

# Economics of Transportation: Looking Ahead

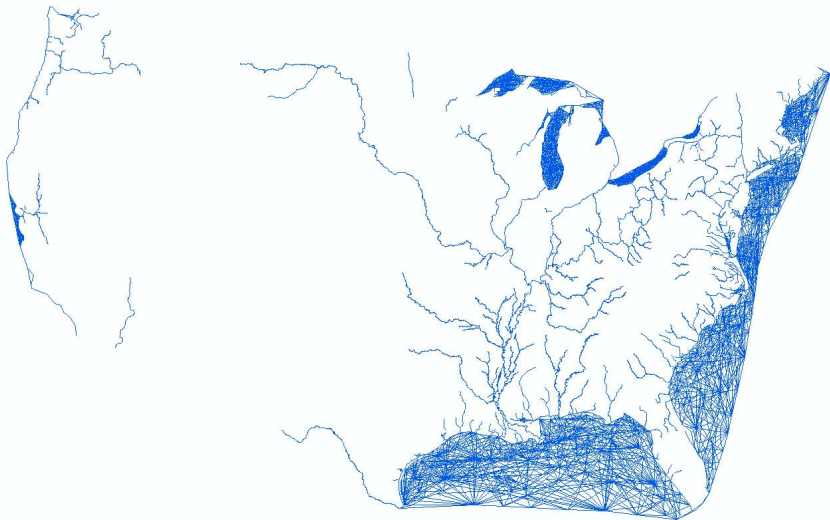
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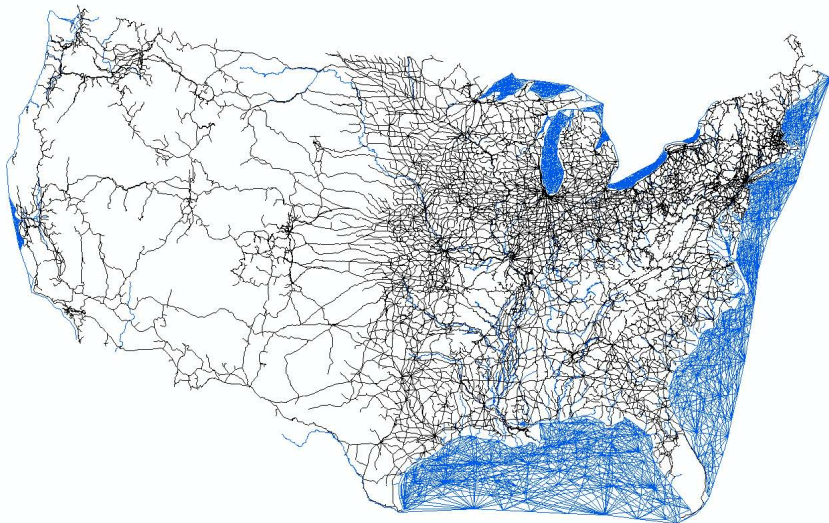
# Motivation

- Recent theoretical and empirical breakthroughs for understanding transportation and the spatial distribution of economic activity
- Theoretical advances
  - New quantitative spatial models are rich enough to connect to features of the data (e.g. gravity) and undertake counterfactuals for realistic public policy interventions (e.g. new subway line)
  - New methods for thinking about optimal public policy interventions
- Recent empirical advances
  - Geographical Information Systems (GIS) revolution has provided more data at smaller spatial scales than hitherto possible
  - “Credibility revolution” in econometrics with greater attention to finding plausibly exogenous sources of variation to identify the causal effects of transport infrastructure improvements

Example #1: US Transport Network (Water) 1840  
(Donaldson and Hornbeck 2016)

