CHAPTER V. CONCLUSION

A. Conclusion

Based on the research conducted on time series analysis using the ARIMA model to forecast Coffee Productivity in West Sumatra from 2000 to 2023, can be drawn:

1. Although West Sumatra has experienced gradual improvements in coffee productivity in recent years, the overall yield remains below international benchmarks.
2. The best model identified for forecasting Coffee Productivity in West Sumatra is the ARIMA(1,3,0) model. The model choosen based on the significant test and the residual is white nose with MAPE value is 41.23 %, which indicate the models is reasonable to forecast. The forecasted productivity of Coffee in West Sumatra from 2024 to 2028 shows a continuous decline. Productivity is expected to decrease from 1 tons/ha in 2024 to 0.6266 tons/ha in 2025 and further to 0.6125 tons/ha in 2026, followed by a sharp drop to 0.0538 tons/ha in 2027. By 2028, the projected value reaches -0.1709 tons/ha, indicating severe productivity challenges.

B. Recomendation

1. Based on the forecasting of Coffee Productivity in West Sumatra, it is essential for the government to invest in and improve agricultural technology to enhance productivity levels. Consistent and proper fertilization is also necessary to support plant growth and productivity, which depends on the accessibility and affordability of fertilizers.
2. For future research, it is crucial to explore the various factors influencing Coffee Productivity, with a particular emphasis on climate factors and technological advancements. Investigating how climate change impacts crop yields and understanding the role of technology in enhancing resilience can provide valuable insights.