

A Message from the JTRF Co-General Editors

This issue of *JTRF* contains the usual wide variety of contemporary transportation topics that makes *JTRF* different from other transportation journals. Topics in this issue include the following:

- Congestion pricing
- Transportation infrastructure and economic activity
- Rumble strips and highway safety
- Productivity trends of Australia's railroads
- River transportation of grain
- Measuring passengers' satisfaction and their mode choices
- Refrigerated food transport
- Airline financial condition.

In "Credit Based Congestion Pricing: Expert Expectations and Guidelines for Application," Pradeep Gulipalli, Sukumar Kalmange, and Kara Kockedman discuss a novel concept of dealing with the negative equity aspects of congestion pricing by allocating monthly budgets to eligible travelers to pay congestion tolls. The authors surveyed a wide variety of experts for feedback on credit distribution, revenue uses, public reaction, appropriate technology and configuration, enforcement issues, and system-wide economic, land use, and business impacts. Based on this feedback, the authors provide detailed recommendations for implementing credit-based congestion pricing, including estimation of costs, in the Austin, TX, region.

Steven Peterson and Eric Jessup examine the relationship between transportation infrastructure and economic activity in "Evaluating the Relationship Between Transportation Infrastructure and Economic Activity: Evidence from Washington State." Peterson and Jessup use two Washington highway infrastructure datasets in combination with county-level employment, wages, and establishment numbers for several industrial sectors for the 1990-2004 period. Relationships are measured using vector autoregressions, error correction models, and directed acyclic graphs. The authors found that the relationships between infrastructure investment and economic activity are often weak and not geographically uniform in effect.

In "Evaluation of Football Shaped Rumble Strips Versus Rectangular Rumble Strips," Margaret Rys, Lucas Gardner, and Eugene Russell evaluate a new design of rumble strips, which are indentations along highway shoulders to warn drivers who are drifting off the road with an audible and tactile alert. The researchers compared the two types of rumble strips in terms of water and debris collection, interior sound and vibration production, and the opinions of bicyclists. Based on this information the authors found no significant differences in the two types of rumble strips.

Nick Wills-Johnson utilizes a unique century-long dataset to study productivity trends of Australia's railroads in, "The Productivity of Australia's Railways in the 20th Century." Wills-Johnson uses two measures of productivity. One method is the Tornquist index, in which total factor productivity is made a function of the share in total revenue of each of the railroad's outputs, the quantity of each of the railroad's outputs, the share of total costs of each input, and the quantity of each input used by the railroad. He also used a modified Tornquist index that allowed comparison of the productivity of each railroad to the other railroads. The author found that technical change is more likely to improve productivity when focused on the parts of the railway business where economic factors are more important. His analysis also found that productivity increased as a result of increased traffic which increased network density. Partial deregulation of the railroads also increased productivity.

In “The Upper Mississippi and Illinois Rivers as Grain Transportation Arteries: A Spatial Equilibrium Analysis,” Luis Fellin, Stephen Fuller, John Kruse, Seth Meyer, and Abner Womack estimate the annual contribution of these rivers to Midwest grain producer revenues. They also evaluate alternative grain routings caused by a catastrophic event at Lock and Dam 27 near St. Louis. Using international spatial equilibrium analysis they assume three scenarios that involve various capacity constraints on grain flows via alternative transport routings and port areas along with three alternative rail price responses. The authors concluded that the annual value of the upper Mississippi and Illinois Rivers for grain transport ranges from \$229 to \$806 million. The value primarily depends on pricing decisions by competing railroads.

Mohammed Obaidat uses Geographic Information Systems (GIS) to spatially map noise levels at high traffic volume intersections in “Spatial Mapping of Traffic Noise Levels in Urban Areas.” Obaidat collected noise data using discrete mapping technique at 29 intersections, as well as between intersections and adjacent neighborhood areas in Amman, Jordan. Data was collected for three peak traffic volume periods. The author concluded that the developed GIS noise maps can serve a variety of city planning functions such as temporal monitoring of noise levels, identification of the location of highest noise levels, indicate land price variations, forecasting of the acoustic climate of urban areas, and zoning of land uses.

In “Modeling the Relationship Between Travelers’ Level of Satisfaction and Their Mode Choice Behavior Using Ordinal Models,” Mintesnot Gebeyehu and Shin-ei Takano estimate travelers’ satisfaction using an ordered logit model. Then the authors use the results of that analysis as an input to a binary mode choice model. The methodology is applied to public transport in Addis Ababa, Ethiopia. To increase satisfaction and use of public transport the authors recommend policies that emphasize public transport for the urban poor and the elderly, and that are sensitive to female trip needs. The authors found that level of satisfaction with public transport has a significant effect on the mode choice of travelers.

Barry Prentice and Ron McLachlin use qualitative research methods to examine the status of the “cold chain” serving the Mexican market for Canadian food products in “Refrigerated Food Transport from Canada to Mexico: Cold Chain Challenges.” Prentice and McLachlin conducted extensive structured interviews of exporters, carriers, importers, and intermediaries that are active in refrigerated product movements from Canada to Mexico. The authors found that refrigerated trucks are the most widely used mode for the export of fresh chilled and frozen food products to Mexico. Air transport is used for highly perishable luxury food products and transport of samples. Refrigerated railcars are used only when the product is frozen and the volume is sufficient to utilize their capacity. Marine transport has a minor role in the transport of frozen foods.

In “An Update on Airline Financial Condition and Insolvency Prospects Using the Altman Z” Score Model,” Richard Gritta, Bahram Adrangi, Brian Adams, and Nina Tatyana assess the current financial condition of the major U.S. airlines. They also compare the current financial strength of the industry to the 1995-1999 period when the carriers had record profits. The objectives are achieved by using the Altman Z” score model, a popular model of financial stress. The authors concluded that with the exception of Southwest, all carriers experienced a decline in their financial condition. They found a key factor in the decline was the combination of decreasing equity values and increasing use of debt.

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