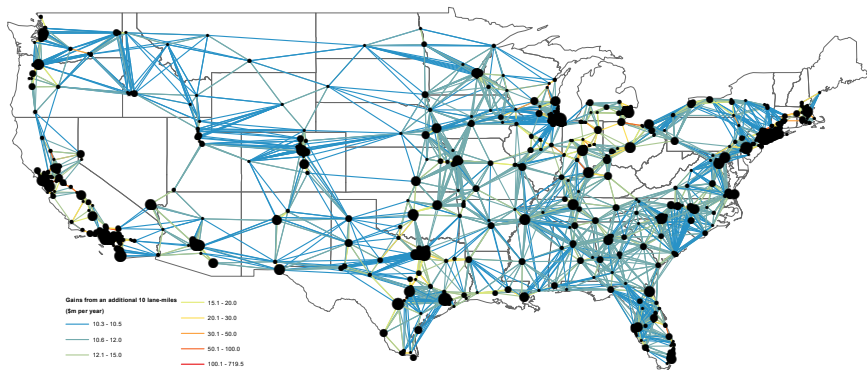


Example #1: US Transport Network (Water and Rail) 1911  
(Donaldson and Hornbeck 2016)

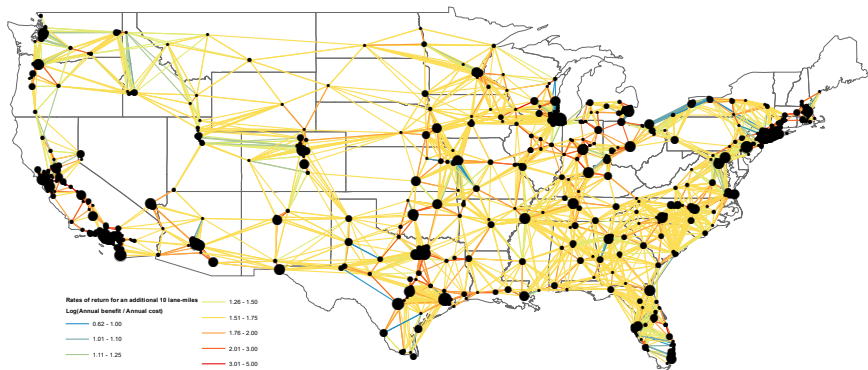




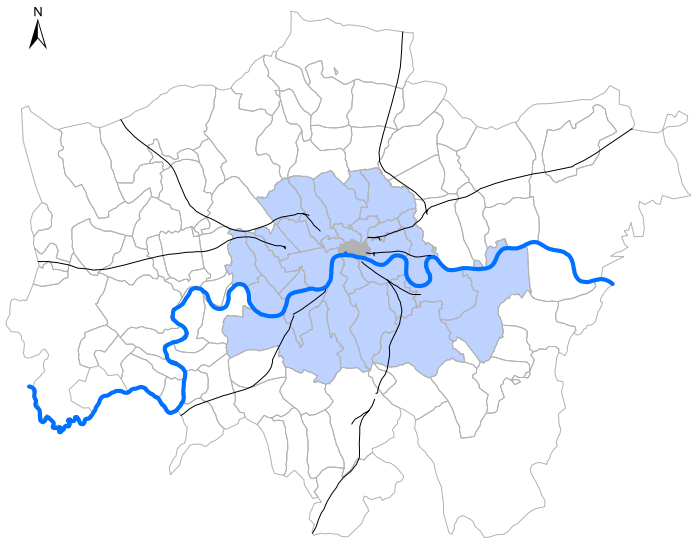
## Example #2: Benefits US Highway Investments 2012 (Allen and Arkolakis 2018)



