ibrahim hasyim.2016). The definition of inflation from various other literatures, namely Inflation is a general price increase originating from the disruption of the balance of the flow of money and goods. (Kartika sari.2017).

Inflation is an increase in the price of goods and services in general where these goods and services are the basic needs of the community or a decrease in the selling power of a country's currency. (From BPS Province of North Sumatra).

### **Research Overview**

1. Based on the research conducted by Ferbrika Nurtivas in 2016 with the research title Analysis of Factors Affecting the Provincial Minimum Wage in Java Island 2010-2014. Obtaining research results where the GRDP variable has a negative and significant effect on the Provincial Minimum Wage in Java.
2. The research was conducted by Amundi Wibowo in 2018, with the research title Analysis of Factors Affecting the Regional Minimum Wage (UMR) of the Special Region of Yogyakarta Province 1990-2016. The results show that the GRDP variable has a positive and significant effect on the UMR.
3. In a research that has been conducted by Ninda Noviani Charsya in 2013 with the title of research on the Effect of Economic Growth and Inflation on Regional Minimum Wages in Regencies/Cities of Central Java Province. Obtaining research results where the inflation variable has a negative and significant effect on the Regional Minimum Wage in Central Java.

## **RESEARCH METHODOLOGY**

### **Research Design**

The research method is a way or way to get back the solution to all problems. the definition of research is a scientific activity related to analysis and constructive which is carried out methodologically, systematically and consistently. Methodology means something with certain methods/methods, systematic means based on a system, while consistent means the absence of things that are contrary to a certain framework. In carrying out this research the researcher took steps by using methods that were related and suitable to the data.

In this study the approach method used is a quantitative approach. Quantitative research method is one type of research whose specifications are systematic, well-planned, and clearly structured from the beginning to the making of the research design. Another definition states that quantitative research is research that demands the use of numbers, starting from data collection, interpretation of the data, and the appearance of the results. Likewise, at the conclusion of the research, it would be better if it was accompanied by pictures, tables, graphs, or other displays (Sandu Siyoto and Alisodik. 2015)

### **Research variable**

In this study using 2 variables, namely as follows:

1. Dependent Variable  
Dependent variable is a variable that is influenced or which is the result of an independent variable. The dependent variable in this study is the North Sumatra Province Minimum Wage.
2. Independent variables.  
Independent variables are variables that affect or are the cause of changes or the emergence of the dependent variable. In this study, the independent variable used is GRDP based on constant prices and inflation.

### **Data Types and Sources**

1. Data type  
The type of data used in this study is secondary data where the data collected is not obtained from the main source, but has been available in various sources in the form of documents, websites or publications (previous research has been done).
2. Data Source  
In this study, the source of the data used was secondary data published by the Central Bureau of Statistics of the Province of North Sumatra. The data obtained are the provincial minimum wage, gross domestic product based on constant prices and inflation in 2000 – 2018.

### **Research Model**

In this study, the model used is a multiple linear analysis model, with the model form  $Y = C + X_1 + \beta X_2 + \dots$ . Multiple regression model analysis was obtained using the eviews program.

## **DISCUSSION**

### **Wage Concept**

In general, wages are payments received by workers as long as they do work or are seen as doing work. Nurimansyah Haribuan said: "Wages are all forms of income (earning), which are received by workers or employees (labor) either in the form of money or goods within a certain period of time in an economic activity. Economic wages are the price that must be paid to workers for their services in the production of wealth, like other factors of production, labor is rewarded for its services. In other words, wages are the price of labor paid for services in production (Muwartie B Raharjo). Wages in Islam are rewards that a person receives for his work in the form of material rewards in the world (fair and proper) and in the form of rewards in the hereafter (better rewards). Islam does not allow wages to be below the minimum level determined based on the basic needs of the working group but Islam also does not allow any wage increases to exceed a certain level determined based on their contribution to production.

Wage according to the law is the right of a worker or laborer who is received and expressed in the form of money as a reward from the entrepreneur or employer to the worker/ laborer which is determined and paid according to a work agreement,

agreement, or statutory regulations including allowances for workers/ laborers. and his family for a job and or service that has been or will be performed.

