

How do Transportation Systems Affect the Economy?

Marlon G. Boarnet
Dept. of Planning, Policy, and Design
Department of Economics
Institute of Transportation Studies
UC Irvine



UNIVERSITY *of* CALIFORNIA • IRVINE

Introduction

Transportation Infrastructure, valued for:

Jobs, or the Infrastructure Itself?

Answer: Infrastructure

But what about the jobs

- George H.W. Bush, on signing ISTEA, 1991:
“jobs, jobs, jobs”
- Erie Canal and the ascendancy of New York over Philadelphia
- Ports of Los Angeles and Long Beach (point of entry or exit for over 40% of international cargo to/from U.S.)

Federal Funding

- American Recovery and Reinvestment Act:
 - \$46 billion for transportation (less than 10% of expenditures)
- FY 2008 Federal transfers to states:
 - Highways and transit = 18% of transfers excluding Medicare and TANF
- Funding is not overwhelming, but large, not tied to poverty, and potentially influenced by states

Transportation Infrastructure and the Economy

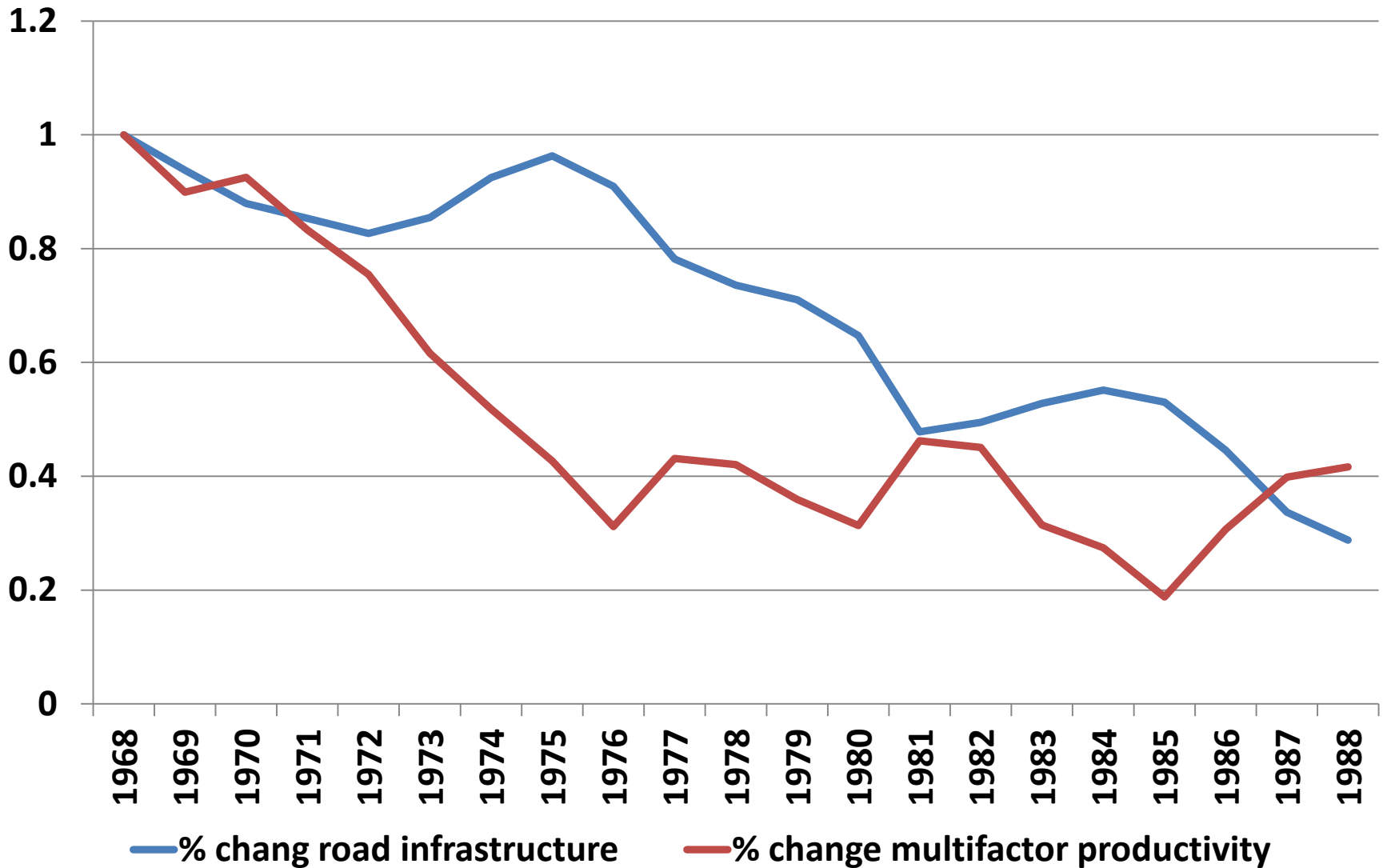
- Construction Jobs or Permanent Eco Impact
- Consider construction jobs:
 - Washington State ARRA transport funds:
 - 3,700 jobs created from \$752 million in funds
= \$203,243 per job
 - 584 “single season” jobs from \$55 million in funds
= \$98,128 per job

