

Abstract

This study conducts time series analysis on monthly wine production data from over 30 years. Agricultural systems, such as that of the grape vine, will be impacted as climate change continues to affect the world. Supporting literature and a brief description of the time series analysis process is reviewed. Then the method of this study's data analysis is outlined with results following. The time series considered was gallons of still wine produced by region, using data from the U.S. Department of the Treasury Alcohol and Tobacco Tax and Trade Bureau's website of monthly wine statistics. The climate regions were determined by the U.S. Department of Commerce's National Oceanic and Atmospheric Administration. Auto Regressive Integrated Moving Average models (ARIMA) were used to model the data by region and then to forecast wine production into the future. The Southeast, West, Northern Rockies and Plains, and Northeast regions are forecasted to continue with constant level growth. The South, Southwest, and Northwest regions see slight growth, while the Upper Midwest and Ohio Valley regions are forecasted to continue producing at their recently increased levels.

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