The Auto Industry in the Southeast

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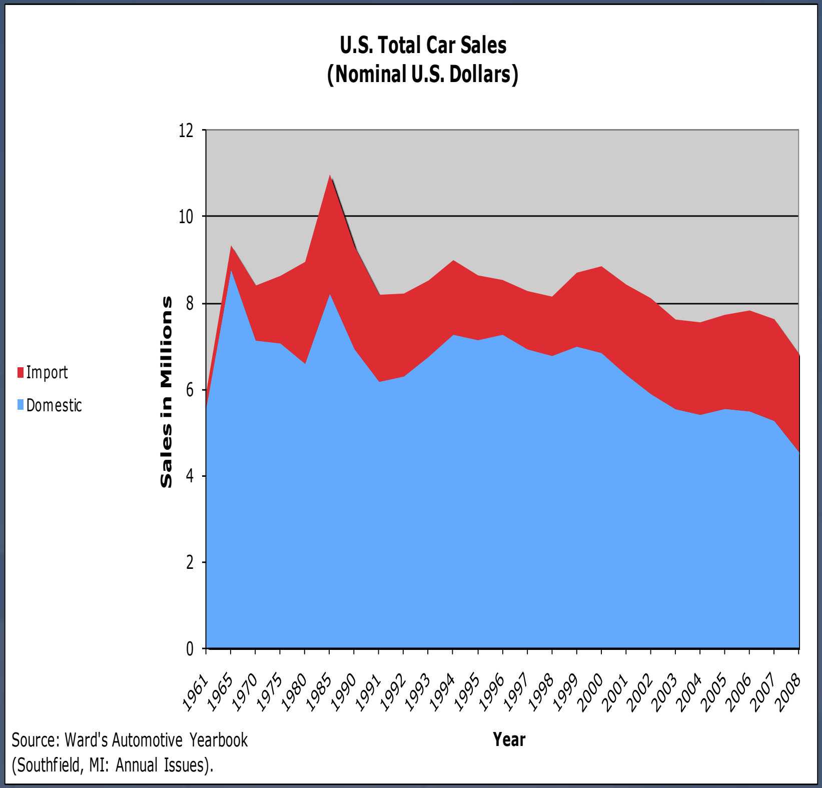
Outline

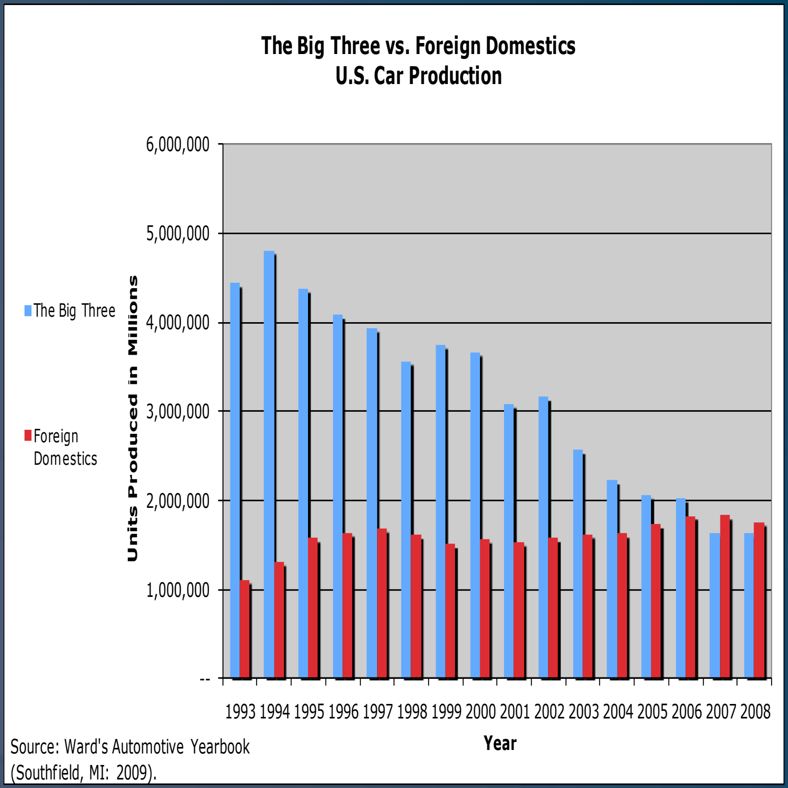
- History of the Southern Auto Industry
- Production and Markets
- Logistics and Supply Chains
- Economic Development Pressures
- Future of the Industry

