APPENDIX

Appendix 1. Data on Gross Regional Domestic Product of the Processing Industry Sector and the Wholesale Trade and Retail Sector GDP Data 2010-2024 (in the form of billions of rupiah)

Year	Processing Industry	Large and Retail Trading
2010	41.337	12.198
2011	43.545	13.471
2012	46.275	14.723
2013	49.175	16.091
2014	52.757	17.142
2015	55.756	17.938
2016	58.275	19.059
2017	61.597	20.272
2018	65.975	21.429
2019	71.841	22.703
2020	72.546	20.734
2021	76.098	22.721
2022	80.338	24.427
2023	83.867	25.886
2024	88.214	27.095

Appendix 2. Investment Data for the Processing Industry Sector and the Wholesale Trade and Retail Sector GDP Data 2010-2024 (in the form of billions of rupiah)

Year	Processing Industry	Large and Retail Trading
2010	2.150	850
2011	2.400	920
2012	2.950	1.150
2013	3.500	1.400
2014	3.850	1.620
2015	4.120	1.850
2016	4.810	2.100

Year	Processing Industry	Large and Retail Trading
2017	5.200	2.450
2018	5.950	2800
2019	6.400	3200
2020	4.200	2100
2021	5.150	2650
2022	6.800	3400
2023	7.450	4120
2024	8.200	4.850

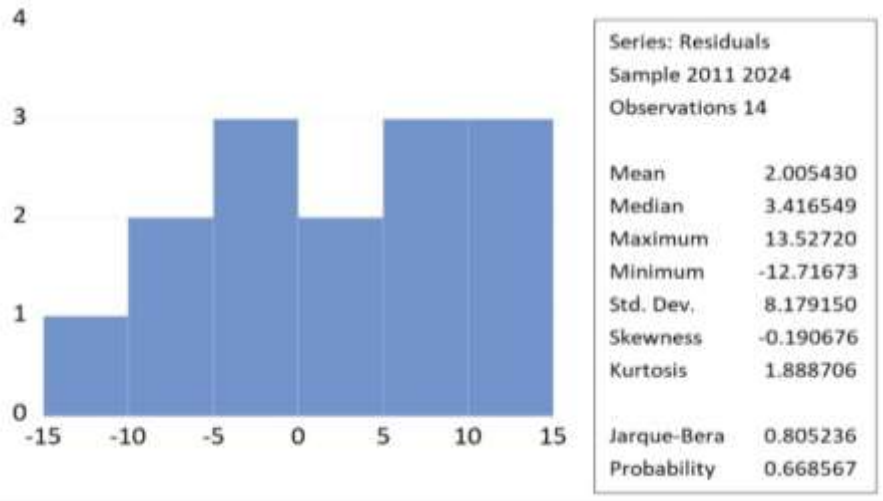
Appendix 3. Labor Data of the Processing Industry Sector and the Wholesale Trade and Retail Sector GDP Data 2010-2024 (in Souls/people)

Year	Processing Industry	Large and Retail Trading
2010	142.187	175.200
2011	148.651	182.150
2012	152.170	190.400
2013	155.364	198.600
2014	159.436	205.100
2015	160.122	210.450
2016	352.080	215.100
2017	368.450	224.320
2018	164 650	231.560
2019	447.185	240.200
2020	398.954	225.400
2021	425.701	228.900
2022	393.093	238.900
2023	375.00	245.600
2024	378.290	252.300

Appendix 4. Data on the Production Value of the Processing Industry Sector and the Wholesale and Retail Trade Sector (in billions of rupiah)

Year	Processing Industry Sector	Large and Retail Trading
2010	45.200	11.300
2011	49.850	12.450
2012	55.400	13.800
2013	61.150	15.200
2014	67.300	16.850
2015	72.450	18.100
2016	78.120	19.550
2017	84.300	21.200
2018	91.550	23.450
2019	98.200	25.600
2020	94.150	23.100
2021	102.400	26.450
2022	122.670	31.120
2023	133.050	34.500
2024	140.400	37.250

Appendix 5. Normality Test Results of the Processing Industry Sector



Appendix 6. Heteroskedesticity Test Results of the Processing Industry Sector

Heteroskedasticity Test: Breusch-Pagan-Godfrey
Null hypothesis: Homoskedasticity

F-statistic	0.928682	Prob. F(3,10)	0.4622
Obs*R-squared	3.050563	Prob. Chi-Square(3)	0.3839
Scaled explained SS	0.792064	Prob. Chi-Square(3)	0.8514

