**Employment Forecasting Model Methodology**

CEDBR’s forecasting model for the Kansas and Wichita provides a seasonally-adjusted quarterly forecast of employment in seventeen economic sectors, using a collection of local, state, and national data. These equations are estimated jointly with forecasts for employment in Wichita, the state of Kansas, and Topeka in these sectors.

CEDBR’s model uses a dataset with over 20 years of local, state and national economic data to make its forecasts. At the local level, this data includes sectoral employment, population, local city government budgets, unemployment rates, and retail sales. State level data includes sectoral employment, state government budgets, retail sales, unemployment rates, population and wages. At the national level, data including national employment, national GDP and its components, motor vehicle sales, federal government budgets, mortgage rates, industrial utilization rates, and others are used. Additionally, external national economic forecasts are used to supplement the center’s local and state forecasts.

After the data is compiled, CEDBR uses seasonal adjustment techniques developed by the Census Bureau to correct for seasonal variations in each data series. Some variables are also adjusted for inflation and to correct for time trends. The core estimation process of the forecast jointly estimates every equation in the model simultaneously. This process allows shocks to one local economy to be factored into the forecast to the other local economies, representing the interconnectivity of the modern economies between Wichita, Topeka, the state of Kansas and Kansas City. The interconnectivity also allows the forecast of each individual sector within the local economy to be appropriately affected by the other major sectors in that economy. Additional time series statistical methods are used to ensure consistent estimation and forecasting over time, correcting for potential serial correlation or heteroskedasticity problems.