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# Time Series Analysis of the Unemployment Rate in Kankakee County, Illinois

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Oral Presentation O5.2

**TIME SERIES ANALYSIS OF THE UNEMPLOYMENT RATE IN  
KANKAKEE COUNTY, ILLINOIS**

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During the past two decades, Kankakee County, Illinois, has seen its unemployment rate rise and fall with the national average. However, following the recent financial crisis, Kankakee County has seen an increase in the unemployment rate well above the national average. This study explores the time-series analysis qualities of Kankakee's unemployment rate trend. By analyzing the relationships between the Kankakee County unemployment rate and the United States national unemployment rate, we hope to provide insight into what may be causing this divergence. This study employs unemployment rate data collected monthly between January 1990 and December 2011 by the Bureau of Labor Statistics totaling 270 observations. We establish the presence of unit roots in the data and induce stationarity by computing the first-order differences of their logarithmic values. The best-fitting autoregressive and moving average (ARMA) structure is determined by using the Box-Jenkins methodology. Finally, we perform short-term forecasting.