



THE UNIVERSITY OF
SOUTHERN MISSISSIPPI

The Southern Auto Corridor

Growth Poles Nested in a Global Industry

Chad R. Miller, Ph.D.

Center for Logistics, Trade and
Transportation at the University
of Southern Mississippi

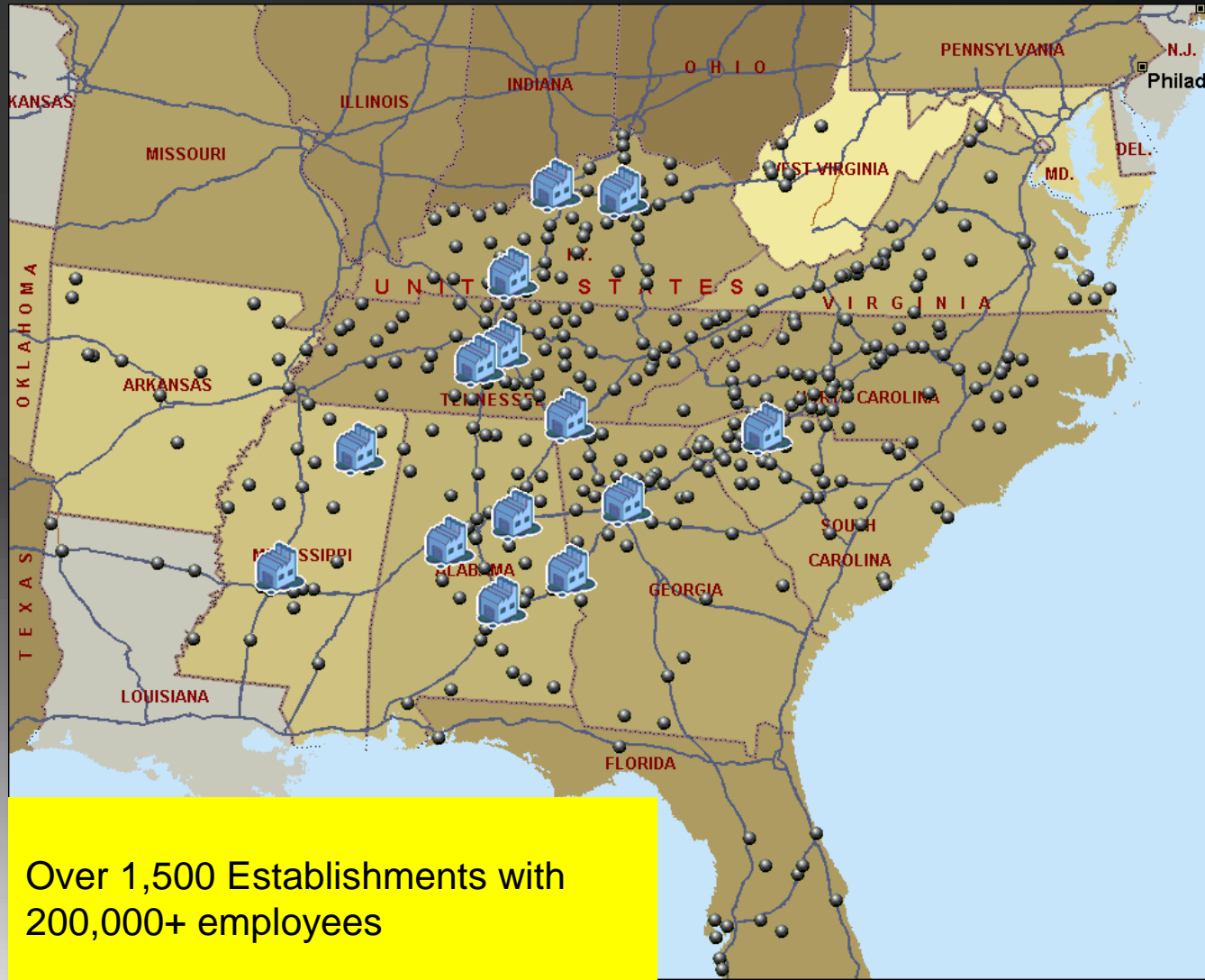
Bruce Lambert

Executive Director
Institute for Trade and
Transportation Studies

creative | B O L D | *determined*

Southern Auto Corridor

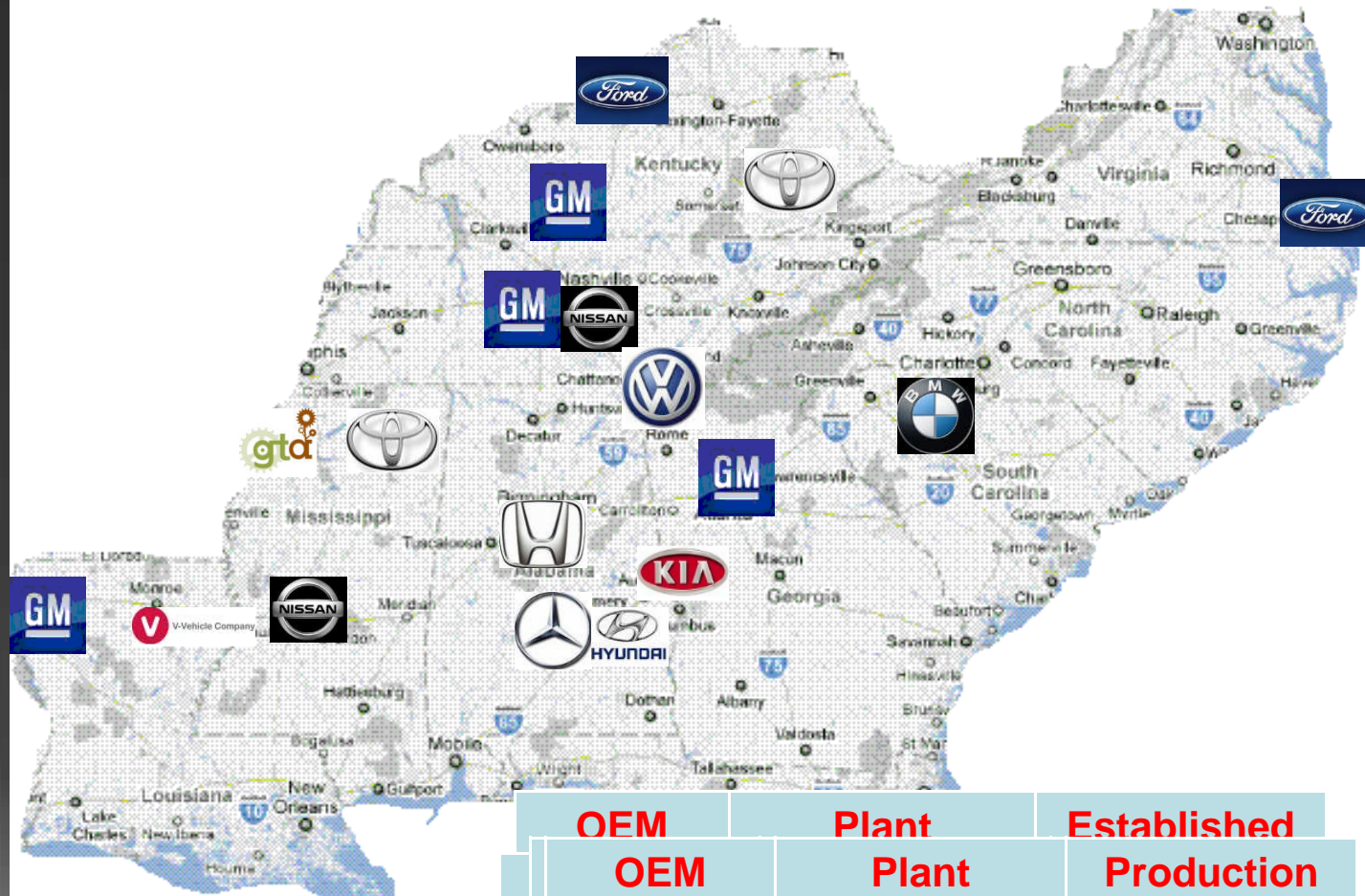
OEMs, Tier 1 Suppliers, and States Coded by Supplier Establishments



Over 1,500 Establishments with 200,000+ employees

Share of U.S. Auto Industry 2008
Production 26%
Vehicle GDP 27%
Parts Suppliers 24%
Employment 26%
Sales of New Vehicles 23%

Source: ELM International



	OEM	Plant	Established
	OEM	Plant	Production
S	Toyota	Blue Springs	??
E	Volkswagen	Chattanooga	2011
M	V-Vehicles	Monroe	TBA
	Greentech	Tunica	TBA

Key Points

U.S. motor vehicle production forms a multi-state agglomeration along an interstate highway network framed by I-65 and I-75.