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

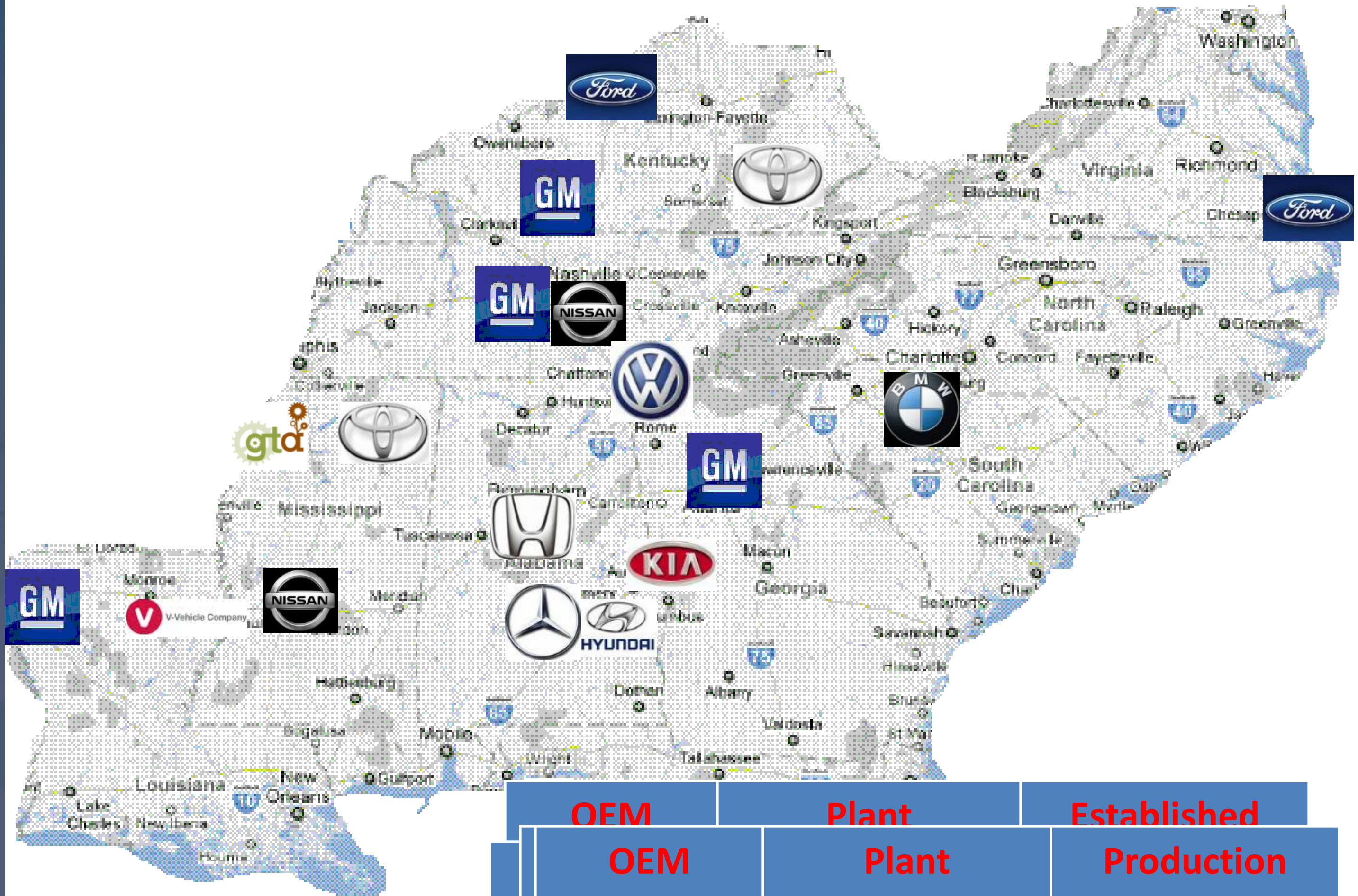
- Demographics
- Workforce
- Greenfield Sites
- Demise of the Branch Plant Assembly System
- Intermodal Network
- Economic Development Efforts

The Rise of Foreign Domestics 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		