Source: <http://www.wsdot.wa.gov/Funding/stimulus/jobs.htm>

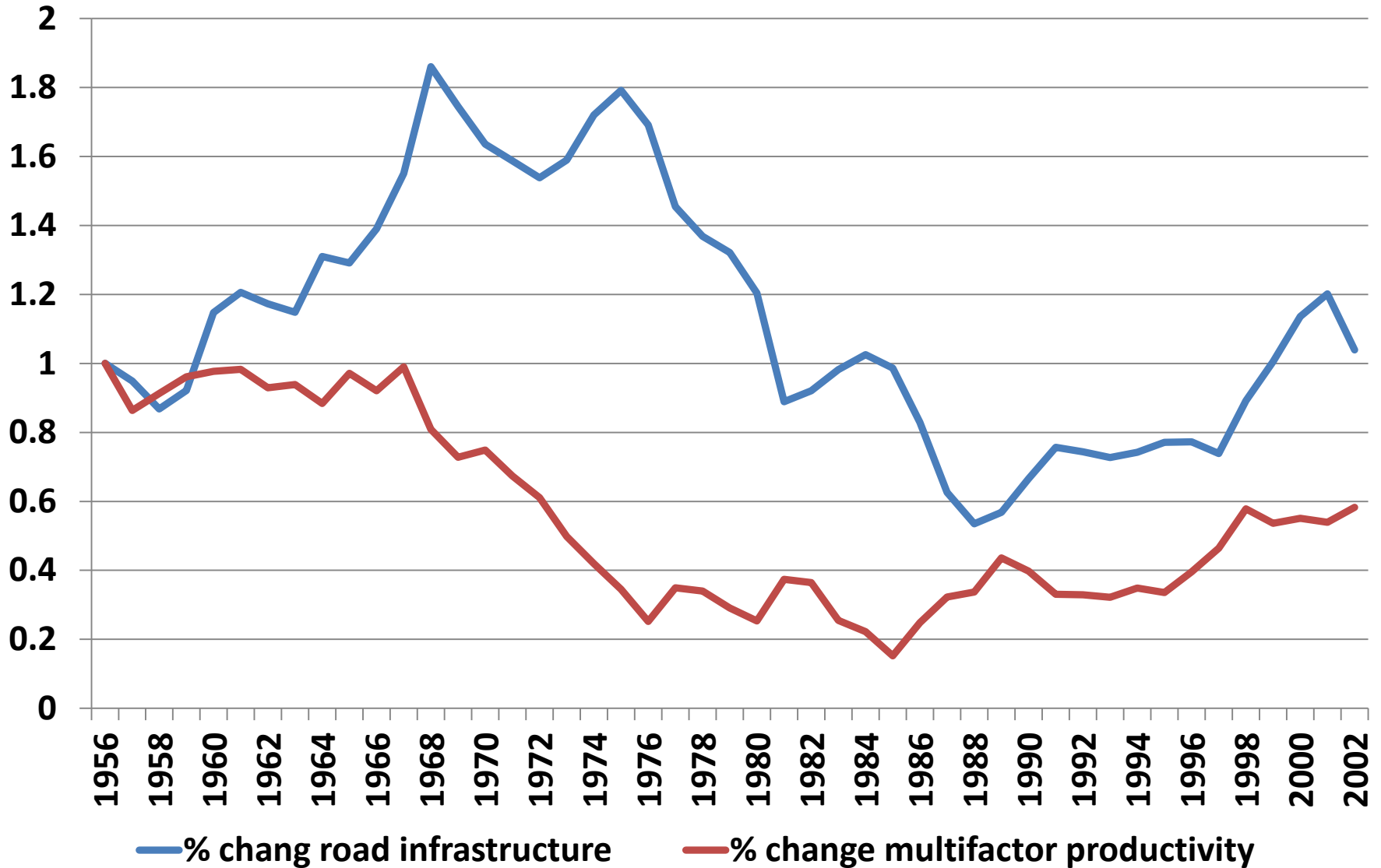
Maybe Something More

Data: Transportation Statistics Annual Report provides estimate of the transportation capital stock by mode from 1995-2007. See table at:
http://www.bts.gov/publications/transportation_statistics