The other types of wages are wages in kind. Natura is wages given in other forms, namely real goods (in kind) that have economic value for workers. The term wages in kind is not recognized in Law Number 13 of 2003 concerning Manpower or other laws and regulations governing manpower matters. The meaning of natura in the big Indonesian dictionary is actual goods, not in the form of money.

Economists make a distinction between two notions of wages, namely money wages and real wages. Money wages are the amount of money that workers receive from employers as payment for the mental or physical labor used in the production process. While the real wage is the level of wages of workers measured from the point of view of the ability of these wages to buy goods and services needed to meet the needs of workers (Sukimo)

Wages are actually a reward for employees, the higher the employee's performance, the higher the wages that will be received. This achievement is usually expressed as productivity, the only problem is that there seems to be no agreement on protecting productivity.

The theory of price formation (pricing) and the utilization of inputs (employment) is called the marginal productivity theory (marginal productivity theory), commonly also called the wage theory (wage theory). Marginal productivity is not fixed solely on the demand side of the labor market. It is known that a competitive firm that buys labor in a perfectly competitive market will mobilize or absorb labor to a point where the wage rate equals the value of the marginal product (VMP). So basically, the VMP curve is a firm's demand curve for labor. The level of wages and the use of inputs (employment) are both determined by the interaction between supply and demand. Talking about the theory of the marginal productivity of wages is the same as talking about the theory of demand for prices; and we cannot talk about the theory of demand for these prices because in fact the price is not only determined by the demand, but also by the supply (Maimun, Sholeh).

Both in Islamic and Conventional Economics view employees or labor as one of the driving wheels of the economy. Labor is considered a potential consumer because most of the national product is consumed by the workforce and their dependents, changes in wages will greatly affect their consumption level, purchasing power and standard of living, so that the determination of wages is not carried out in a fair and just context. Will affect the whole economy (Hendi Suhendi)

### **Wage Terms**

These conditions include the following (Hendi Suhendi):

1. Clarity of work to be done
2. His work does not violate Islamic teachings.
3. Clarity of wages or rewards to be received by the second party.

### **Wage System in Indonesia**

The wage theory according to Hendi Suhendi is:

- a. Time-based wages are wages whose amount is based on the length of work (per

hour, per week, per month). Wages according to the unit of output are wages whose amount is based on the number of goods produced by workers (per piece, per item, per weight).

- b. Piece rate wages are wages based on an agreement between the employer and the recipient of the work.
- c. The bonus system is an additional payment outside of wages as an incentive for
- d. workers to do better.
- e. The business partner system is the provision of wages in the form of company shares

**Table 1** Data on Provincial Minimum Wage, GRDP (Based on Constant Prices) and Inflation in North Sumatra in 2000-2018

Year	Min Wage	GRDP	INF
2000	254000	24016.6	5.73
2001	340500	24911.05	14.79
2002	464000	25925.36	9.59
2003	505000	27071.25	4.23
2004	537000	83328.95	6.8
2005	600000	87897.79	22.41
2006	737794	93347.4	6.11
2007	761000	99792.27	6.6
2008	822205	106172.36	10.72
2009	905000	111559.22	2.61
2010	965000	118718.9	8
2011	1035500	126587.62	3.67
2012	1200000	375924.14	3.86
2013	1375000	398727.14	10.18
2014	1505850	419573.31	8.17
2015	1625000	440955.85	3.24
2016	1811875	467187.76	6.34
2017	1961355	491922.92	3.2
2018	2132189	512762.63	1.23

Source : BPS North Sumatra Province

## Analysis Estimate Equation

**Table 2** Hypothesis Testing

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.803445	0.490380	15.91306	0.0000
LOG(PDRB)	0.506748	0.039372	12.87061	0.0000
INF	-0.012338	0.008732	-1.413022	0.1768
R-squared	0.926873	Mean dependent var	13.68477	
Adjusted R-squared	0.917732	S.D. dependent var	0.603414	
S.E. of regression	0.173074	Akaike info criterion	-0.526257	
Sum squared resid	0.479273	Schwarz criterion	-0.377135	
Log likelihood	7.999439	Hannan-Quinn criter.	-0.501019	
F-statistic	101.3980	Durbin-Watson stat	1.537950	
Prob(F-statistic)	0.000000			

### Hypothesis testing

#### a. Coefficient of determination test (R<sup>2</sup>)

The model feasibility test or R<sup>2</sup> test is a test to see the ability of the independent variable in explaining the dependent variable. The R<sup>2</sup> value obtained in the estimation results is 0.926873. This means that the independent variables of GDP and inflation are able to explain the dependent variable of MW by 92% while the rest is explained by other variables.