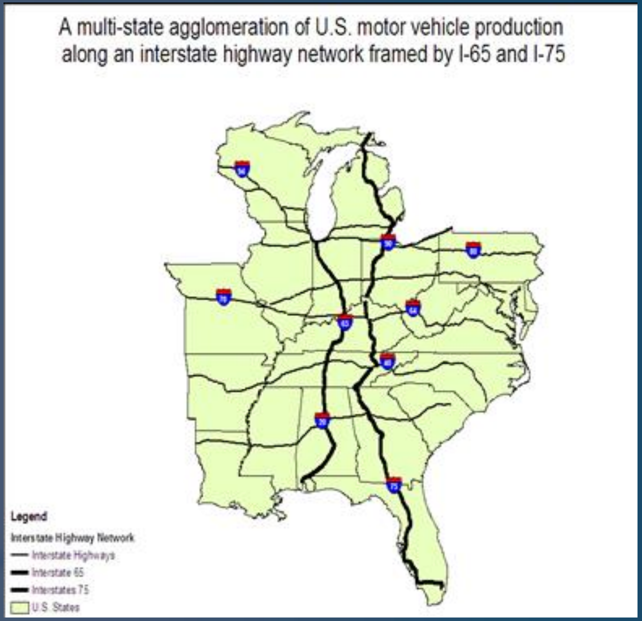
OEM	Plant	Established

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

Geographic Characteristics

- Multistate Corridor
  – I-65/I-75
  - Northern Tier – U.S.
  - Southern Tier – Foreign

