Minimum Wage, Inflation, Interest Rate and Household Consumption In Indonesia

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Abstract.*This study aims to determine the effect of minimum wages, inflation, and lending rates on household consumption in Indonesia. The variables in this study are minimum wage, inflation, and lending rates as independent variables, while the household consumption variable is the dependent variable. The research period is from 1993-2023. The data analysis technique used is the Autoregressive Distributed Lag (ARDL) panel. The results of this study indicate that the province that is able to become a leading indicator for the stability of household consumption is North Sumatra. When viewed from the short run and long run, the Minimum Wage variable has an insignificant effect on Household Consumption in the short term but has a significant effect on Household Consumption in the long term. Inflation variable has a significant effect on Household Consumption in the short run, while in the long run Inflation variable has an insignificant effect on Household Consumption. The loan interest rate variable has no significant effect on household consumption in the short term or in the long term.*

Keywords: *Minimum Wage, Inflation, Lending Rate, Household Consumption*

1. INTRODUCTION

Humans in their daily lives cannot be separated from consumption activities, both consumption in meeting basic needs such as clothing, food, and shelter, as well as consumption activities to meet other needs. Consumption expenditure is attached to every human need from the beginning to the end of his life, meaning that everyone throughout his life performs consumption activities (Ragandhi, 2012).

Household consumption can also influence macroprudential policy. When household consumption increases rapidly, it can increase credit demand and drive up property prices. This may increase systemic risk and prompt BI to implement tighter macroprudential policies. Household consumption and macroprudential stability are interrelated and influence each other. The macroprudential policy implemented by BI aims to maintain financial system stability and encourage sustainable economic growth, which in turn can improve household consumption stability (Putra Kusuma, 2023).

In Indonesia, household consumption accounted for 54.93% of gross domestic product (GDP) in the first quarter of 2024, growing by 4.91% percent compared to the same period last year. Household consumption was one of the biggest drivers of economic growth in the first quarter of 2024. Growth in household consumption was driven by the momentum of the month of Ramadan which boosted growth in food and beverage consumption.

Table 1.1 2024 Household Consumption Index

Subsectors NTP	Household Consumption Index				
	January	February	March	April	May
Food Crops	116,34	116,57	118,02	118,81	118,60
Horticulture	117,21	117,46	119,48	119,94	119,60
People's Plantation	117,77	118,29	120,23	120,79	120,42
Livestock	116,97	117,28	119,33	119,83	119,49
Fisheries	118,53	118,90	121,08	121,59	121,37
Composite NTP	117,35	117,73	119,59	120,19	119,88

Soource : ((BPS), 2024)

The higher the interest rate, the greater the amount of money saved and the smaller the amount of money spent on consumption. Conversely, the lower the interest rate, the lower the amount of money saved and the greater the amount of money spent on consumption. Thus, the relationship between consumption and interest rates has an opposite direction where an increase in interest rates will reduce people's consumption patterns. Changes in interest rates create effects on household consumption. These effects are the substitution effect and the income effect (Persaulin et al, 2013).

In research conducted by Sinaga (2021) the interest rate variable has a significant and positive effect on household consumption, in contrast to research conducted by Ragandhi (2012) the results showed that interest rates have a negative and significant effect on public consumption in the long term this is shown based on the results of Eviews processing.

In tests conducted by Ragandhi (2012) inflation has a positive and significant effect on public consumption in the long run, then in research conducted by Sinaga (2021) using multiple linear regression models also resulted in a positive and significant effect of inflation variables on household consumption. In contrast to research conducted by Nur (2012) inflation has a negative and significant effect on consumption. The existence of a significant influence between inflation and consumption indicates that consumption is influenced by inflation.

The next factor that affects consumption is the Regional Minimum Wage (UMR). The Minimum Wage is set by the government by calculating a Decent Life, so that if the wage is below the UMK level, it can be said that a worker receives a wage that is not sufficient to meet his needs. The higher the minimum wage level, the higher the welfare of the workers. The goal of the minimum wage program is to meet the minimum needs of workers and their families

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(Persaulin et al, 2013). The minimum wage affects income so that it also affects the level of public consumption. Minimum wage is considered as the main benchmark of income owned by labor. The higher the minimum wage, the higher the consumption of goods and services.