_annual_report/2008/htm/chapter_02/table_02_01_04.html
And for Multi-Factor Productivity from www.bls.gov/mfp/

U.S. Multifactor Productivity and Road Infrastructure, year-to-year change



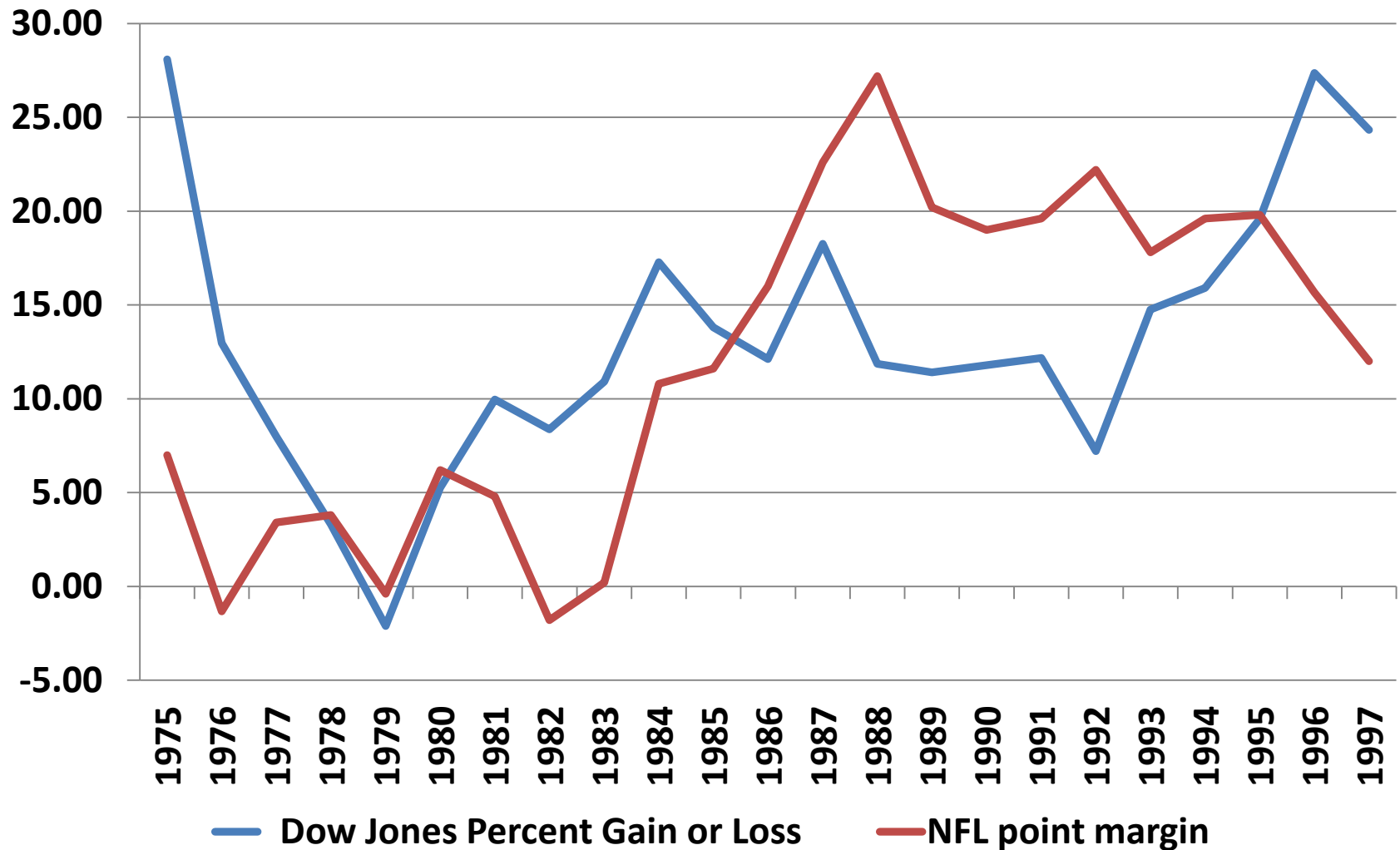
U.S. Multifactor Productivity and Road Infrastructure, year-to-year change, smoothed