Differentiation of the auto corridor between the U.S.-owned firms dominated northern area and a southern area dominated by foreign firms.

Globalization with a strong regional context characterized by increasing imports from outside the NAFTA region of new vehicle parts and increased foreign direct investment in the NAFTA region.

Dispersal of final assembly plants and parts suppliers based on minimizing competition for labor and intermodal infrastructure.

Growth pole supplier networks based on a one-day delivery radius (approx. 400 miles) around final assembly plants.

A multi-state agglomeration of U.S. motor vehicle production along an interstate highway network framed by I-65 and I-75



Global Nested Geographic and Organizational Structure

Automotive Products Exported between Partner Regions

Export To →	Asia		Europe		North America		South & Central America	
	2000	2007	2000	2007	2000	2007	2000	2007
Export From ↓								
Asia	18%	22%	16%	18%	51%	33%	4%	5%
Europe	4%	5%	80%	78%	10%	8%	1%	1%
North America	4%	4%	5%	9%	89%	78%	2%	4%
South & Central America	1%	1%	12%	10%	28%	17%	57%	64%

Source: World Trade Organization – International Trade Statistics

T.
J.,

Nested in the NAFTA Region

U.S. Exports and Imports of Vehicles and Auto Parts								
Regions	Exports of Vehicles (HS 8703)		Imports of Vehicles (HS 8703)		Exports of Auto Parts (HS 8708)		Imports of Auto Parts (HS 8708)	
	1990	2008	1990	2008	1990	2008	1990	2008
NAFTA	57%	38%	34%	36%	80%	74%	43%	49%
MERCUSOR	0%	1%	0%	0%	1%	2%	2%	2%
EU 15	15%	25%	19%	22%	8%	9%	14%	14%
China	0%	1%	0%	0%	0%	2%	1%	8%
Japan	8%	1%	43%	33%	3%	3%	33%	15%
Korea	1%	1%	2%	6%	1%	1%	2%	4%
ASEAN	0%	1%	0%	0%	1%	1%	2%	3%
Former USSR	0%	4%	0%	0%	0%	1%	0%	0%
Rest of the World	19%	27%	0%	3%	6%	9%	4%	6%

Source: Source: United States International Trade Commission

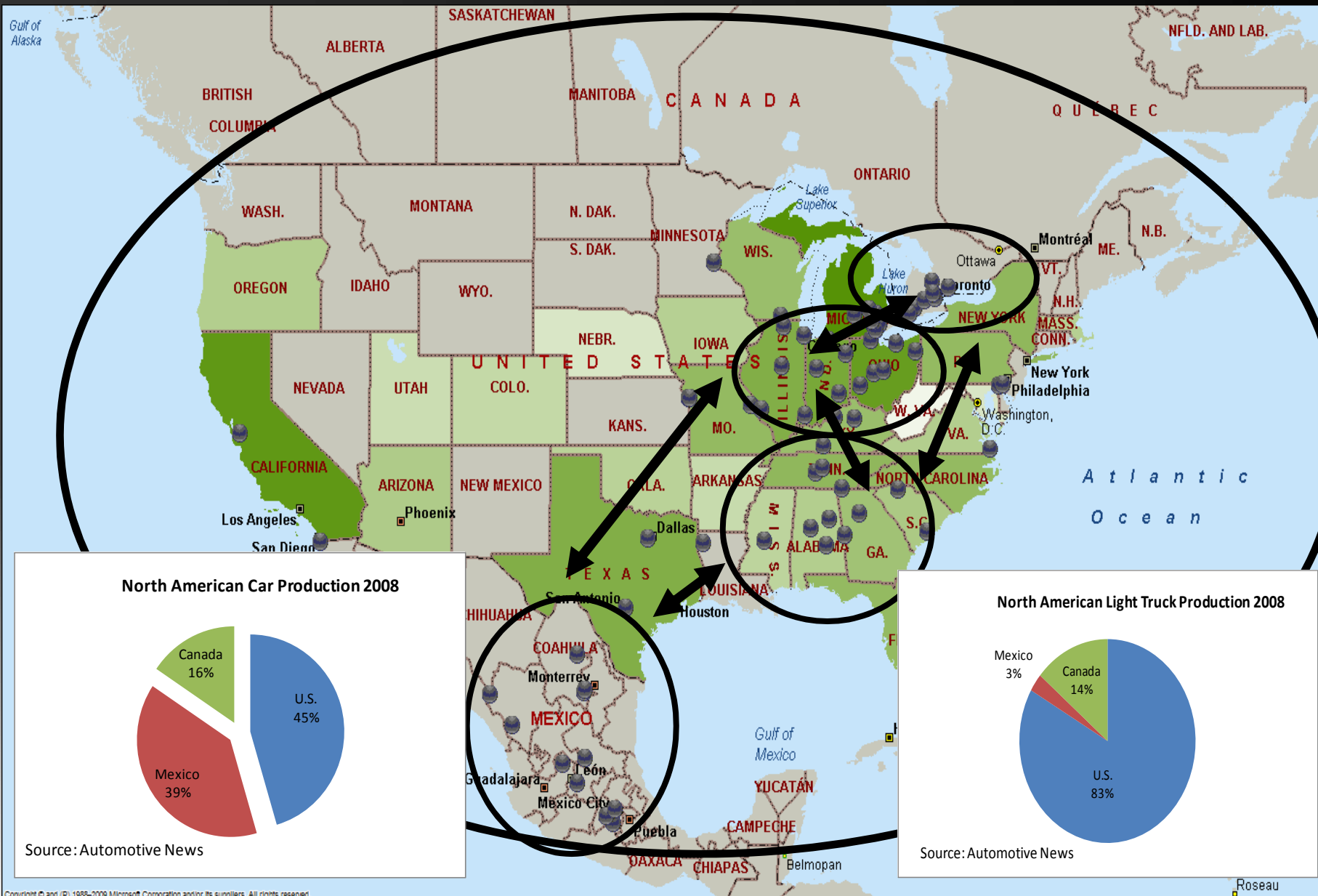
Southern States Exports tend to Follow the Nested Pattern