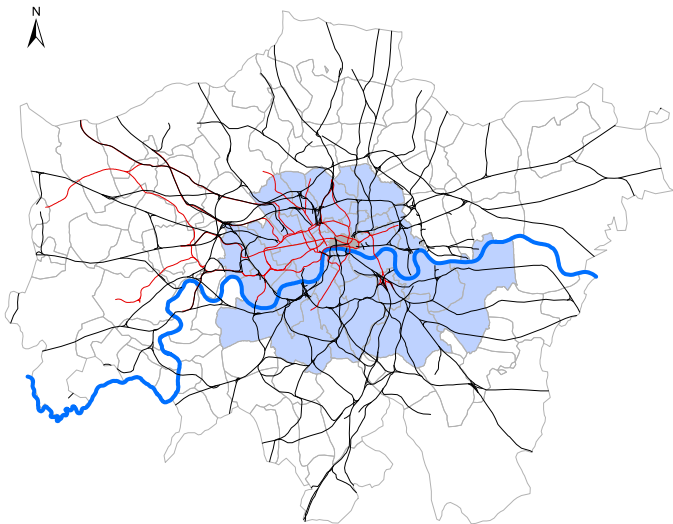
## Example #2: Benefits / Costs US Highway Investments 2012 (Allen and Arkolakis 2018)



### Example #3: London Rail Network 1831 (Heblich, Redding and Sturm 2020)



### Example #3: London Rail Network 1921 (Heblich, Redding and Sturm 2020)

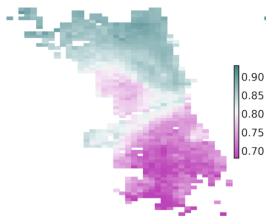


# Looking Ahead

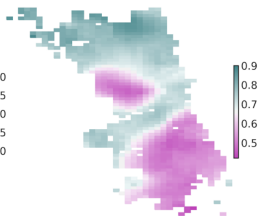
- Theoretical opportunities
  - New methods to estimate the impact of transport improvements on the spatial distribution of economic activity
  - Improved understanding of heterogeneous effects
  - Greater knowledge of the determinants of the agglomeration forces that are central to the impact of transport improvements
- Empirical opportunities including big data
  - Ride-hailing data (e.g. Uber and Lyft)
  - Smartphone data with Global Positioning System (GPS) information
  - Firm-to-firm data from sales (VAT) tax records
  - Credit card data with consumer and firm location
  - Barcode scanner data with consumer and firm location
  - Public transportation commuting data (e.g. Oyster card)
  - Satellite imaging data

