



Time Series Analysis of Ukraine's IT Export Performance

Bohdan Lypovetskyi, Ph.D. Student in Economics
Economic Cybernetics and System Analysis Department,
Simon Kuznets Kharkiv National University of Economics

Scientific supervisor:

Prof. Lidiya Guryanova, Doctor of Science in Economics
Economic Cybernetics and System Analysis Department,
Simon Kuznets Kharkiv National University of Economics



Content

• Topicality of the study.....	3
• The dynamics of computer services exports.....	4
• Trend-seasonal decomposition of time series.....	5
• The estimated coefficients for the parameters of the model.....	6
• Actual and predicted values of computer services export volumes.....	7
• Forecast of computer services export volumes with confidence intervals.....	8
• The residuals diagnostic plots.....	9
• Conclusion.....	10



Topicality of the Study

The information technology sector is a crucial driver of economic development.

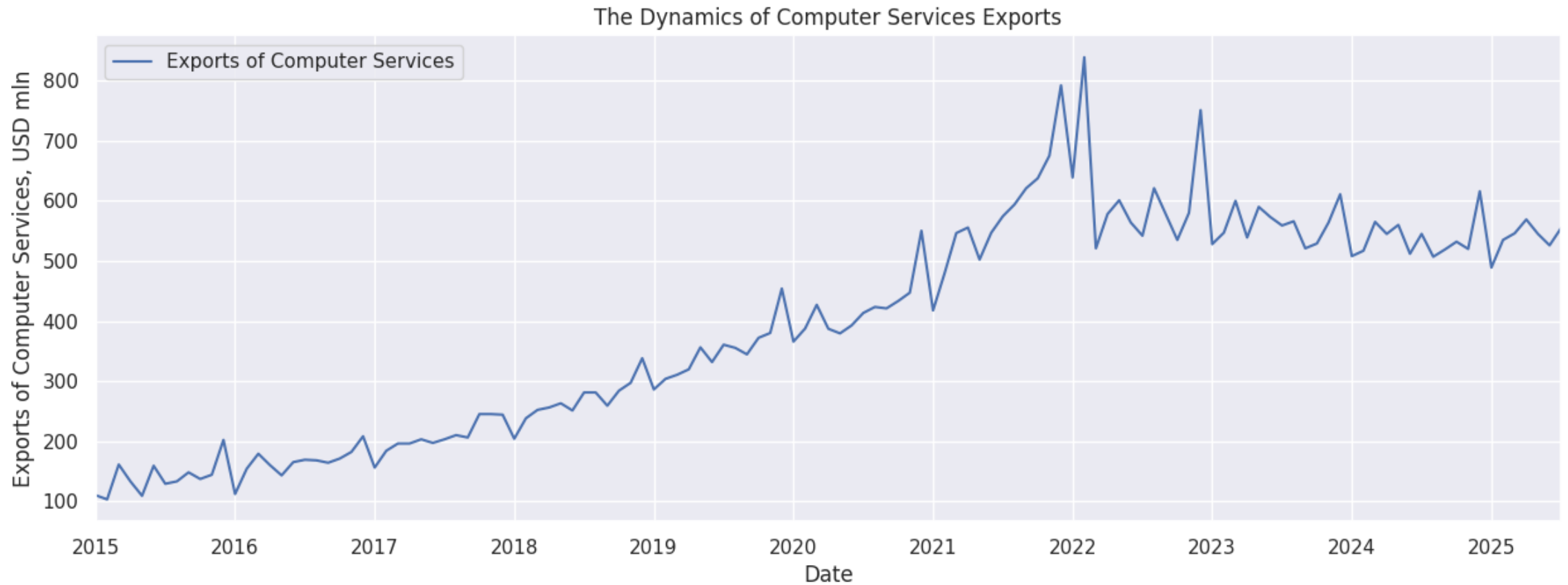
The Ukrainian IT market is undergoing significant dynamic transformations due to the full-scale war.

Since the Ukrainian IT market is outsourcing-oriented, IT service exports can provide valuable insights into industry conditions.

Modeling the dynamics of computer services exports enables us to make conclusions regarding overall health of the IT-sector.

