



# CFIRE Research Initiative



## Reshoring and its impact on Transportation Infrastructure & US Economy

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Center for Logistics, Trade, and Transportation  
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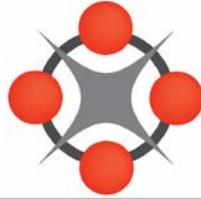
**Talking Freight Seminar**



July 15, 2015



# Research Team



The investigative team includes the following researchers and their respective institutions:

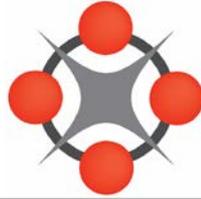
- MD Sarder, Chad Miller, Tulio Sulbaran, and David Holt, USM
- Ben Zietlow, University of Wisconsin-Madison
- Mike Golias and Sabya Mishra, University of Memphis
- Mike Anderson, University of Alabama- Huntsville



THE UNIVERSITY OF  
**MEMPHIS**



# Research Objectives

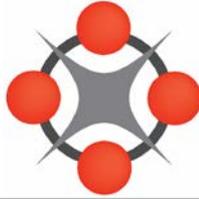


- This research will develop a reshoring index & manufacturing location quotients within CFIRE region that will help US manufacturers to evaluate their reshoring strategy.
- It will also assess potential impacts of reshoring on the freight networks within CFIRE region (see figure below) and identify rational strategies for the nation's multimodal network.
  - Distribution scenario analysis
  - Network capacity analysis
  - GIS based economic development analysis
  - Developed a Web-based tool





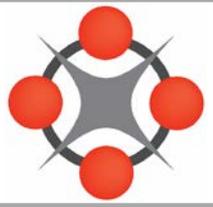
# Research Scope



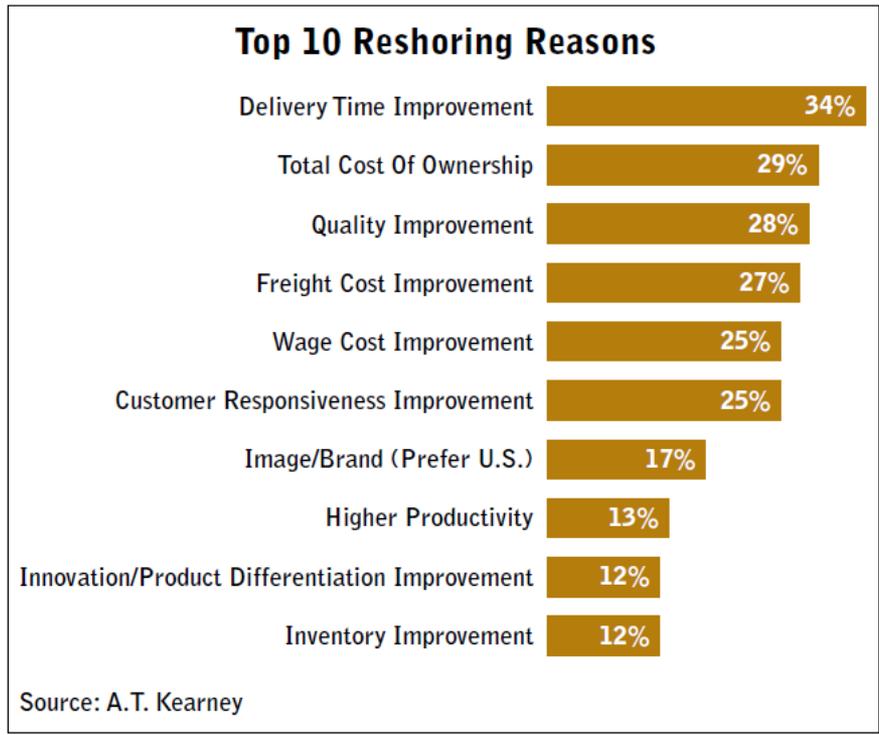
- Focused on major US Manufacturing industry (4 Digits NAIC)
- Reshoring
  - Between US & China
  - Manufacturing operations
- Two scenarios of distribution points
  - Memphis and south
  - Chicago and north
- Considered
  - Major US ports that are sources to above distribution points
  - Road, Rail & Multimodal