#### b. Partial regression coefficient test(t-test)

In conducting the t-test, the thing that must be done is to compare the t-statistical value with the t-table value. Where if the t-statistical value > t-table value, the independent variable has a significant effect on the dependent variable. Meanwhile, if the t-statistical value < table value, it can be said that the independent variable has no significant effect on the dependent variable.

Hypothesis formulation/statement

- Initial hypothesis (H<sub>0</sub>):

- H<sub>0</sub> : 1 = 0 the independent variable GRDP has no effect on the MW variable.

- H<sub>0</sub> : 2 = 0 inflation-free variable (INF) has no effect on the MW variable.

- Final hypothesis (H<sub>1</sub>):

- H<sub>1</sub> : 1 = 0 the independent variable GRDP has an influence on the MW variable.

- H<sub>1</sub> : 2 = 0 inflation-independent variable (INF) has the effect of the MW variable.

Determine the t-table value:

In this study, the error rate used (α) is 5% or

0.05, with the number of observations (n) = 19. And the test to be used is a two-way test where. Then calculate the value of the degree of freedom as follows:

$$Df = 19 - K$$

$$= 19 - 3$$

$$= 16$$

So the value of t-table ( ; df) is 2,120.

By comparing the t-statistical values that have been obtained in the previous

estimation model with the t-table values that have been searched, the results can be obtained as follows:

- Variable GRDP to MW  
Based on the estimation results made previously, it is known that the GRDP variable has a t-statistic value of 12.870661 while the t-table value is 2.120. this means that the value of t-statistics > t-table value (12.870661 > 2.120), so it can be concluded that the GRDP variable has a significant influence on the MW. In this case, H<sub>0</sub> is rejected and H<sub>1</sub> is accepted. Inflation variable to the MW.
- Based on the estimation results made previously, it is known that the GRDP variable has a t-statistic value of -1.413022 while the t-table value is 2.120. this means that the t-statistic value < t-table value (-1.413022 < 2.120), so it can be concluded that the inflation variable does not have a significant effect on the MW. In this case, H<sub>0</sub> is accepted and H<sub>1</sub> is rejected.

#### **b. Simultaneous Regression Coefficient Test (Test - F)**

- Initial hypothesis H<sub>0</sub> = 0 independent variables GRDP and INF together have no effect on the dependent variable (poverty).
- The final hypothesis H<sub>1</sub> 0 independent variables GRDP and INF together have an effect on the dependent variable (poverty).

Based on the estimation results above, it is known that the F-Statistic/F-count = 101.3980, while the level of confidence used = 0.05.

Determine the F-table: DF1 = K-1

= 3-1

= 2

DF2 = N-K

= 19-3

= 16

F-table is at(2 ; 16) then F-table = 3.63 .

So the value of F-statistics > F-Calculate or 101.3980 > 3.63.

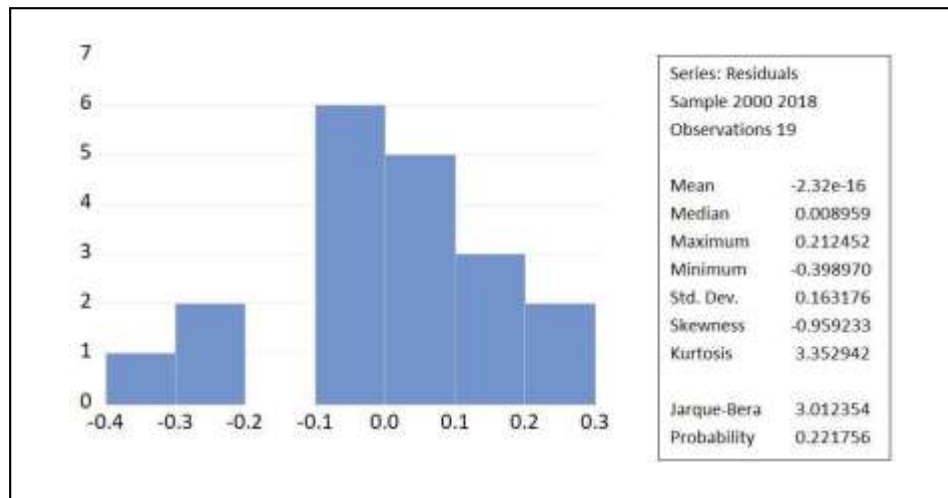
From these results, the statement H<sub>0</sub> is rejected and H<sub>1</sub> is accepted or the independent variables POP\_PENDUK, TPT and INF together have an influence on the dependent variable GRDP\_HK.