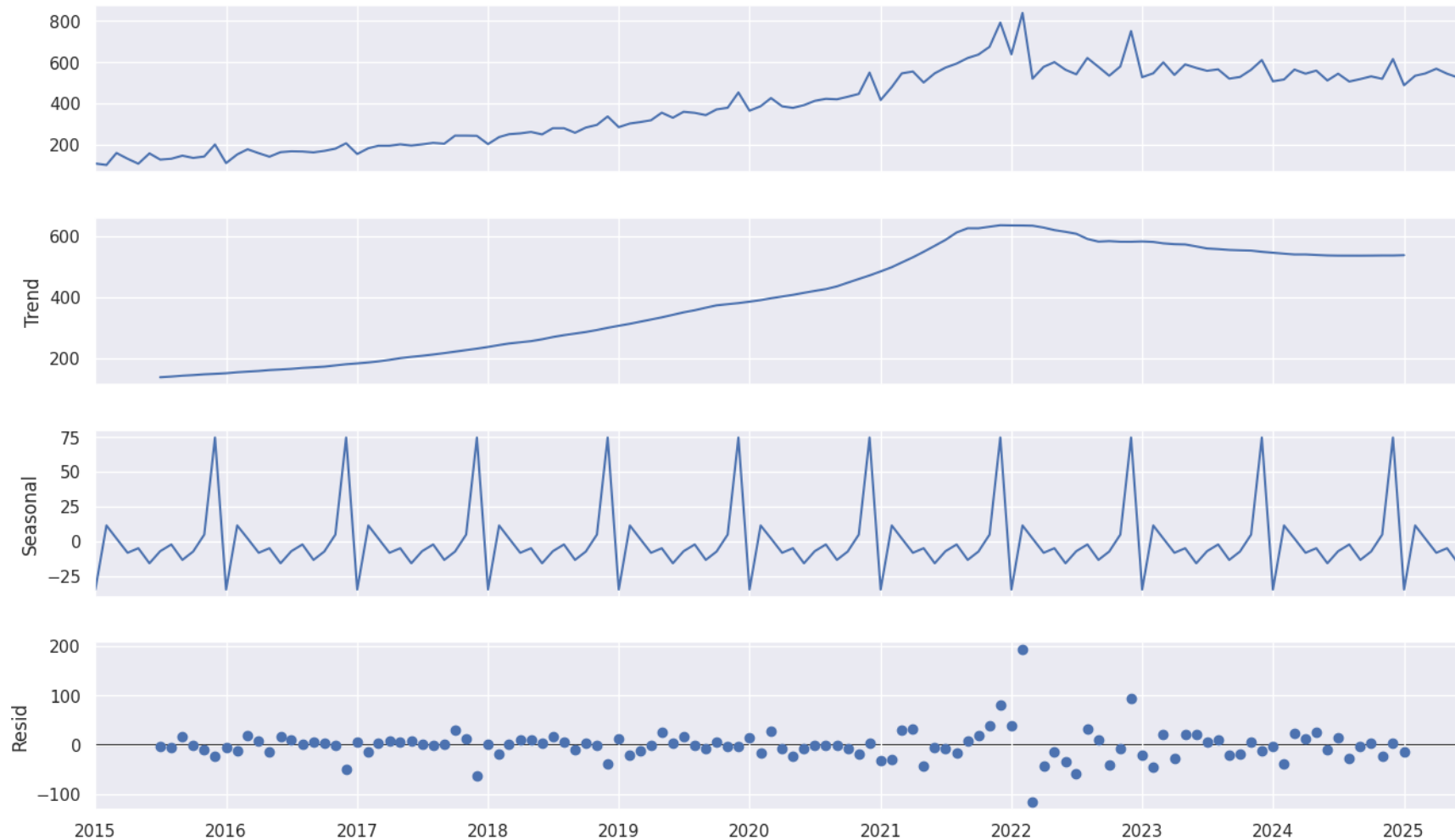


The Dynamics of Computer Services Exports





Trend- Seasonal Decomposition of Time Series



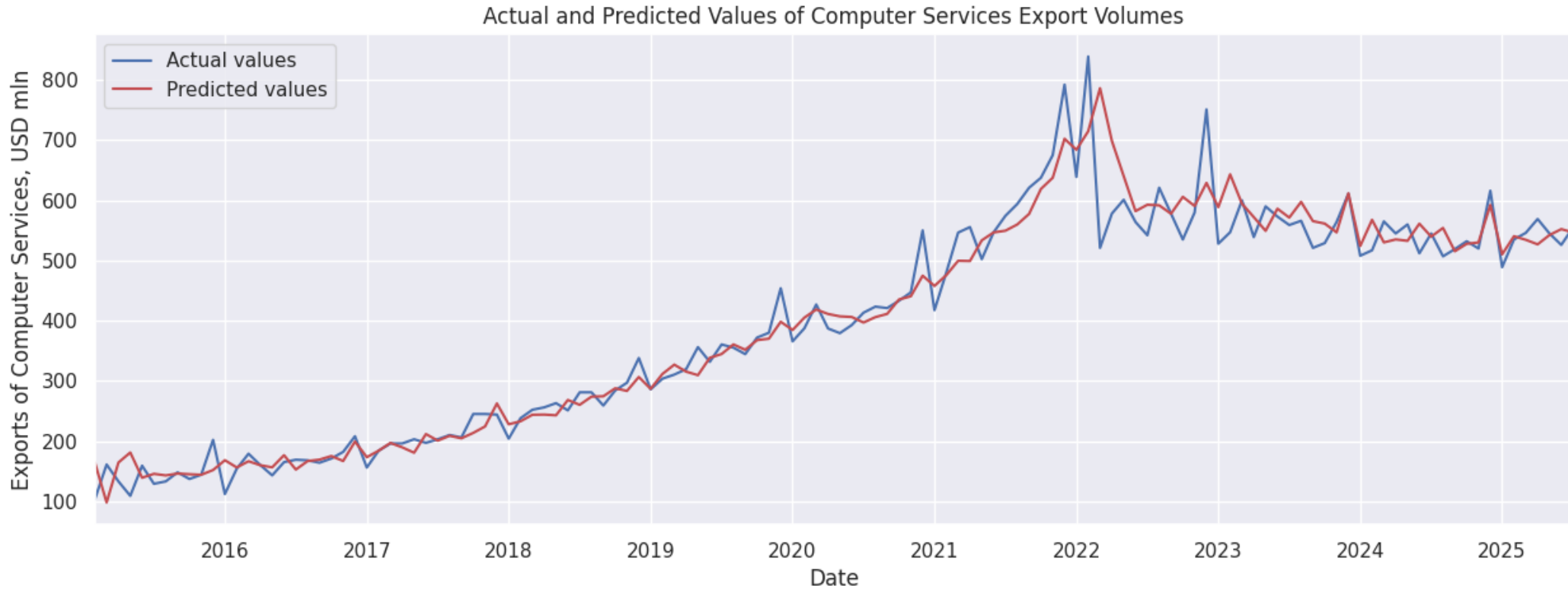


The Estimated Coefficients for the Parameters of the Model

	coef	std err	z	P> z	[0.025	0.975]
ar.L1	-1.6583	0.056	-29.852	0.000	-1.767	-1.549
ar.L2	-0.9848	0.088	-11.146	0.000	-1.158	-0.812
ar.L3	-0.3237	0.057	-5.643	0.000	-0.436	-0.211
ma.L2	-0.9614	0.093	-10.352	0.000	-1.143	-0.779
ar.S.L12	0.9971	0.036	27.504	0.000	0.926	1.068
ma.S.L12	-0.9503	0.298	-3.190	0.001	-1.534	-0.366

