



Project Summary

Texas Department of Transportation

0-4871: Transportation and the Texas Economy

Background

Forecasts predict that the Texas population will increase more than 60% over the next 25 years. Maintaining an effective, efficient transportation system is vital to the growing Texas economy, particularly in light of this rapid growth in population and the strain it will put on our transportation infrastructure.

The purpose of project 0-4871, *Transportation and the Texas Economy*, was to analyze and evaluate some aspects of the state's transportation system and its role in the Texas economy. The research used existing national and Texas data to provide an economic profile of the importance of the transportation system and its services within the state.

What the Researchers Did

Researchers pursued the broad task of identifying the importance of transportation and related services to the Texas economy by:

- reviewing and analyzing current studies from Texas and other states on transportation in the state's economy—including surveying other states about their transportation productivity;
- reviewing methods used in U.S. government economic accounts to generate measures for the transportation sector and derive empirical estimates for transportation values for Texas;
- reviewing methods and studies from the Eno Transportation Foundation and the Transportation Association of America (TAA) for calculating the value of transportation in the economy;
- evaluating various state-level economic models; and
- developing a methodology for estimating transportation values in Texas.

Research Performed by:

Texas Transportation Institute (TTI),
The Texas A&M University System

Center for Transportation Research (CTR),
The University of Texas at Austin

West Texas A&M University (WTAMU)

Research Supervisor:

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Project Completed:

8-31-06

What They Found

The transportation system in Texas has enormous impact on the state's economy. Virtually no sector goes untouched by the positive impact of transportation or the challenges the system will soon face with a growing population.

Researchers found that studying the relationship between the state's annual transportation costs and the gross Texas product (GTP) could be a valuable way to understand the value of transportation as a component of the Texas economy. Researchers developed a means to quickly and accurately forecast transportation costs for Texas by evaluating estimates of:

- GTP,
- constant-dollar average national gasoline prices,
- Texas population,
- Consumer Price Index, and
- number of new passenger cars (not including trucks) purchased by Texans.

Researchers utilized the Granger causality test to see causality relationships among transportation-related variables. The Granger causality test indicated that transportation costs, the Texas population, the GTP, and other variables impact and affect one another.

Using the IMPLAN database and model for Texas, with data from 2002, researchers studied the economic impact of transportation on employment. The database indicated that employment in the transportation sector averaged 421,774 during 2002, or 3.4% of total employment in Texas. These data were further sorted to reveal that the three highest employment sectors within transportation were truck (38.4%), air (16.9%), and support services (13.9%).

What This Means

Texas roadways currently account for 8% of the nation's roadways, with more than 218 billion vehicle miles traveled annually. Other modes of transportation, including rail, air, and pipelines, contribute to the state's robust transportation economy, resulting in thousands of jobs and billions of dollars contributed to the state's economy.

The research results for this project illustrate the vastness of the transportation network in Texas and its impact on the economy. Projected increases in population and vehicle miles of travel will challenge the Texas Department of Transportation's strategy to meet the needs of those living and working in Texas and necessitate accurate models and means of calculating the impact transportation infrastructure, spending, and employment has on the Texas economy.

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