The Productivity Crisis

- Labor Productivity growth rates
 - 2.5% per year, 1948-1969
 - Doubles every 28 years
 - 1.1% per year, 1969-1987
 - Doubles every 64 years
- Was Declining Infrastructure Investment a Cause?

Old NFL Super Bowl Victory Margin versus Dow Jones Percent Gain, 1975-1997, five-year smoothed data



Infrastructure (Highway and Other) and Productivity

- Reverse Causation? (More wealth, more infrastructure.)
- Spurious correlation? Anything that trended around 1969 could explain decline in productivity.
- Project Analysis (What does the infrastructure do?)

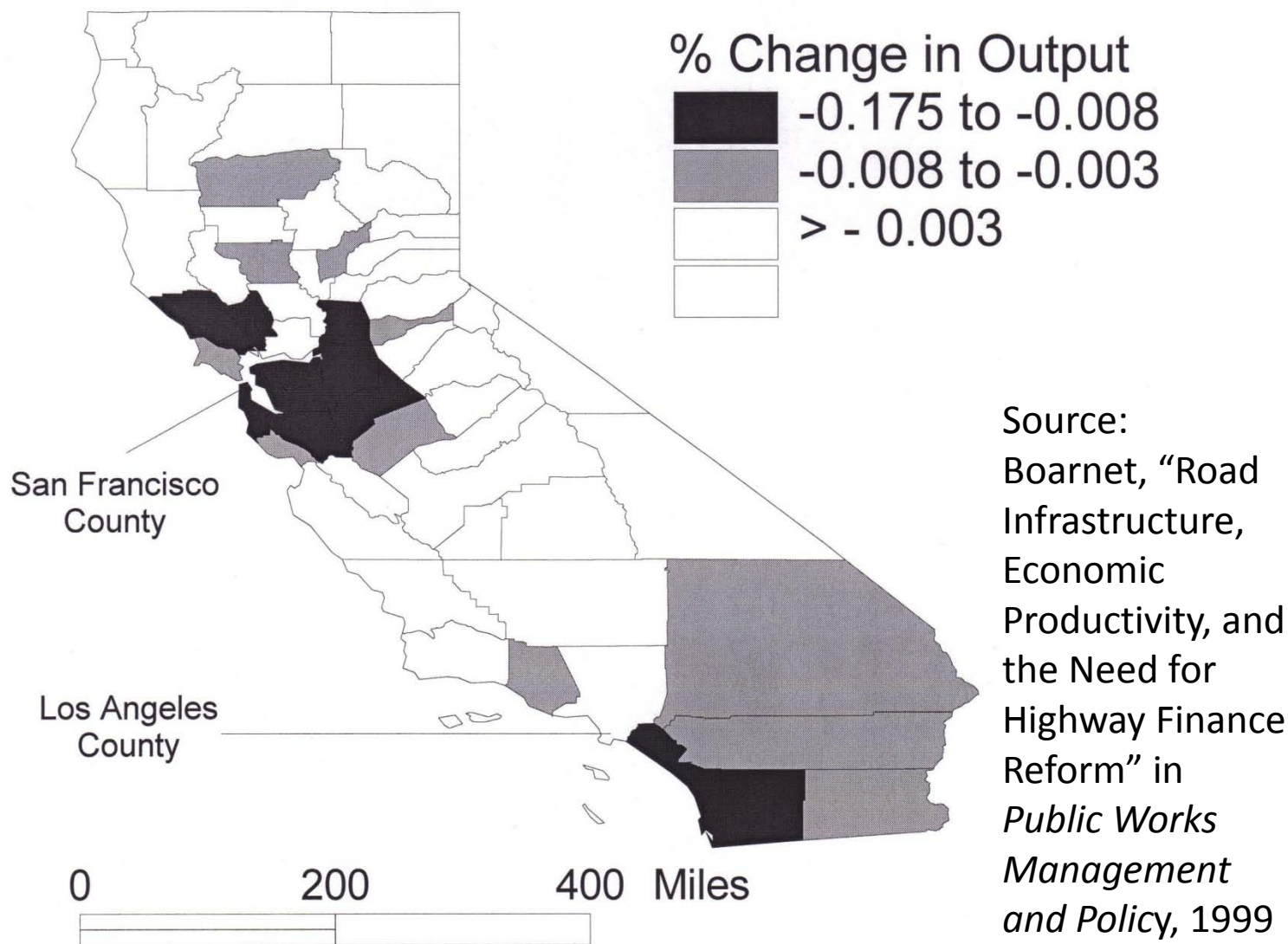
Two Characteristics of Road Infrastructure