# Example #1: Uber Data for Chicago (Cook, Diamond, Hall, List and Oyer 2019)

% male, trips



% male, driver homes within 1 mi



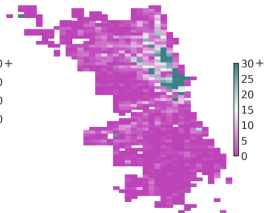
% male, adult population within 1 mi



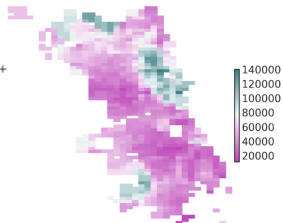
# of crimes, per 1,000



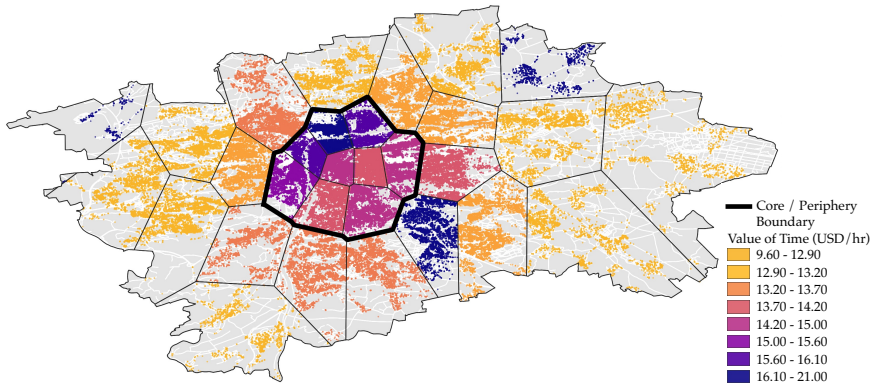
# of liquor licenses



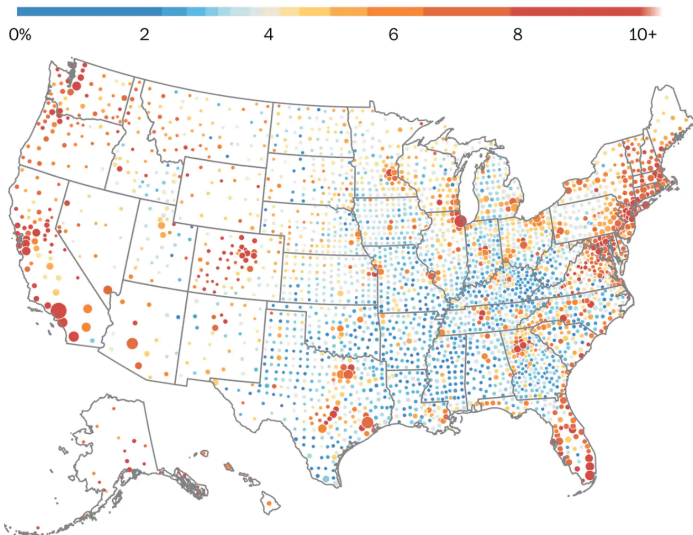
Median household income



## Example #2: Ride Hailing Data for Prague (Buchholz, Doval, Kastl, Matejka and Salz 2020)

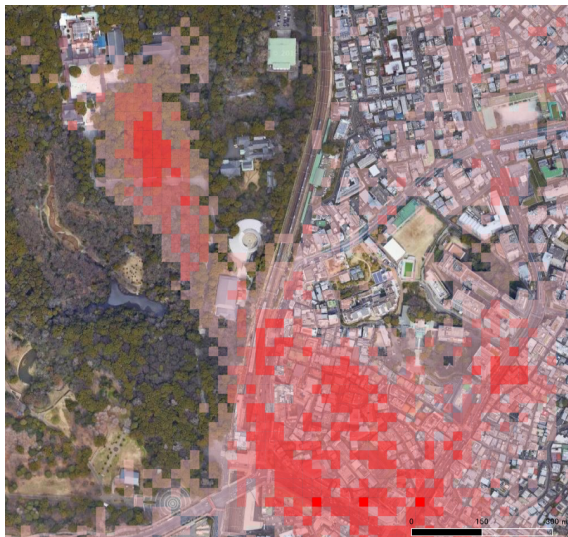


### Example #3: US Visa Card Data (Dolfen, Einav, Klenow, Klopack, Levin, Levin and Best 2020)

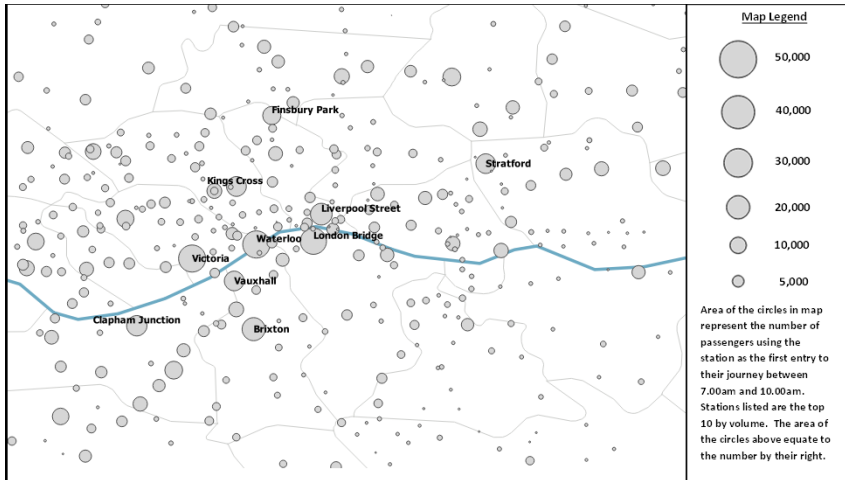




## Example #4: Tokyo Smartphone Data (Miyauchi, Nakajima and Redding 2020)



## Example #5: London Public Transport Data (Larcom, Rauch, Willems 2019)



Thank You