- Integration with NAFTA Flows

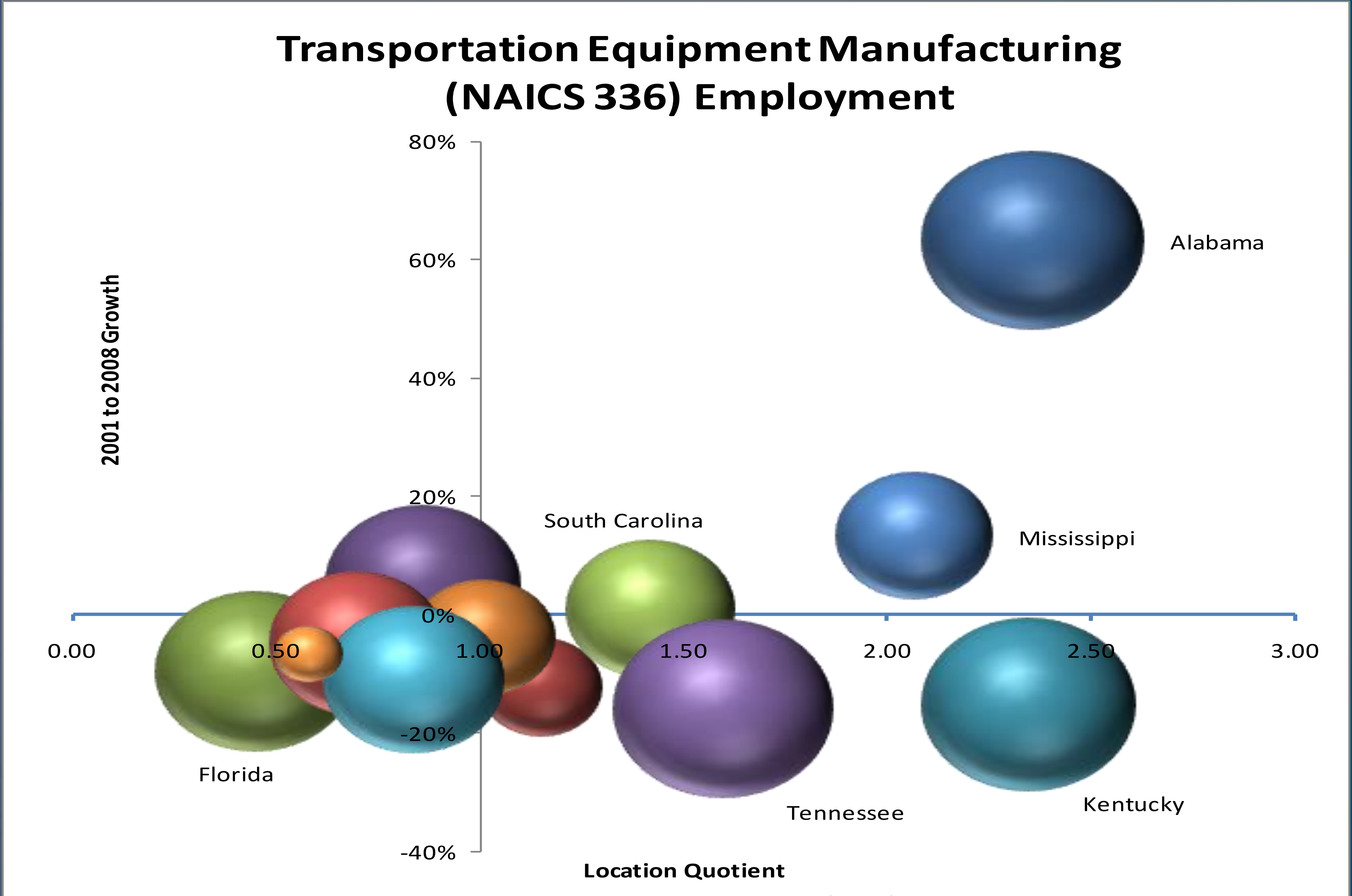


Auto Plant	Estimated Incentive package	Est. Cost Per Assembly Plant Job	Capital Investment by Automaker	Site incentives
Toyota-Georgetown	$147m	$49k	$0.8b	$92m
BMW-Greer	$155m	$81k	$05.b	$36.6m
Mercedes-Benz Vance	$258m	$168k	Over $1b	$92.2m
Honda -Lincoln	$158.4m	$105k	$1.27b	$102m
Nissan-Canton	$363m	$91k	$1.4b	$32m
Hyundai-Montgomery	$253m	$126k	$1.4b	$55m
Toyota-Blue Springs	$296m	$178k	$1.3b	$67m
Kia-West Point	$410m	$160k	$1.2b	$61m
Volkswagen-Chattanooga	$577m	$290k	$1b	$81m

Employment Concentration in Certain States

Motor Vehicle Parts Manufacturing Employment (NAICS 3363)				
	Employment 2007	Percent Change from 2001-2007	% of U.S. Total	LQ (U.S. Average=1)
Alabama	**17,263**	**41.9%**	**2.85%**	**2.04**
Arkansas	6,086	-20.4%	1.01%	1.18
Florida	4,886	-22%	0.81%	0.13
Georgia	9,889	-16.8%	1.63%	0.55
Kentucky	**33,905**	**5.3%**	**5.61%**	**4.26**
Louisiana	807	-32.9%	0.13%	0.10
Mississippi	6,031	-27.5%	1.00%	1.27
North Carolina	17,029	-0.8%	2.82%	0.95
South Carolina	**17,822**	**-4.9%**	**2.95%**	**2.15**
Tennessee	**37,039**	**6.1%**	**6.12%**	**2.99**
Virginia	7,136	-22.5%	1.18%	0.45
West Virginia	1,758	-27.4%	0.29%	0.58
Southeast	**157,893**		**26%**	
U.S. Total	604,870	-21.2%	100.00%	1.00
Source: Bureau of Labor Statistics.				

