



# UNIVERSITY TRANSPORTATION CENTER

# RESEARCH BRIEF

## Estimating County to County Transportation and Trade Flow

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### Background

Knowing what commodities are supplied and demanded within a region does not necessarily correspond to knowing where the commodities consumed within a region are produced. This difference relates primarily to inter-regional trade that is outside the

region at the regional level but inside at the higher level of regional aggregation. This outside-inside the region final demand distinction makes aggregating regional results to the national level problematic. A solution to this problem lies in a derivation of a multi-regional input-output model.



### Research Project

Previous research conducted by the PIs has estimated commodity supply and commodity demand for each county in the United States using numerous government datasets. This research will build on that research and develop a doubly constrained gravity model that estimates both where the supply of each county's commodity output is consumed and where the place of origin for the commodities demanded in each county. Once the regionally specific input-output accounts are populated a trade model will be applied to estimate the geographic source of those commodity inputs. Deriving multiregional social accounts requires complete estimation of inter-regional foreign and domestic commodity shipments. Because complete coverage of commodity-specific trade between all ports and county-pairs is not available the PIs propose developing a trade flow general equilibrium model to estimate county-to-county and county-to-port commodity shipments for tradable commodities and services among all US counties and ports.

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### ABOUT THE AUTHORS

The research team consisted of Mike Lowry, Philip Watson, and Greg Alward of the University of Idaho.

### ABOUT THE FUNDERS

This research was funded by the Pacific Northwest Transportation Consortium, with additional support from the University of Idaho.

### EXPECTED DATE OF COMPLETION

August 2022

### FOR MORE INFORMATION

<http://depts.washington.edu/pactrans/research/projects/estimating-county-to-county-transportation-and-trade-flow/>