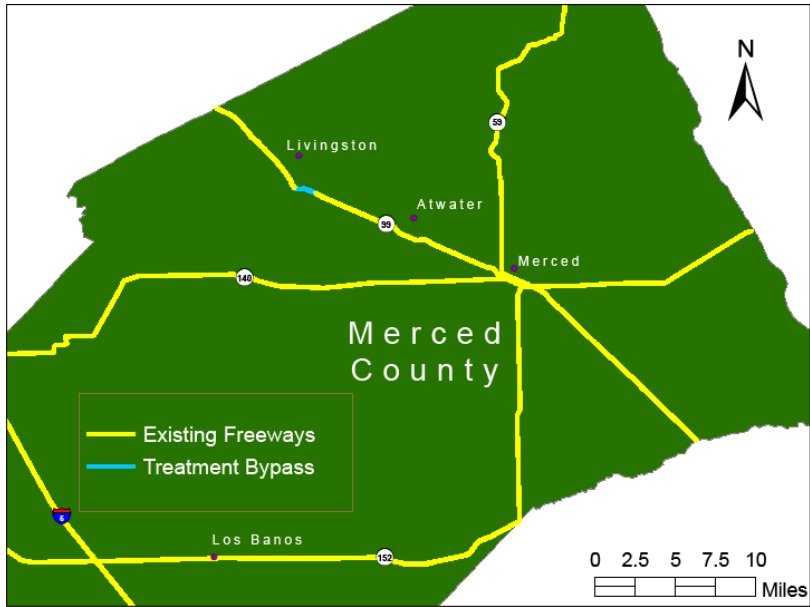
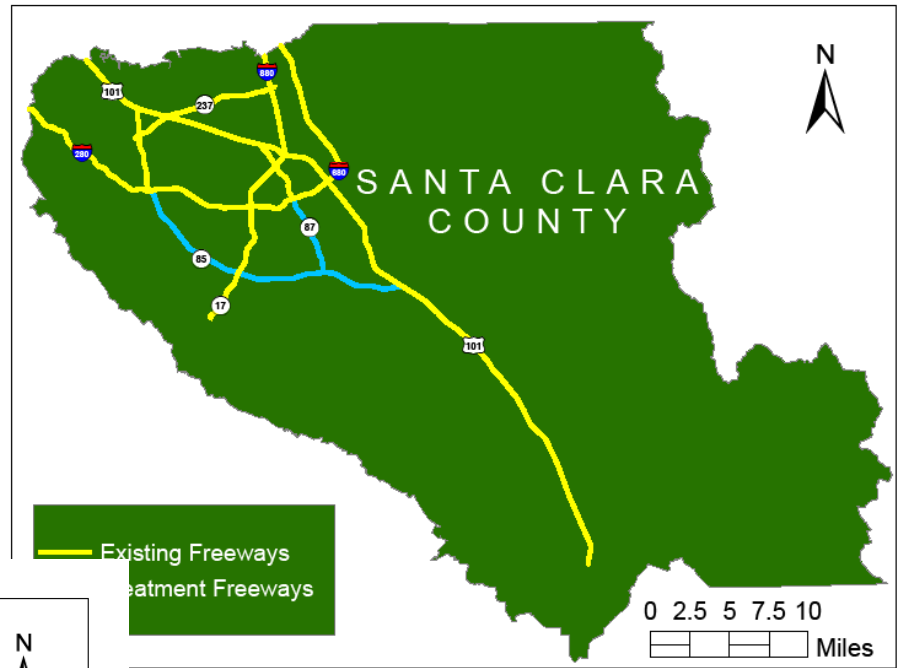
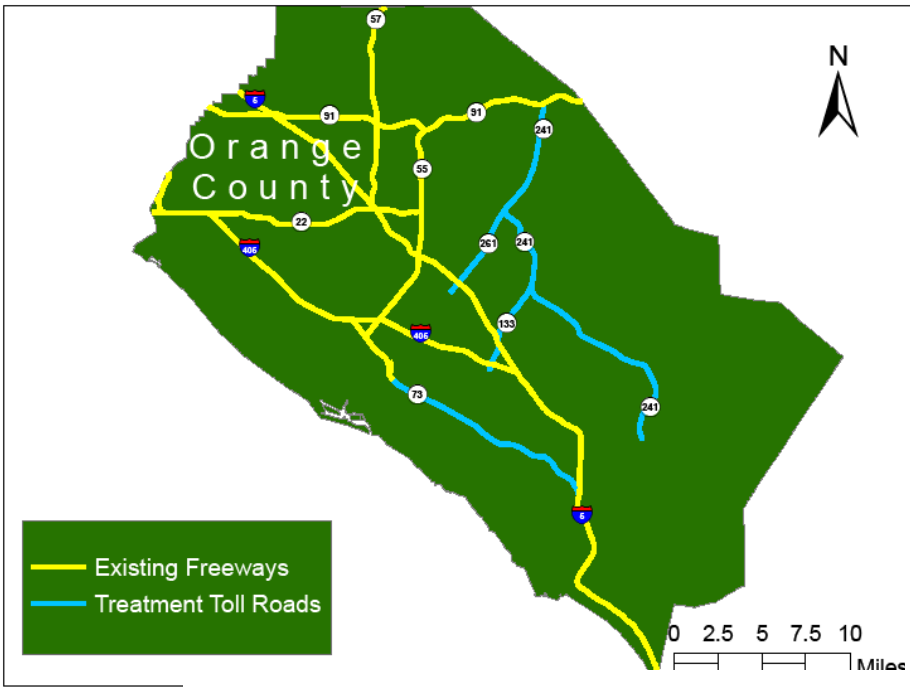
1. Spatial Shift