In tests conducted by Wibawa & Purbadharmaja (2018), the city minimum wage has a positive and significant relationship with household consumption, meaning that the district minimum wage contributes to household consumption expenditure. In contrast to research conducted by Puspitasari (2017), the minimum wage has a negative and significant effect on consumption levels.

Based on the background described above, it can be concluded that the purpose of this study is to analyze the relationship between wages, inflation, lending rates on household consumption in Indonesia.

Hypothesis

H1 : Minimum wage has a significant effect on household consumption in Indonesia.

H2 : Inflation has a significant effect on Household Consumption in Indonesia.

H3 : Lending Interest Rate has a significant effect on Household Consumption in Indonesia.

H4 : Minimum Wage, Inflation, and Lending Rate have panel effect on Household Consumption in Indonesia.

2. RESEARCH METHODS

2.1 Panel Regression Model

This research was conducted in Indonesia. The data used in this research is quantitative data, which is data that is measured or calculated directly, expressed in numbers or in the form of numbers taken and processed from the World Bank and BPS (Central Bureau of Statistics). The period of 1993 - 2023.

This research uses the ARDL panel model. The panel data used is data between time and between provinces. The estimation results for each individual characteristic are obtained through the use of panel regression.

The panel regression model is:

$$KRTit = \alpha + \beta_1 UMt + \beta_2 INFit + \beta_3 SBKit + e$$

3. RESULTS AND DISCUSSION

Using Eviews 10 software, panel analysis with Auto Regressive Distributin Lag (ARDL) examines the combined data, which is a combination of cross section data (provincial) and time series data (annual). ARDL panel results are better than ordinary panels because they

are able to cointegrate in the long run and have a lag distribution that best fits the theory (Nasution et al., 2021). The results are as follows:

3.1 Stationarity Test

The unit root test was conducted with the Dicky Fuller (DF) model. The test aims to determine the stationarity of KRT, UM, INF, SBK data from 1993 to 2023. The following are the results of the data stationarity test:

Table 3.2 Augmented Dickey Fuller Unit Root Test

| Variable	Level		First Difference	
	t-statistic	Probability	*t-statistic*	Probability
Household Consumption	-1,344123	0,5957	-4,173089	0,0030
Minimum Wage	-0,691567	0,8340	-5,032478	0,0003
Inflation	-2,523009	0,1233	-5,359195	0,0003
Lending Rate	-0,487254	0,8796	-6,304981	0,0000

Source: Results processed with Eviews 10, 2024

The test results at the first difference level obtained that all variables, both dependent and independent, are stationary at the first difference level at y = 5%, which means that the probability value is smaller than y = 5%. The data above is stationary at first differential so it is assumed that there will be cointegration or long-term relationship. Thus the next test can be forwarded to the cointegration test.

3.2 Optimum Lag Test

In the study of determining the optimal lag length with the Akaike Info Criterion (AIC) approach, the following results were obtained:

Figure 3.1 Optimum Lag Test
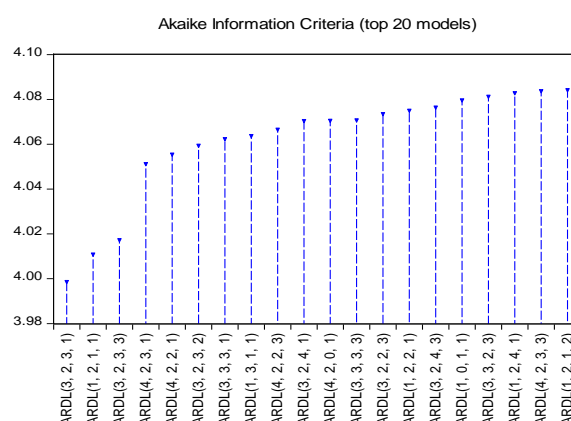
Based on Figure 1. there are 20 best models but the model suitable for ARDL estimation in this study is the ARDL (3, 2, 3, 1) model.