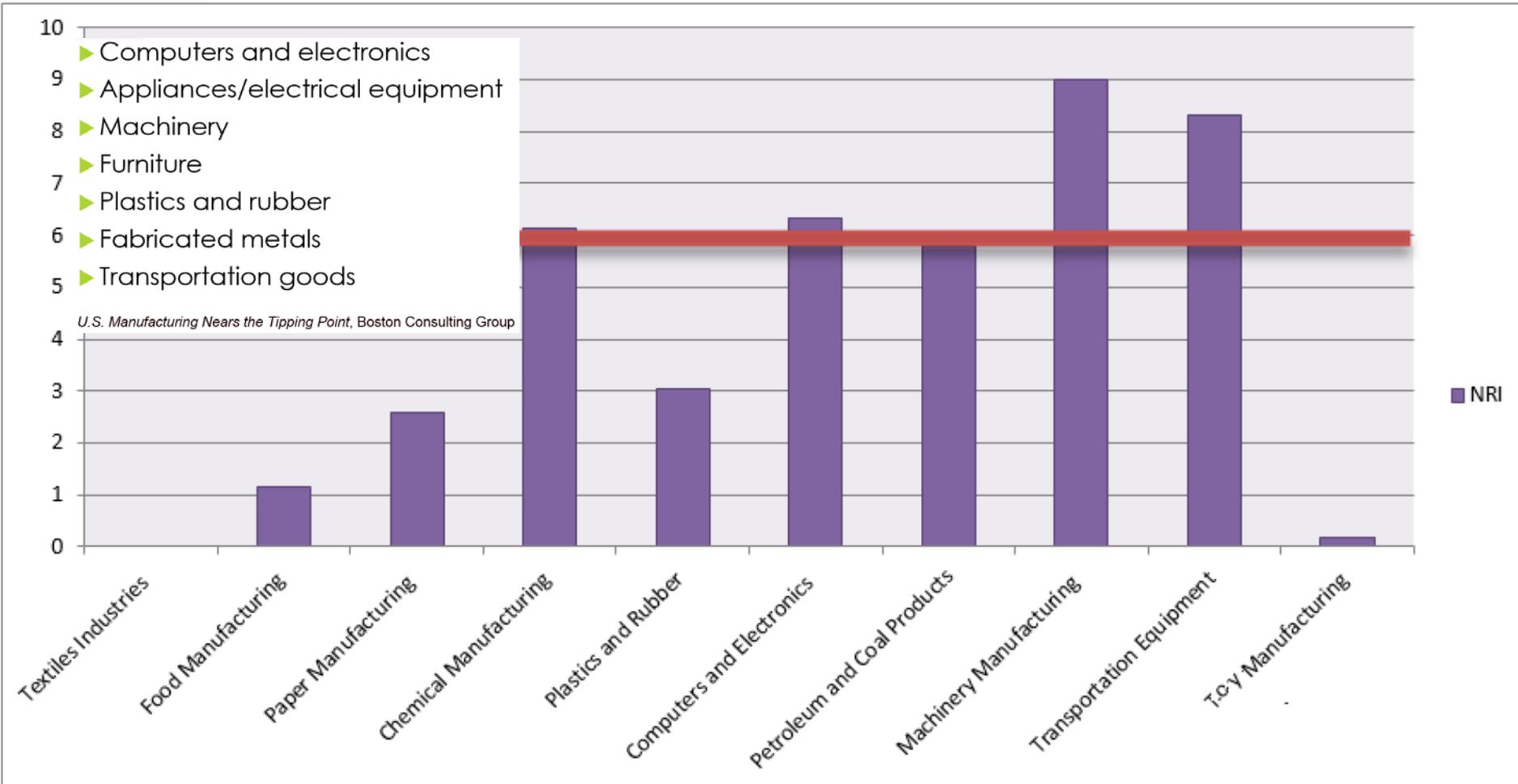
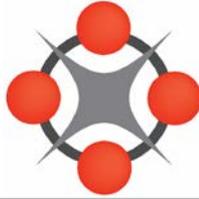
# Anticipated Results – Reshorability Index



- Identify major driving factors of reshoring
- Explore the relationship between specific factor and manufacturing industry (4 Digits NAICS Code)
- Develop a Reshorability Index (RI) for each manufacturing industry (4 Digits NAICS Code)
- Validate the index with existing published studies –Reshoring Initiative, BCG, etc.
- Conduct sensitivity analysis with varying factor values.