#### **Classical Assumption Test**

##### **a. Normality test**

Normality test is a test conducted to determine whether the data in the variables used are normally distributed or not. In conducting the normality test, the Jargue-Bera(JB) model can be used. Decision making with Jargue-Bera, namely the probability value > from the significant rate used, then the variable is normally distributed.





**Figure 1** Normality Test

Source: Data is processed with eviews

Based on the normality test above, it is known that the Jargue-Bera probability value of 0.221756 indicates that the probability is  $> 0.05$ . So it can be concluded that the data is normally distributed.

**b. Multicollinearity Test**

Multicollinearity test is a test conducted to see whether in the regression model there is a correlation between independents or not. In this test, if the correlation coefficient between two variables exceeds 0.8, it can be said that multicollinearity occurs, and vice versa if the coefficient is below 0.8 then multicollinearity does not occur.

**Table 3** Multicollinearity Test

	LOG(PDRB)	INF
LOG(...	1.000000	-0.336177
INF	-0.336177	1.000000

Source: Data is processed with eviews

From the multicollinearity test that has been carried out, the result is that the coefficient is less than 0.8. so it can be concluded that in the model used there is no multicollinearity. In performing multicollinearity tests, it can also be done using the variance inflation factor (VIF) method.

**Table 4** Multicollinearity Test

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.240472	152.5301	NA
LOG(PDRB)	0.001550	137.6257	1.127414
INF	7.62E-05	3.659484	1.127414

Source: Data is processed with eviews

By using the VIF method, the multicollinearity test is said to be free if the centered VIF

values are less than 10. So based on the tests carried out, the results obtained are the values entered  $VIF < 10$ . So it can be concluded that there is no multicollinearity in the model used.

### C. Heterodity Test

Heteroscedasticity test is a test that assesses whether there is an inequality of variance from the residuals for all observations in the linear regression model. In conducting the heterodasity test, the method used in this study is the Breusch-Pagan-Godfrey method. In this method, heterodasity testing is done by comparing the chi-square probability value with the significant level used.

**Table 5** Heterodity Test

Heteroskedasticity Test:

Breusch-Pagan-Godfrey Null-

hypothesis: Homoskedasticity

F-statistic	3.414721	Prob. F(2,16)	0.0582
Obs*R-squared	5.683862	Prob. Chi-Square(2)	0.0583
Scaled explained SS	4.741956	Prob. Chi-Square(2)	0.0934

Source: Data is processed with eviews

Based on the heterodasity test, the results obtained that the chi-square probability value is greater than the significant level used, namely 0.05. This means that there is no heterodassity in the model used.

### d. Autocorrelation

Autocorrelation test is a test conducted to see whether there is a strong correlation between time periods. To perform the autocorrelation test in this study, the method used was the Durbin-Watson (DW Test) method. To see the area of autocorrelation in Durbin-Watson, it can be seen through the following criteria:

**Table 6** Decision for Autocorrelation Test

Hyphothesis	D value	Decision
H0 : $p = 0$ (No effect) H1 : $p \neq 0$ (effect)	$D_u < d < 4 - d_u$	Accept H0
H0 : $p = 0$ (No effect) H1 : $p > 0$ (effect)	$0 < d < d_L$ $d_L < d < d_u$	Reject H0
H0 : $p = 0$ (No effect) H1 : $p < 0$ (effect)	$4 - d < d < 4$ $4 - d_u < d < 4 - d_L$	Reject H0

Source: Wahyudi

From the Durbin-Watson test, the results obtained are the Durbin-Watson statistic of 1.537950 while the value of  $d_U = 1.5355$  and  $d_L = 1.0743$ . then for the value of  $4 - d_u =$

2.4645 and  $4-dL = 2.9257$ . From these results, it can be concluded that the Durbin-Watson statistic is greater than the value of  $dU$  and less than  $4-du$  ( $dU < d < 4-du$  or  $1.5355 < 1.537950 < 2.4645$ ). So it can be concluded that there is no autocorrelation.