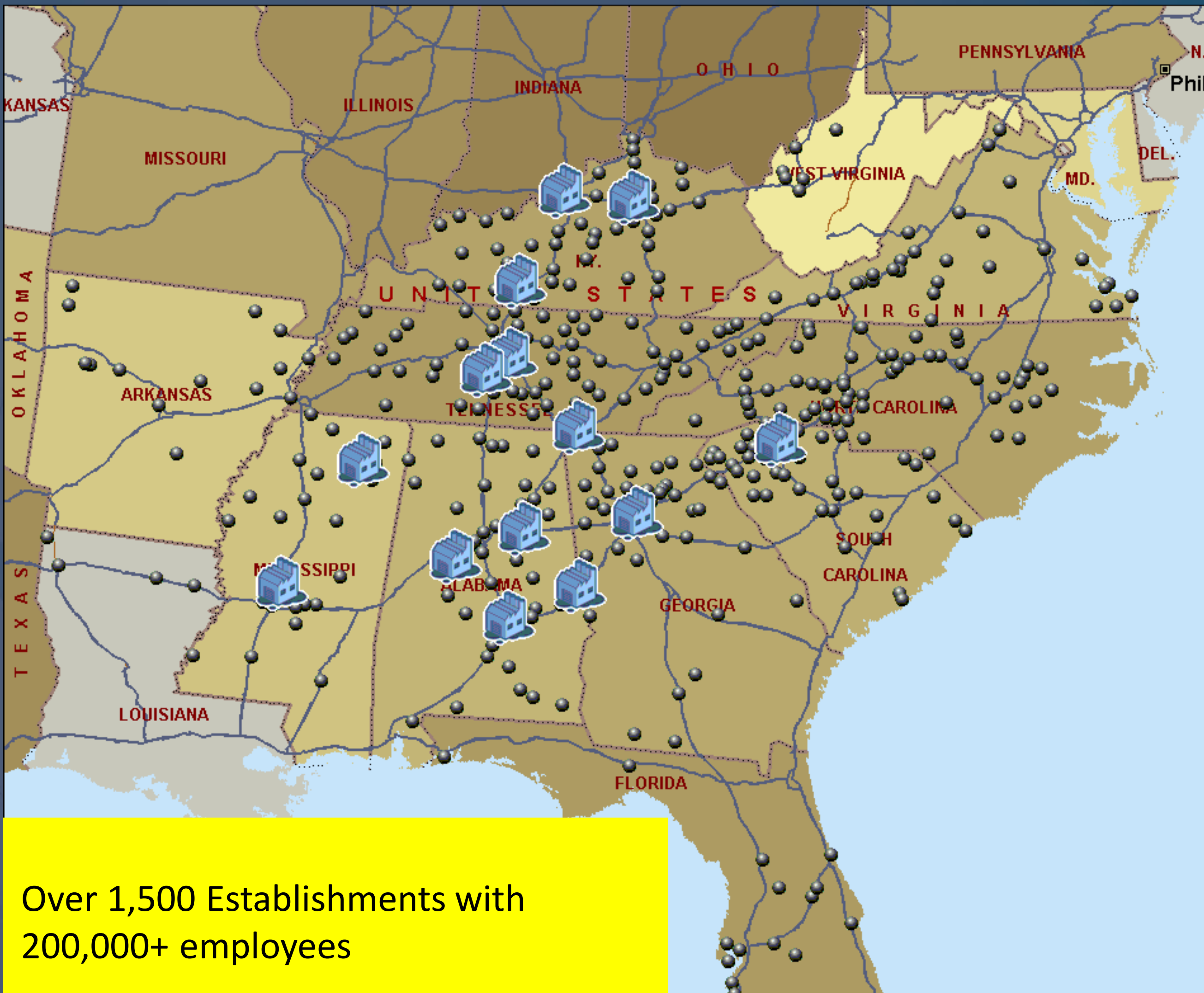
Employment Concentration & Growth in Certain States



Source: Bureau of Labor Statistics, Quarterly Census of Employment and Wages (QCEW).