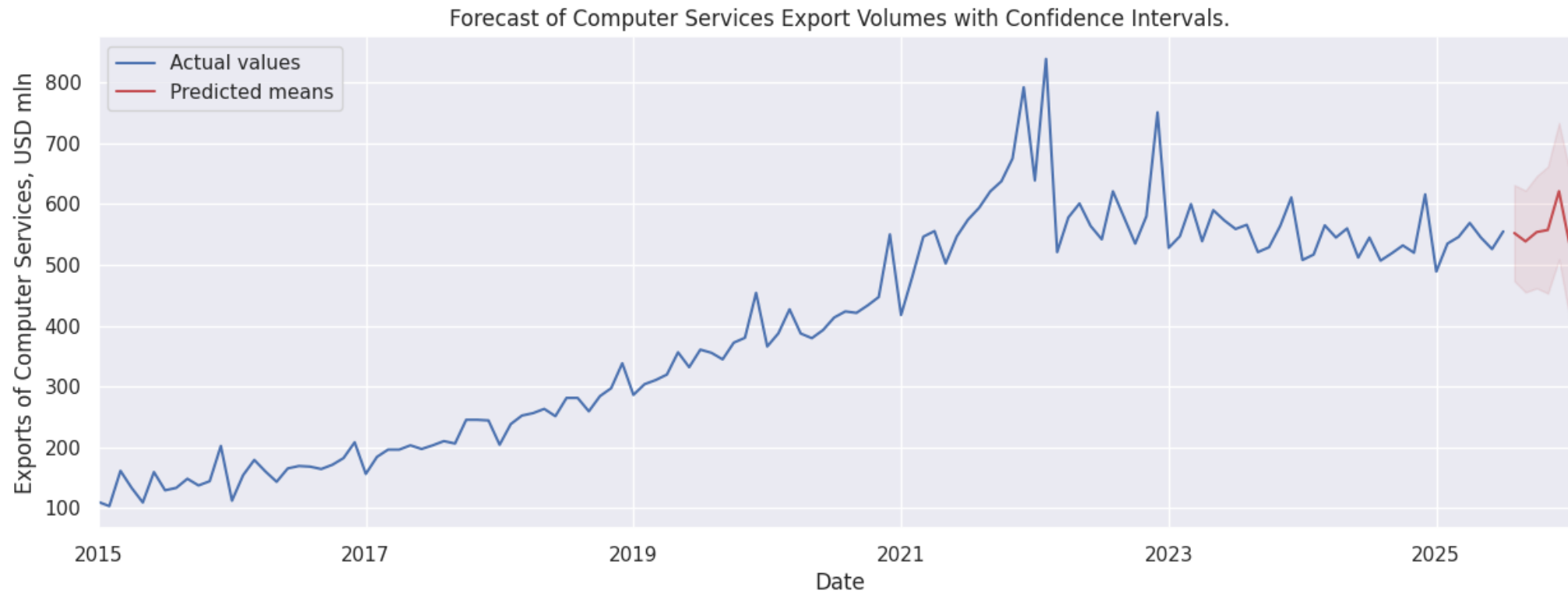


Actual and Predicted Values of Computer Services Export Volumes

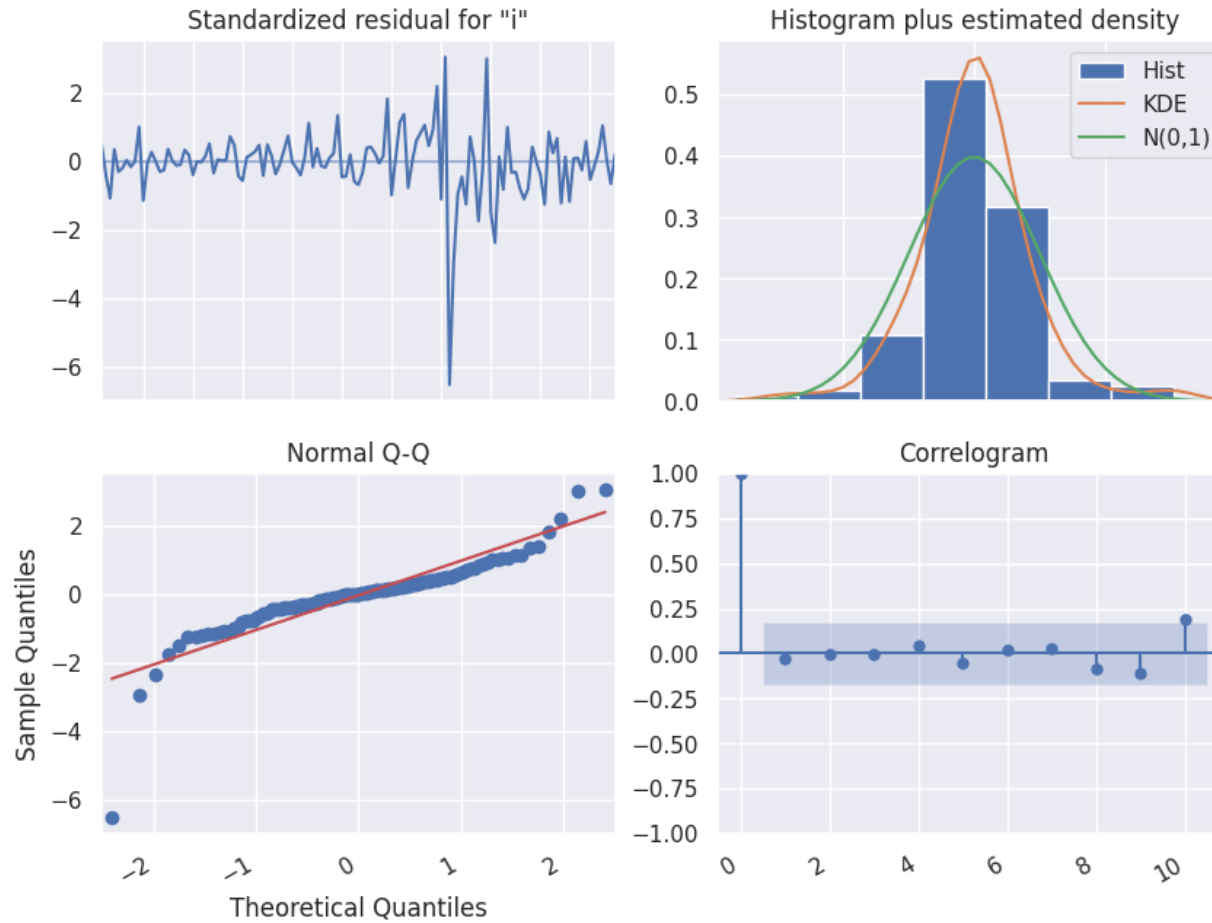




Forecast of Computer Services Export Volumes with Confidence Intervals



The Residuals Diagnostic Plots





Conclusion

- Modeling results indicate that the export dynamics of computer services are expected to remain stable over the next six months.
- By December 2025, computer service exports are projected to reach approximately \$620 million, a figure comparable to last year's levels.
- This stable trajectory reflects the robust development of the IT sector and confirms its resilience to external shocks.

Thank you for your attention