- a. Growth near new infrastructure is at expense of losses elsewhere.
- b. Highways, in a dense network, distribute growth more than create aggregate growth.

2. Growth impact from highways varies.

Spillovers: Percent Change in Output from 1 Percent Increase in L.A. County Street/Highway Stock





Varying Impact: New Highways (in 1990s) and Employment Growth

Counties Studied	Employment Change within 1 mile of new highway
Santa Clara County	None
Orange County	3,948
Merced County	-16

Source: Funderburg, Nixon, Boarnet, and Ferguson, "New Highways and Land Use Change: Results from a Quasi-Experimental Research Design," revised October, 2009.

Transportation Infrastructure and the Politics of Place

Executive Secretary of South Gate
Chamber of Commerce, 1940s:

“May I be brutally honest and say that we are a lot more interested in getting our employees back and forth to work than we are getting our citizenry to leave our own merchants in the City of South Gate and go downtown to Los Angeles to spend their money.” (Adler, *Journal of Urban Affairs*, 1991, p. 74)

Economic Impacts and the Politics of Place

- Economic benefits:
 - Often advantage one place over another
 - Temptation to obtain funding (federal) to create local competitive advantage
 - Politics of place
- Highway cost-benefit analysis excludes local economic impacts
- But highway cost-benefit analysis is:
 - Not required
 - Rarely done

Conclusion

- We need jobs, jobs, jobs
- Should we build projects for the jobs, or the infrastructure itself?
- Answer: The infrastructure
- How to know which projects to build?
 - Project (cost-benefit) evaluation
 - Economic and environmental sustainability
 - The new politics of place (GHG, local liveability, co-benefits)
 - 50 years of social and policy science of project evaluation has passed transportation by.
 - It is time to catch up.