3.3 Bound Test Cointegration Test

Bound Test Cointegration Test if the F-statistic value is below the lower limit value, it can be concluded that there is no cointegration. If the F-statistic value is above the upper limit value, it can be concluded that cointegration occurs. However, if the F-statistic is between the lower limit and upper limit values, the results cannot be concluded. The following are the results of the cointegration limit test:

Table 3.3 Bound Test Cointegration Test

Test Statistic	Value	K
F Statistic	32.43385***	3
Critical Value Bounds		
Significance	I(0) Bounds	I(1) Bounds
10%	2.37	3.2
5%	2.79	3.67
2,5%	3.15	4.08
1%	3.65	4.66

Source: Results processed with Eviews 10, 2024

The cointegration test results based on the tied test approach in the table above show that the F-statistic value is above the limit of y = 1%. This means that there is cointegration between the variables studied at the upper limit of y = 1%.

3.4 Error Correction Term (ECT) Test

Berikut hasil dari Uji Error Correction Term :

Table 3.4 Error Correction Term Test:

Variable	Coefficient	t-Statistic	Prob.
CointEq(-1)	-0.145817	-13.84394	0.00000

Source: Results processed with Eviews 10, 2024

The Error Correction Term estimation results show that the error correction variable which is the previous period error is indicated by the CointEq(-1) variable of -0.145817 with significant at $\alpha = 1\%$. The negative and significant value of the error variable indicates that the Error Correction Term model is valid and indicates the existence of short-term cointegration between the independent variable and the dependent variable during the period 1993 - 2023.

3.5 Normality Test

The normality test is said to be normal if it is greater than 0.05. In this study, the significant probability value is 0.178237> 0.05, this states that the data is normally distributed.

3.6 Autocorrelation Test

The autocorrelation test in this study uses the Breusch-Godfrey Serial Correlation LM Test method.

Table 3.5. Autocorrelation Test Results

Breusch-Godfrey Serial Correlation LM Test			
F-statistic	2.355218	*Prob. F(2,20)*	0.1206
*Obs*R-squared*	5.718761	*Prob. Chi-Square(2)*	0.0573

Source: Results processed with Eviews 10, 2024

Based on table 5. The Chi-Square probability value is greater than the significant level, namely 0.0573> 0.05. This hail can be stated that the data in the regression model does not have a case of autocorrelation so that the assumption of non-autocorrelation has been fulfilled.

3.7 Heteroscedasticity Test

The method used in the heteroscedasticity test is Breusch-Pagan-Godfrey.

Table 3.6 Heteroscedasticity Test Results

Breusch-PaganGodfrey			
F-statistic	0.377424	*Prob. F(7,22)*	0.9057
*Obs*R-squared*	3.216427	*Prob. Chi-Square(7)*	0.8643
Scaled explained SS	2.621371	*Prob. Chi-Square(7)*	0.9177

Source: Results processed with Eviews 10, 2024

3.8 ARDL Estimation Results

After conducting stationarity tests and bound tests, as well as selecting the optimum lag, the next step is to regress the ARDL model. ARDL regression is used to see the long-term and short-term relationships of the research variables.

Table 3.7 ARDL regression results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
KRT(-1)	0.854183	0.038328	22.28629	0.0000
UM	6.019089	13.29478	0.452741	0.6552
UM(-1)	16.18110	12.83066	1.261128	0.2205
INF	-0.238687	0.062889	-3.795380	0.0010
INF(-1)	0.100922	0.052507	1.922072	0.0676
SBK	2.479801	1.995437	1.242736	0.2270
SBK(-1)	-5.057824	1.894226	-2.670127	0.0140
C	317.1817	77.61215	4.086753	0.0005

Source: Results processed with Eviews 10, 2024

Table 7. can explain the ARDL model in this study, namely :

$KRT_{it} = \alpha + \beta_1 UM_{it} + \beta_2 INF_{it-1} + \beta_3 SBK_{it-1} + e$

$KRT_{it} = 317.1817 + 6.019089\ UM + -0.238687\ INF + 2.479801\ SBK + 0.854183$

$KRT(-1) + 16.18110\ UM(-1) + 0.100922\ INF(-1) + -5.057824\ SBK(-1)$

3.9 Short-Term and Long-Term Estimation Results

3.10 ARDL Estimation in Long Term

From table 8: the variable that has a significant effect on household consumption is the minimum wage. Meanwhile, variables that have an insignificant effect on Household Consumption are Inflation and Lending Rates.