Southern Auto Corridor

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

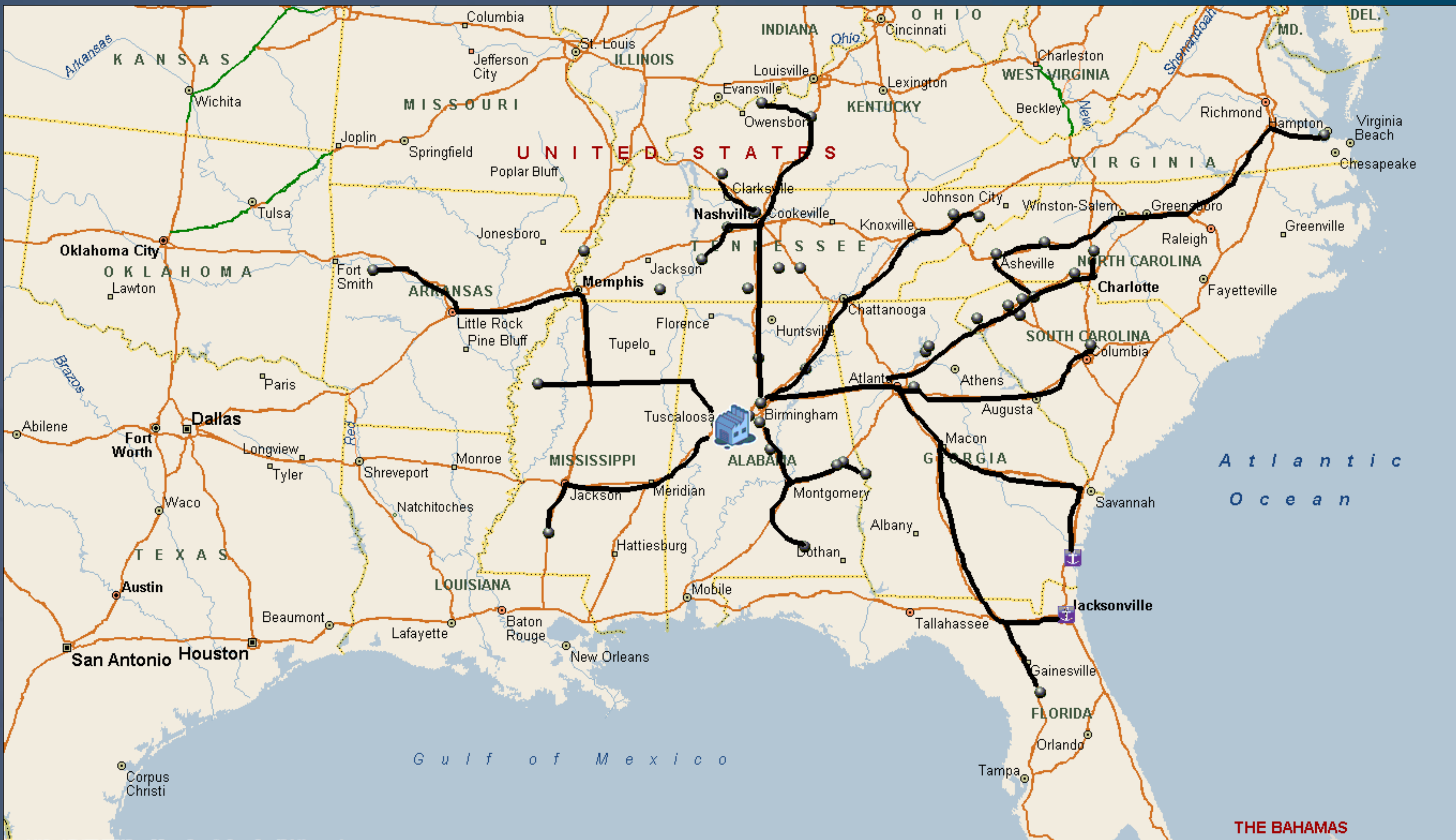


Over 1,500 Establishments with 200,000+ employees

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

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



BMW Growth Pole of Tier One Suppliers

Logistical Impact Throughout the Region

Large User of the Intermodal System

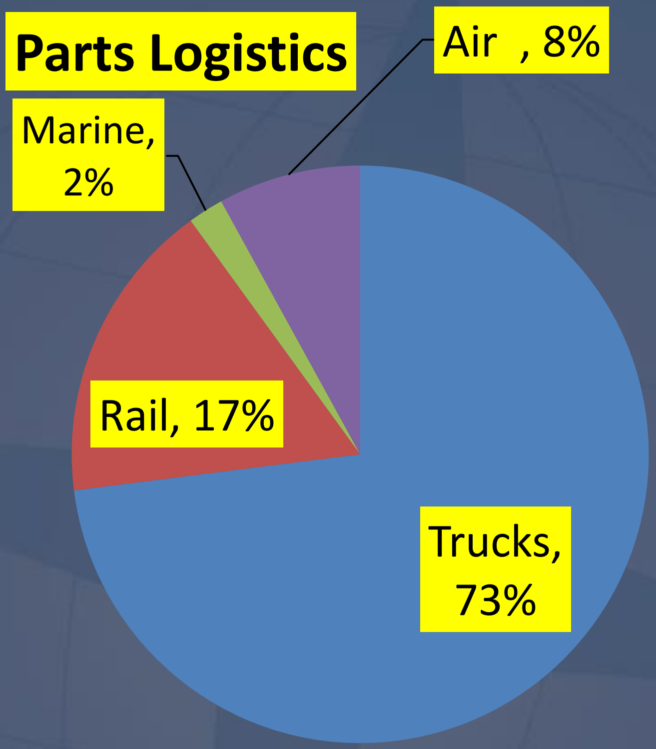
- Alabama:
  - annual automotive truck traffic is expected to increase 150% from 750,000 trips to 1,880,000 trips
  - Typical hour – 156 trucks
- Port of Mobile in 2008
  - 108,000 tons of steel
  - 10,000 containers of auto parts
  - 5,000 export containers for Hyundai
- Nissan’s Smyrna Plant:
  - Inbound: 450 trucks and 50 containers daily from 450 suppliers of which 125 are in TN.
  - Outbound: 75 to 100 railcars (average cars per rail car is 12) and 100 trucks (average cars per truck 9)