Test Equation:
Dependent Variable: Y
Method: Least Squares
Date: 03/31/26 Time: 06:00
Sample: 2011 2024
Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	121.5735	61.59440	1.973775	0.0767
X1	0.079728	19.40698	0.004108	0.9968
X2	-21.44049	16.67946	-1.285443	0.2276
X3	181.4428	185.8127	0.976483	0.3519

R-squared	0.217897	Mean dependent var	66.14179
Adjusted R-squared	-0.016733	S.D. dependent var	62.95187
S.E. of regression	63.47639	Akaike info criterion	11.37417
Sum squared resid	40292.52	Schwarz criterion	11.55676
Log likelihood	-75.61919	Hannan-Quinn criter.	11.35727
F-statistic	0.928682	Durbin-Watson stat	1.313570
Prob(F-statistic)	0.462207		

Appendix 7. Multicolitarity Test Results of the Processing Industry Sector

Variance Inflation Factors
Date: 03/31/26 Time: 06:08
Sample: 2010 2024
Included observations: 15

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	17.30352	13.18215	NA
X1	1.717782	16.44794	1.776142
X2	1.268867	27.49371	2.646154
X3	157.4717	11.91377	1.676071

Appendix 8. Autocorrelation Test Results of the Processing Industry Sector

Breusch-Godfrey Serial Correlation LM Test:
Null hypothesis: No serial correlation at up to 2 lags

F-statistic	1.840913	Prob. F(2,8)	0.2199
Obs*R-squared	4.412458	Prob. Chi-Square(2)	0.1101

Test Equation:
Dependent Variable: RESID
Method: Least Squares
Date: 03/31/26 Time: 06:12
Sample: 2011 2024
Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.936394	4.147019	0.466936	0.6530
X1	-1.263287	1.393706	-0.906422	0.3912
X2	0.779875	1.118786	0.697072	0.5055
X3	-5.603048	13.42582	-0.417334	0.6874
RESID(-1)	0.665544	0.362839	1.834269	0.1040
RESID(-2)	-0.441595	0.378004	-1.168229	0.2763

R-squared	0.315176	Mean dependent var	3.89E-15
Adjusted R-squared	-0.112840	S.D. dependent var	3.759816
S.E. of regression	3.966275	Akaike info criterion	5.891059
Sum squared resid	125.8507	Schwarz criterion	6.164941
Log likelihood	-35.23741	Hannan-Quinn criter.	5.865706
F-statistic	0.736365	Durbin-Watson stat	2.003325
Prob(F-statistic)	0.616790		

Appendix 9. Multiple Linear Regression Results of Processing Industry Sector

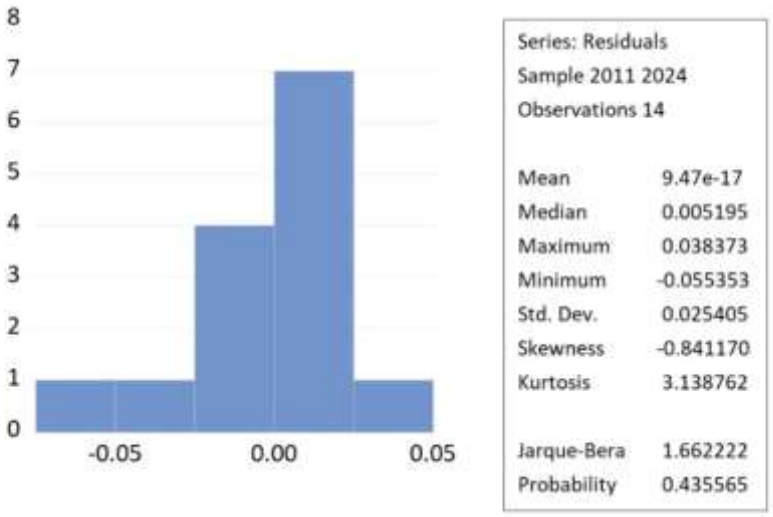
Dependent Variable: Y
Method: Least Squares
Date: 03/31/26 Time: 06:19
Sample (adjusted): 2011 2024
Included observations: 14 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	26.43587	4.159751	6.355159	0.0001
X1	-2.742969	1.310642	-2.092844	0.0628
X2	7.622223	1.126440	6.766647	0.0000
X3	30.24929	12.54877	2.410537	0.0366