Southern States Trade with Global Automotive Regions				
	Exports of Vehicles (HS 8703)		Exports of Auto Parts (HS8703)	
	<u>1998</u>	<u>2008</u>	<u>1998</u>	<u>2008</u>
NAFTA	65%	40%	70%	70%
MERCUSOR	2%	2%	5%	4%
EU 15	19%	30%	18%	17%
China	1%	2%	1%	3%
Japan	6%	1%	5%	3%
Korea	0%	1%	1%	1%
ASEAN	0%	1%	0%	1%
Former USSR	0%	5%	0%	1%
Rest of the World	6%	18%	1%	1%

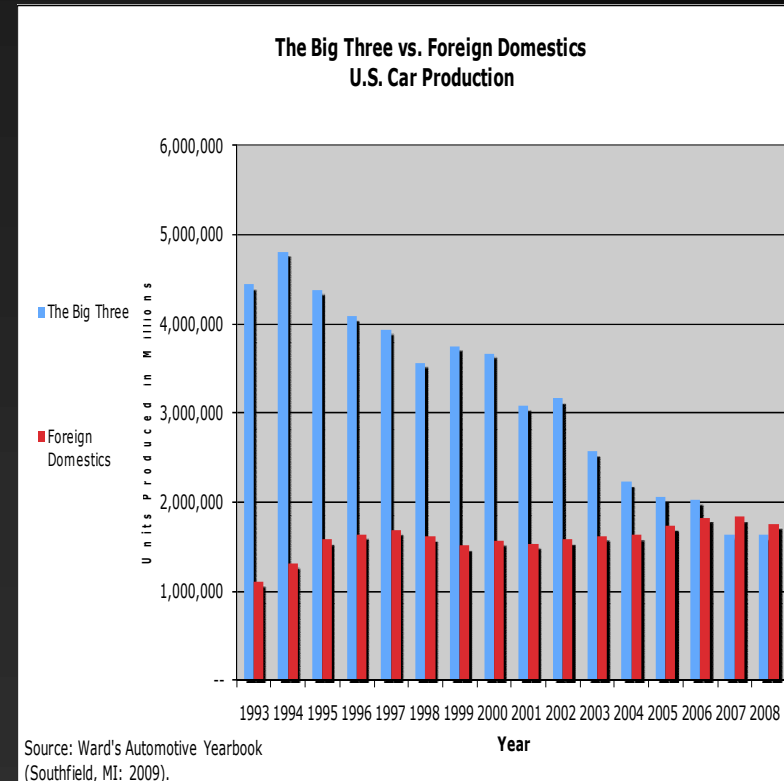
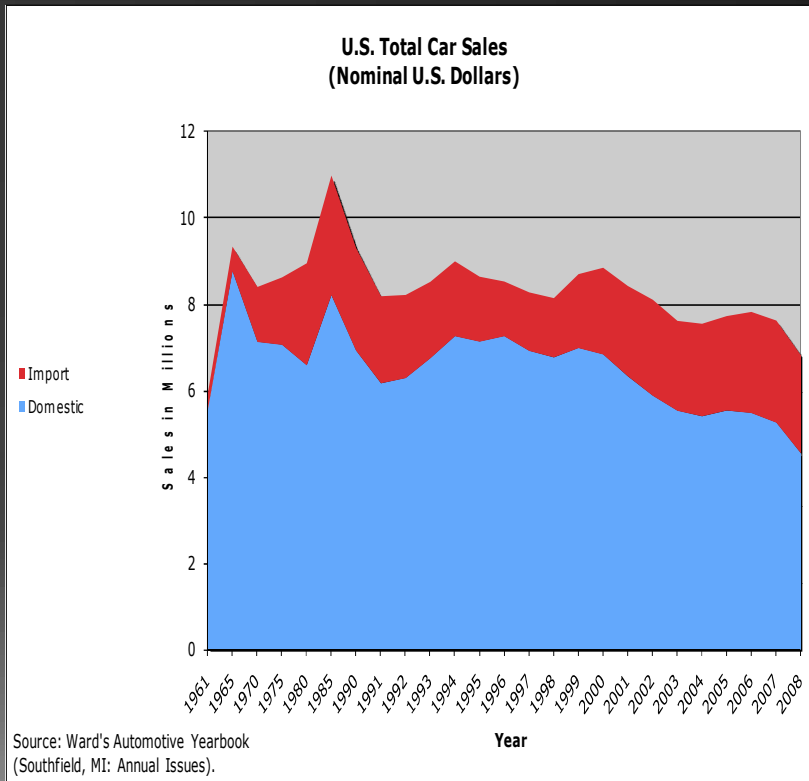
Source: WISER

