An Engine of Prosperity
How Freight Rail Drives Washington’s Economy

Philip J. Romero
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September 2014
Study Overview

• Washington Council on International Trade, BNSF Railway

• Dr. Philip J. Romero
  o Chief Economist for the state of California and the RAND Corporation. Professor of Business Administration, University of Oregon, national media contributor

• Examined economic “footprint” of freight rail on the Pacific Northwest economy, using Washington as a microcosm
Rail’s role in economic history

• Before steam power in early 19\textsuperscript{th} Century, goods and people stayed very local
  – Little trade, almost entirely by water
  – Few firms faced outside competition \rightarrow little incentive to improve
  – Per capita incomes \sim $1,000 per year in current $

• North American continent west of Appalachians sparsely populated and near-subsistence
  – No efficient way to import materials or export crops
  – Pacific NW population: a few thousand
Why is Washington a Trade Powerhouse?

• Favorable geography (2nd busiest West Coast ports)
• Favorable public policy (over a generation of trade promotion)
• Efficient freight shipping from inland origins (aka freight rail)
  o Freight rail ships goods from over a dozen states and provinces—Collective GDP: $2 trillion +
  o Equivalent to a medium-sized developed country
An export powerhouse

• Washington has the fourth highest exports of any U.S. state
  – Behind only states with 4 to 6x population
  – Second highest per capita
  – Twice as export-intensive as U.S. average ($10,000 + per person vs. less than $5,000 national avg.)

• 40% of state-employment is trade-dependent
  – 3/4ths exports; ¼th imports

• State economy more resilient than the nation’s
  – Shallower fall in 2008-09 recession
  – Grew 7th fastest since 2009
## Four Out of Ten WA Jobs Depend on Trade

<table>
<thead>
<tr>
<th>Industry</th>
<th>No. of Freight-Dependent Jobs</th>
<th>% of State Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, Forestry, Fishing/Hunting</td>
<td>74,018</td>
<td>3%</td>
</tr>
<tr>
<td>Mining</td>
<td>2,800</td>
<td>.1%</td>
</tr>
<tr>
<td>Construction</td>
<td>186,495</td>
<td>6%</td>
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<tr>
<td>Manufacturing</td>
<td>298,970</td>
<td>10%</td>
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<tr>
<td>Wholesale trade</td>
<td>126,563</td>
<td>4%</td>
</tr>
<tr>
<td>Retail trade</td>
<td>322,256</td>
<td>11%</td>
</tr>
<tr>
<td>Transportation and Warehousing</td>
<td>114,006</td>
<td>4%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,125,108</strong></td>
<td><strong>39%</strong></td>
</tr>
<tr>
<td>Of which primarily export-dependent</td>
<td><strong>802,852</strong></td>
<td><strong>28%</strong></td>
</tr>
</tbody>
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Total state employment in 2008: 2,881,000 jobs
Methodology

- Identified six most trade dependent industries
- Approximated the substitution of shipping modes from trains to trucks—not all shipping would disappear if trains didn’t exist
- Used input/output multipliers to capture the effects if the trade-dependent industries sold less and bought less due to higher shipping costs
- Compared results to total size of WA economy to check for reasonableness
Key Findings

- Freight rail responsible for $28.5 billion in state economic activity
  - Nearly one in ten dollars of GDP
  - Most of a decade’s worth of economic growth
- Household earnings $13.4 billion higher
  - More than $5,000 per family
- Rail supports 342,000 jobs
  - More than 10% of state workforce
Why is Rail Superior?

- Efficiency
- Environmental impact
- Economic self-sufficiency:
  Since 1980, $500 billion in private investment
- Safety: Accident rates have halved since 1980
- Speed: Avoids congested highways
  - Washington highway congestion costs $3.3 billion per year
Why Not Use Trucks Instead of Rail?

• If rail didn’t exist, land based shipping would be by truck
  o 279% price increase
  o Labor costs nearly 100x
  o Emissions 4x

• Trucks’ total “social” costs are 9x rail; inferior in each of the following:
  ◦ Congestion ◦ Pollution
  ◦ Energy security ◦ Public infrastructure
  ◦ Accidents

• Without freight rail, little overland long distance trade would occur
Conclusions

- Trade has driven a vast upward climb in Washington State’s living standards
- Freight rail is critical to Washington State’s prosperity
- Rail enables Washington State to exploit its position astride the path of trade for a dozen states and provinces
BACKUP
Rail’s role in economic history

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Rail is superior to trucks in all but one impact category

- Trucks’ direct costs per ton-mile are 3.79x rail
  - Labor costs nearly 100x
  - Emissions 4x

- Trucks’ total “social” costs are 9x rail; inferior in each of the following (except noise):
  - Congestion
  - Energy security
  - Public infrastructure
  - Pollution
  - Noise
  - Accidents

Sources: Gerald McCullough, U. Minnesota, 2005;
           David Fockenbrock, U. Iowa, 2001