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### The Impact of Airline Concentration on Smaller Communities and Airports

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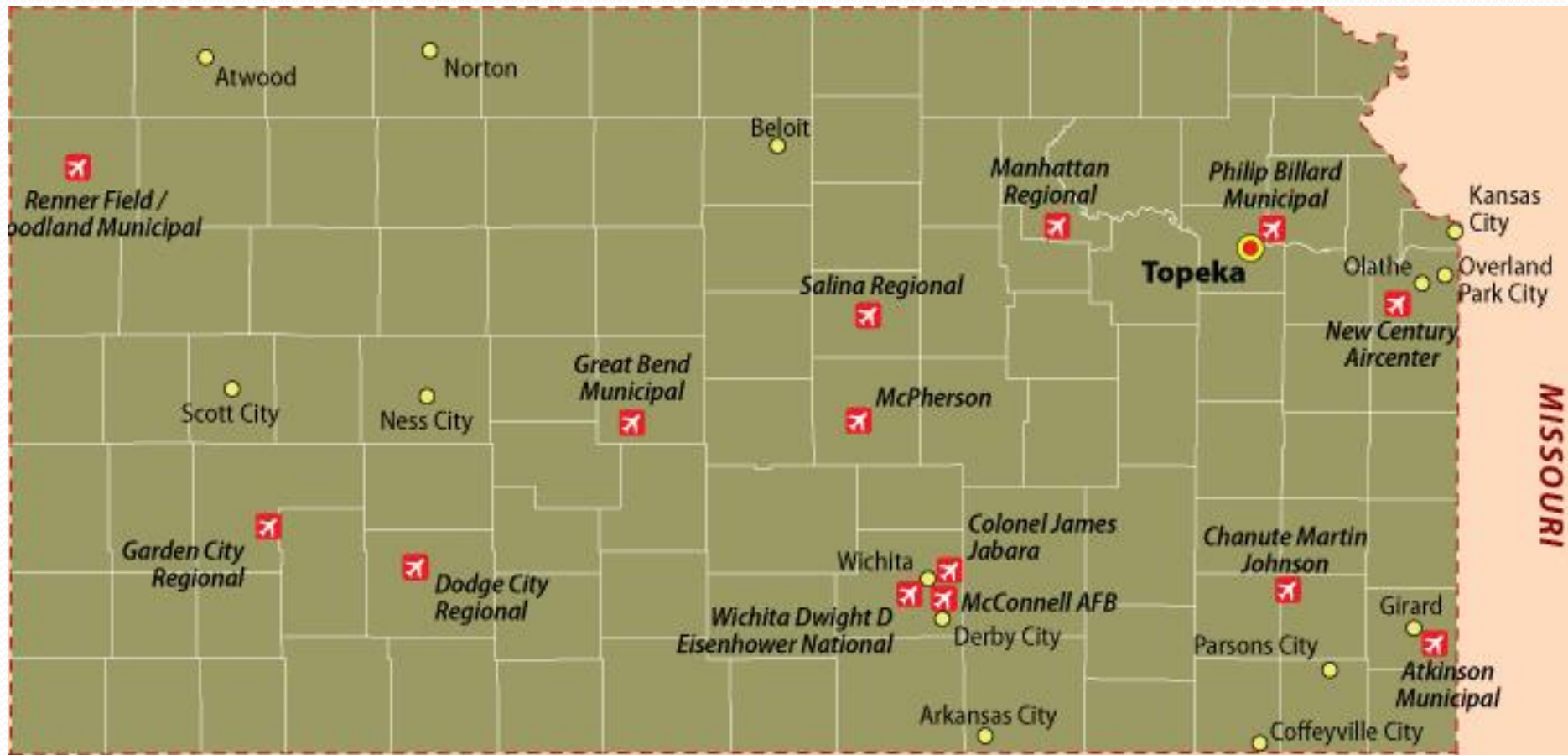
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# The Impact of Airline Concentration on Smaller Communities: The Kansas Case

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# Kansas State Airport Map



# Objectives of the study

- To discuss the impact of market structure changes in the U.S. airline industry
- To analyze and measure the price-concentration relationship in the Kansas airline industry

# Effects of Rising Concentration on the Airline Industry

- Market concentration is the degree or extent of domination of sales accounted for by a few large companies.
- Higher concentration causes an increase in airfares due to reduced competition among dominant airline companies.
- Higher concentration enables the dominant airline to cutback seats.
- Higher concentration reduces the number of airlines servicing small destination airports.

# Theoretical Model

- Following earlier studies by Joesch and Zick (1994), Bhadra (2004), and Singh and Zhu (2008), the general model is of the logarithmic form:

$$\begin{aligned} \text{Log(fare)} = & b_0 + b_1 * \text{log(income)} + \\ & b_2 * \text{log(population)} + b_3 * \text{log(distance)} + \\ & b_4 * \text{Carriers} + b_5 * \text{Nearbyairport} + b_6 * \text{Hub} + \\ & b_7 * T_{2005} + b_8 * T_{2010} + b_9 * T_{2015} + e \end{aligned}$$

# Theoretical Model

- fare is the dependent variable in \$;
- income is real per capita income in the geographic area of the origin airport;
- population is the population of the market area where the airport is located;
- distance is the trip distance (in miles) for a particular fare;
- carriers is the number of airline carriers;
- nearbyairport is a dummy variable which equals one if there is a another airport close to or within the origin city area;
- hub is a dummy variable which equals one if origin airport is a hub;
- T2005, T2010, and T2015 represent time fixed effects; and
- e is the error term.

# Determinants of Airfares in Kansas

- Variable of interest:
  - Carrier concentration
- Control Variables:
  - Trip Distance from Kansas to destination airports
  - The presence of an airport hubs
  - Nearby Airports
  - Local Area characteristics (per capita income & population)



# Findings

Variable	Coefficient	t-Statistic
Constant	3.71	1.46
Per capita income	0.05	0.20
Population	-0.08	-1.44
Trip distance	0.27	7.35***
Number of carrier airlines	-0.02	-1.68*
Nearby airport	0.04	0.65
Hub	0.24	1.75*
T <sub>2005</sub>	0.16	3.83***
T <sub>2010</sub>	0.21	4.42***
T <sub>2015</sub>	0.35	5.45***
Adjusted R-squared	0.13	
F-statistic	15.83 (prob<0.0000)	

# Findings

- Trip distance and the presence of a hub are the most important determinants of airfares for the Kansas airports
  - Directly and significantly related to price
- The number of carriers is negatively and significantly related to airfares
- The time variables reflect the fact that time fixed effects are present and that airfares have been on a rising trend since 2000
- The model as a whole is significant based on the F-statistic but only explains 13% of the variations in airfare

# Conclusions and Further Study

- Airline market concentration has a significant impact on the price of the airline tickets
- The airline ticket price increase is directly correlated with the distance from the original airport to the destination airport and with presence of airport hub
- Further research plans include testing all the airports in the U.S. as well as a study of other explanatory factors such as the presence of metropolitan areas and international hubs