North American Auto Light Truck Region

OEMs and States Coded by Supplier Establishments



The Rise of Foreign Domestic Lead to the Southern Auto Corridor



	1998	2008
U.S. Owned Suppliers	66%	35%
F-D Suppliers	15%	32%
Imported Parts	19%	33%
Source: DesRoisers		

What caused the auto industry to move from the North to the South?

1. Demographics:

- “due to these demographic shifts and the high cost of shipping motor vehicles ... that the demand to add more regional assembly plants” (Hill and Brahmst, 2003 p. 2-3).
- The proximity to the final customer is becoming more important because of the market is forcing automotive companies to adopt stock-less “build-to-order” systems and reconnect the customer with the value chain (Holweg 2004).

	Population 2007	Total sales of all new-vehicle 2009	Total vehicles in operation 2007	Total new- vehicle registrations 2007
Southeast Total	75,814,858	\$132.7b	63,636,747	4,024,018
Southeast Share	25%	23%	26%	25%
U.S. Total	301,290,332	\$576.1b	244,165,686	16,007,379
Source: National Automobile Dealers Association: US Census Bureau, Population Estimates Program				

Why the move south? Cont'd

- 2. Workforce:** The cost per hour for a fully trained employee in the automotive industry is rather consistent throughout the US, but inflexible work rules that foster inefficiency, redundant operations, and legacy benefits skew the workforce advantage to the South (McCallum 2004).
- 3. Greenfield Sites:** can create ground-up manufacturing facilities- incorporating the latest technologies-more easily in the South than reconfiguring the older assembly plants in the Midwest and Northeast
- 4. Demise of the Branch Plant Assembly System:** end of the Big 3's system of producing identical models from knocked-down kits (Rubenstein 1992)

Why move south? Cont'd

- Economic Development Efforts:**

Auto Assembly Facility	Supplier Type	Median Distance	<100 miles from assembly plant	<400 miles from assembly plant
Honda	Domestic	281 miles	13%	73%
	Foreign	175 miles	26%	83%
Toyota	Domestic	311 miles	5%	73%
	Foreign	199 miles	19%	84%
Nissan	Domestic	447 miles	7%	37%
	Foreign	272 miles	17%	65%
BMW	Domestic	495 miles	18%	40%
	Foreign	398 miles	23%	50%
Mercedes-Benz	Domestic	639 miles	6%	27%
	Foreign	435 miles	12%	48%

Source: Klier 1995

Why move south? Cont'd

- **Intermodal Network**

- “Another important consideration in the location of auto plants in the South involves the highly efficient intermodal transportation networks in the region, spanning highways, airports and, most importantly, ports. A number of the nation’s busiest and most efficient ports are located in the South, and they remain a decisive factor in the location calculations of the automakers” (CanagaRetna 2004 p. 23).