Trends in Auto Logistics

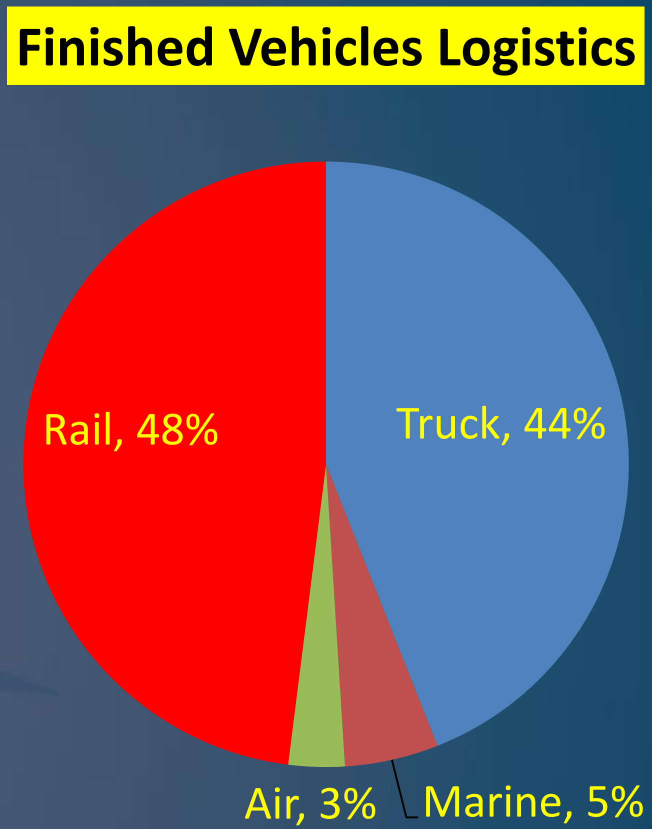
- New 3PL Relationships & logistics operation management
  - Toyota Logistics Services, Inc., Nissan Logistics Corp. (NLC), Penske Logistics was awarded
  - Calibri (Body)BMW's
- From JIT to Just-in-Sequence (JIS)
- JIS model shifts the focus to building assemblies-to-order, bringing them to a staging location, and sequencing them to the manufacturing line
- Supplier Parks and "integrated suppliers"
- Some Tier 1 attempting to consolidate facilities

VW Supplier Park near Chattanooga

Modal Usage



Source: Brazeau 2003



80-90%of parts arrive by truck and 70-80% vehicles leave by rail (Vanuono 2004)

Ocean Ports and the Auto Industry

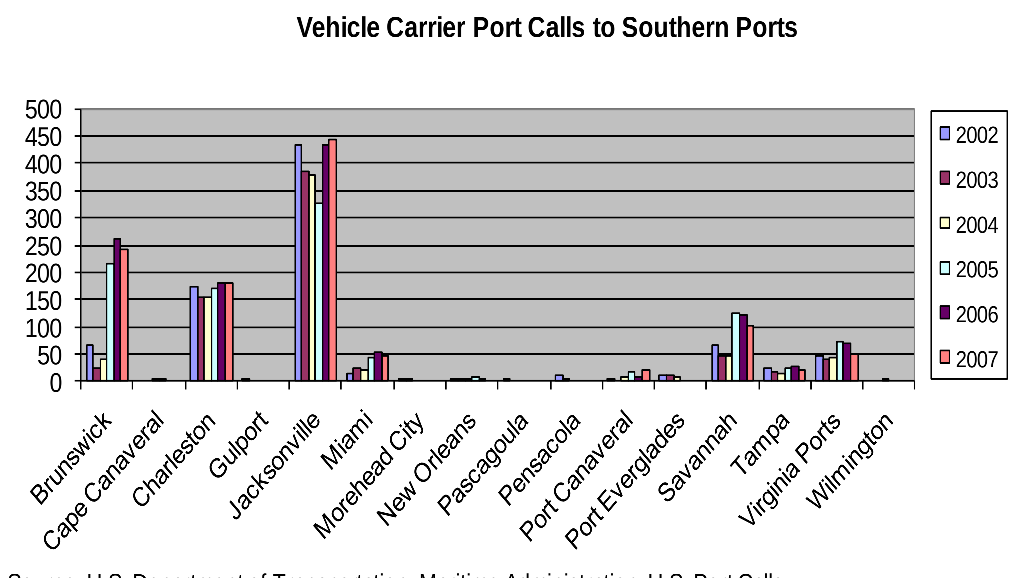
•A link to a deepwater port via rail and interstate highways is important.

•While the overall trade in automobiles has not become concentrated in fewer ports over the last 20 years, individual firms are concentrating the bulk of their import operations in fewer ports.

•Congestion at the ports and the priority given to container ships has been an issue with the automotive industry.