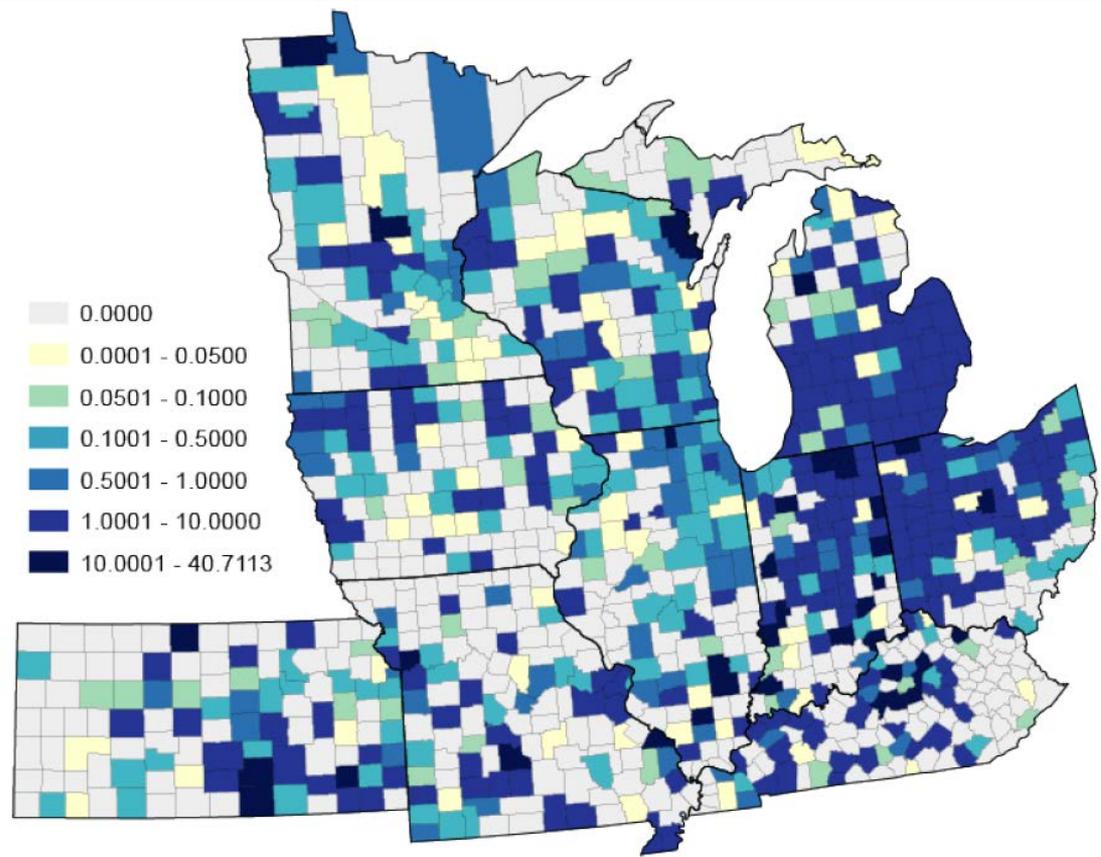


# Anticipated Results - Reshorability Index





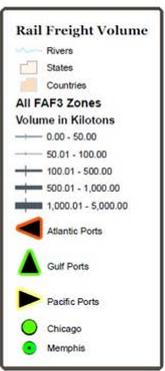
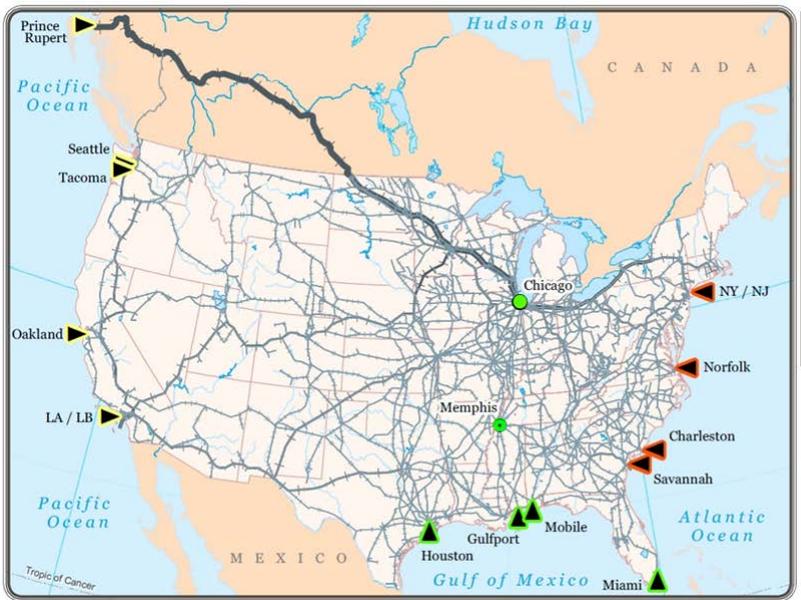
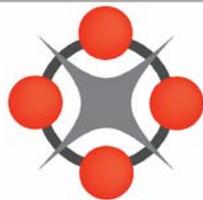
# Anticipated Results –Location Quotients Analysis



Transportation Equipment Manufacturing Location Quotients by county for the Mid- America Region (UW-Madison, 2014)



# Anticipated Results – Distribution Scenario Analysis

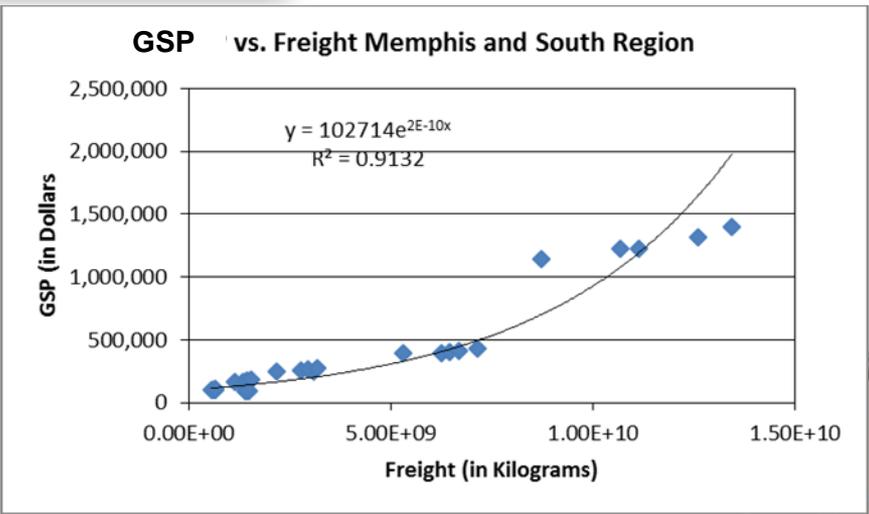
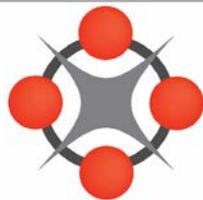


International Capacity Expansion Impact on US Transportation (MS Sarder et.al, 2014)

500  
Kilometers



# Anticipated Results –Economic Impact Analysis



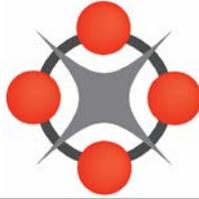
Statistical Model for Import Tonnage as a Predictor of Regional GSP for Memphis-South Region

International Capacity Expansion Impact on US Economy (MS Sarder et.al, 2014)





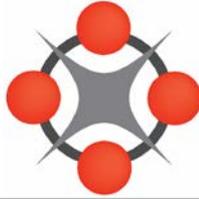
# Timeline & Anticipated Help



- Expected to finish this project by December 2015.
- Looking for established relationship between reshoring factors and decision of reshoring for specific manufacturing industry.
- Real-time reshoring data from US manufacturing companies.
- Finally, any access to freight databases to quantify the potential impact on freight distribution due to reshoring scenarios.
- Project Report & web tool will be published in the following site: <http://www.usm.edu/logistics-trade-transportation/reshoring-index-backup>



# Questions?



## My Contact Information

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**Thank You!**