R-squared	0.932200	Mean dependent var	64.73279
Adjusted R-squared	0.911860	S.D. dependent var	14.43950

S.E. of regression	4.286850	Akaike info criterion	5.983938
Sum squared resid	183.7708	Schwarz criterion	6.166525
Log likelihood	-37.88756	Hannan-Quinn criter.	5.967036
F-statistic	45.83095	Durbin-Watson stat	1.231224
Prob(F-statistic)	0.000004		

Appendix 10. Hail Normality Test *(Jarque-bera)* Large trade and retail sectors



Appendix 11. Heteroskedeticity Test (*Breusch-Pagan-Godfrey)* Large and retail trade sectors

Heteroskedasticity Test: Breusch-Pagan-Godfrey
Null hypothesis: Homoskedasticity

F-statistic	2.338597	Prob. F(3,10)	0.1351
Obs*R-squared	5.772348	Prob. Chi-Square(3)	0.1232
Scaled explained SS	3.149408	Prob. Chi-Square(3)	0.3692

Test Equation:
Dependent Variable: Y
Method: Least Squares
Date: 03/31/26 Time: 07:02
Sample: 2011 2024
Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.004314	0.003948	1.092567	0.3002
X1	0.002230	0.003721	0.599242	0.5623
X2	0.000103	6.59E-05	1.569925	0.1475

X3	0.002866	0.002504	1.144861	0.2789

R-squared	0.412311	Mean dependent var	0.000599
Adjusted R-squared	0.236004	S.D. dependent var	0.000910
S.E. of regression	0.000795	Akaike info criterion	-11.20152
Sum squared resid	6.32E-06	Schwarz criterion	-11.01893
Log likelihood	82.41061	Hannan-Quinn criter.	-11.21842
F-statistic	2.338597	Durbin-Watson stat	1.529967
Prob(F-statistic)	0.135144		

Appendix 12. Multicollinearity Test Large trade and retail sector

Variance Inflation Factors
Date: 03/31/26 Time: 06:55
Sample: 2010 2024
Included observations: 15

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.020695	345.3156	NA
X1	0.018384	3.227289	1.000390
X2	5.77E-06	2.991737	1.247532
X3	0.008320	320.3073	1.247097

Appendix 13. Autokorelasi Test Large trade and retail sector

Breusch-Godfrey Serial Correlation LM Test:
Null hypothesis: No serial correlation at up to 2 lags

F-statistic	0.516709	Prob. F(2,9)	0.6132
Obs*R-squared	1.544963	Prob. Chi-Square(2)	0.4619

Test Equation:
Dependent Variable: Y
Method: Least Squares
Date: 03/31/26 Time: 06:52
Sample: 2010 2024
Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.003082	0.438461	0.007028	0.9945
X1	0.001246	0.056350	0.022110	0.9828
X2	0.000191	0.001195	0.159697	0.8766
X3	0.004767	0.177659	0.026830	0.9792

R-squared	0.102998	Mean dependent var	7.54E-16

Adjusted R-squared	-0.395337	S.D. dependent var	0.012381
S.E. of regression	0.014625	Akaike info criterion	-5.322954
Sum squared resid	0.001925	Schwarz criterion	-5.039734
Log likelihood	45.92215	Hannan-Quinn criter.	-5.325971
F-statistic	0.206683	Durbin-Watson stat	1.906318
Prob(F-statistic)	0.951348		

Appendix 14. Multiple Linear Regression Large trade and retail sectors

Dependent Variablel : Y
Method: Least Squares
Date: 03/31/26 Time: 07:16
Sample (adjusted): 2011 2024
Included observations: 15

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.003760	0.008546	0.439973	0.6693
X1	0.356144	0.167917	2.120951	0.0599
X2	-0.000956	0.001389	-0.688120	0.5070
X3	0.865709	0.361144	2.397130	0.0375

R-squared	0.904102	Mean dependent var	0.057006
Adjusted R-squared	0.875333	S.D. dependent var	0.045917
S.E. of regression	0.016213	Akaike info criterion	-5.171107
Sum squared resid	0.002628	Schwarz criterion	-4.988519
Log likelihood	40.19775	Hannan-Quinn criter.	-5.188009
F-statistic	31.42585	Durbin-Watson stat	1.836209
Prob(F-statistic)	0.000021		