Table 3.8 Estimated ARDL in the Long Term

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(UM)	152.2469	33.74503	4.511683	0.0002
D(INF)	-0.944779	0.719535	-1.313040	0.2027
D(SBK)	-17.67985	10.70736	15.11779	0.1129

Source: Results processed with Eviews 10, 2024

3.11 ARDL Estimates in the Short Term

From table 9, the variables that have a significant effect on Household Consumption are Inflation and Minimum Wage lag-1. Meanwhile, the variables that have no significant effect on household consumption are minimum wages, interest rates and lag-1 interest rates, lag-1 inflation.

Table 3.9 ARDL Estimates in the Short Term

Variable	Coefficient	Std. Error	t-Statistic	Prob.
KRT(-1)	-0.145817	0.038328	-3.804.480	0.0010
D(UM)	6.019.089	1.329.478	0.452741	0.6552
D(INF)	-0.238687	0.062889	-3.795.380	0.0010
D(SBK)	2.479.801	1.995.437	1.242.736	0.2270
UM(-1)	2.220.019	8.976.418	2.473.168	0.0216
INF(-1)	-0.137765	0.083416	-1.651.547	0.1128
SBK(-1)	-2.578.023	1.821.630	-1.415.229	0.1710

Source: Results processed with Eviews 10, 2024

3.12 Stability Test

The stability test functions to detect how stable parameters are in long-term and short-term relationships. The stability test in this research uses the Cusum test and Cusum of Square, which is useful for testing coefficient stability and ensuring whether there is a structural break in the model or not as a result of the analysis. If the cumulative recursive residual value is located within the band, it can be stated that the estimated parameters in the research period are stable. Likewise, if the cumulative recursive residual value is outside the band, this indicates that the estimated parameters in the research period are unstable (Sovia Zahrianti & Wirawan Fadly, 2022).
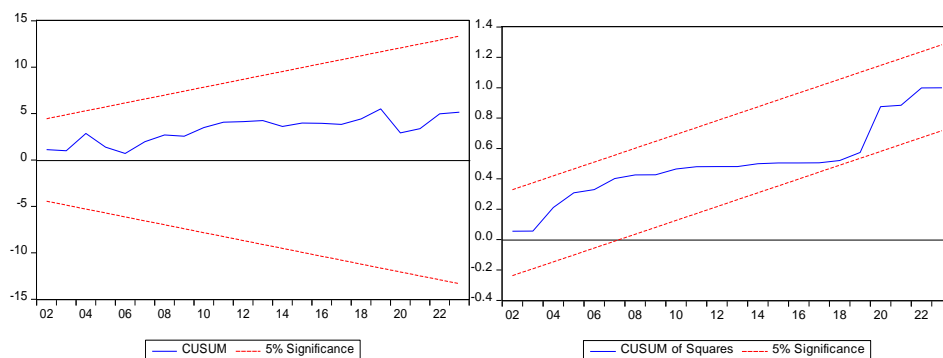

Figure 3.2 Cusum and Cusum Q Test Results

Based on Figure 2, it can be seen that in both Cusum and Cusum Q models it is known that the blue line in the model does not go beyond the red line which remains between the 5% significant line (0.05).

4. CONCLUSION

This research is to look at the relationship between variables, namely Minimum Wage, Inflation, and Credit Interest Rates on Household Consumption. The analysis model used by the author is the Autoregressive Distributed Lag (ARDL) model. Annual research data is taken from the Central Statistics Agency (BPS) which provides information regarding variable indicators. After going through several stages of testing, the author can draw conclusions from the findings of this research, including: The minimum wage variable has no significant effect on household consumption in the short term. Minimum Wage lag-1 has a significant effect on Household Consumption in the short term. In the long term, the Minimum Wage variable has a significant effect on Household Consumption.

The inflation variable has a significant effect on household consumption in the short term. Inflation lag-1 has no significant effect on household consumption in the short term. In the long term, the inflation variable has no significant effect on household consumption. The Credit Interest Rate variable has no significant effect on Household Consumption in the short term. The credit interest rate lag-1 has no significant effect on household consumption in the short and long term.

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