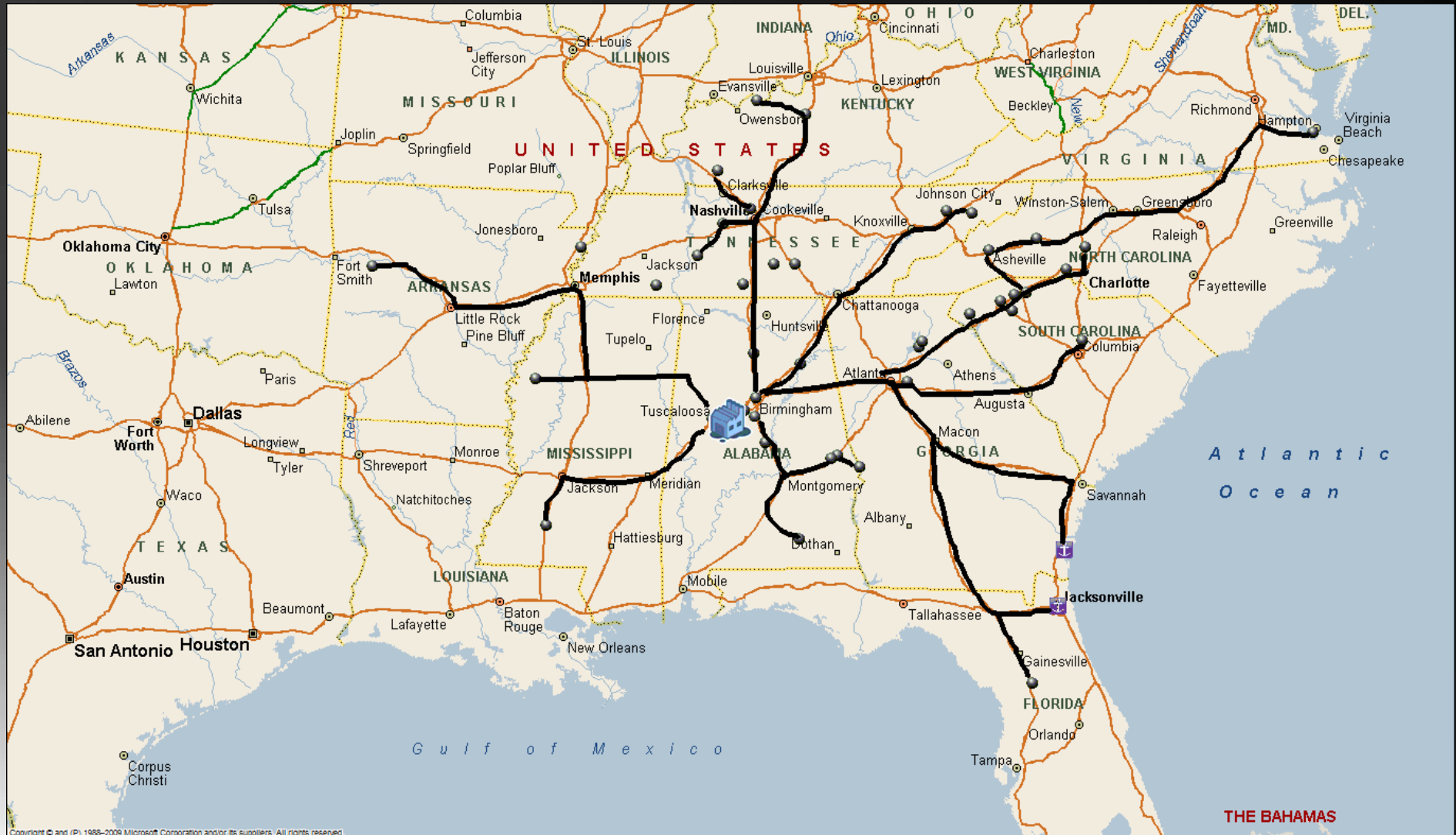
Hank Suderman Collection

Auto Supplier Location Criteria

Nissan and its US Based Tier One Suppliers
Most Suppliers within One Day Drive



Mercedes-Benz Growth Pole Tier One Supplies and Shortest Highway Routes



BMW Growth Pole of Tier One Suppliers

Logistical Impact Throughout the Region



Transportation Implications

- Need to ensure regional intrastate freight movement is expedited
- Need to connect region to Canada and Mexico
- Need efficient connection to the region's auto handling ports