#### Discussion of Research Results.

Based on the estimation model that has passed the above test, the following regression equation is obtained:

$$\text{LogMW} = 7.803445 + 0.506748 \text{ LogPDRB} - 0.012338 \text{ LogINF} + .$$

Information :

Log : Logarithm

UPM : Provincial Minimum Wage

GRDP : Gross Domestic Product (based on constant prices)

INF : Inflation

E : Error

Based on the regression model formed, it can be interpreted as follows;

- From the regression model, a constant value (C) of 7.803445 is obtained, meaning that if the value of the independent variables of GDP and inflation is 0, then the value of the dependent variable MW is 7.803445.
- The independent variable GRDP gives a positive direction to MW. This is indicated by the positive value of the regression coefficient on the GRDP variable, which is 0.506748. That is, if there is a one-unit increase in the GRDP independent variable, it will increase the MW by the coefficient of the GRDP independent variable, which is 0.506748.
- The second independent variable, namely inflation, gives a negative direction to the dependent variable MW, this is indicated by the regression coefficient value of the negative inflation-free variable, which is  $-0.012338$ . That is, if there is a one-unit increase in the inflation-free variable, it will reduce MW by the inflation-free variable coefficient, namely  $-0.012338$ .

#### CONCLUSION

Wages are a very crucial issue in the field of employment, even if they are not professional in handling it, it will often lead to potential disputes and encourage strikes and demonstrations. The handling of wages does not only involve technical and economic aspects, but also legal aspects which form the basis for how things related to wages are carried out safely and correctly based on government regulations. Therefore, to handle wages in a professional manner absolutely requires a comprehensive understanding of the performance of these aspects. In setting wages, of course, there are basic considerations, seen from economic and social conditions and other factors that influence. The basic considerations in determining wages in order to achieve a worker's or labor's eligibility for life are: 1. As a manifestation of the implementation of Pancasila, the 1945 Constitution and the GBHN (Outlines of State Policy). 2. So that the results of development are not only enjoyed by a small part of the community, but it is necessary to reach the majority of low-income people and their families. 3. As an effort to equalize income and middle class growth process. 4.

Legal certainty for the protection and basic rights of workers and their families. 5. As an indicator of per capita economic development.<sup>2</sup> Wages contained in the Manpower Act Number 13 of 2003 generally explain that wages are the rights of workers or laborers who are received and expressed in the form of money. Talking about wage eligibility, of course, cannot be separated from the minimum wage system that in substance, it is aimed at ensuring that workers are guaranteed decent living needs and fair treatment from employers. Based on the research analysis of the influence of GRDP and inflation on MW in North Sumatra that has been carried out, it can be concluded as follows:

1. From the regression model, a constant value (C) of 7.803445 is obtained, meaning that if the value of the independent variables of GDP and inflation is 0, then the value of the dependent variable MW is 7.803445.
2. The independent variable GRDP gives a positive direction to MW. This is indicated by the positive value of the regression coefficient on the GRDP variable, which is 0.506748. That is, if there is a one-unit increase in the GRDP independent variable, it will increase the MW by the coefficient of the GRDP independent variable, which is 0.506748.
3. The second independent variable, namely inflation, gives a negative direction to the dependent variable MW, this is indicated by the regression coefficient value of the negative inflation-free variable, which is  $-0.012338$ . That is, if there is a one-unit increase in the inflation-free variable, it will reduce MW by the inflation-free variable coefficient, namely  $-0.012338$ .

## **SUGGESTION**

Based on the results of research and discussion of the wage theory above, we have suggestions, namely:

1. The government should pay more attention to the wage theory in Indonesia, so that the standard of wages received by both employees and employers is in accordance with the minimum wage or decent. There is no longer any below-average wages. This is done to improve the welfare of employees/community.
2. For entrepreneurs, it is better to pay attention to the regulations regarding wages that are applied and carry out/implement them properly. Because sometimes not all workers get their job rights according to applicable regulations.

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