Port Requirements:

•Reliable and efficient
•Well served for the product market
•Adequate storage capability
•Roll on/roll off (RO/RO)
•Facilities to receive vehicles, hold them in inventory, and conduct post-production quality control



Source: U.S. Department of Transportation, Maritime Administration, U.S. Port Calls

Port of Brunswick, Georgia

- Mercedes-Benz has opened a new vehicle preparation center (VPC) in which is estimated to be able to process approximately 50,000 vehicles annually.

- The VPC will also be capable of accessory installation, full body shop operations, homologation operations, and vehicle detailing and distribution operations.

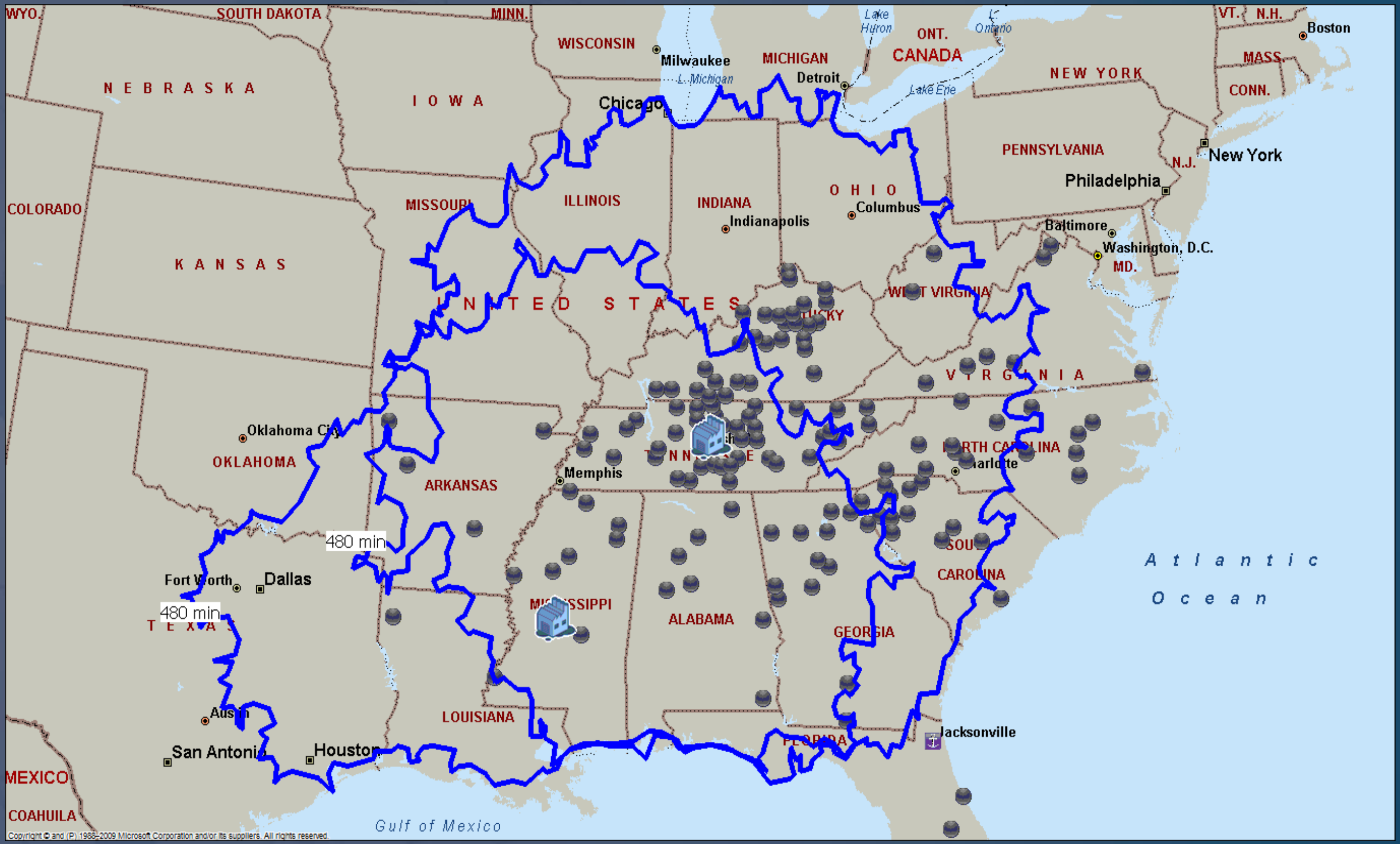
- BMW is diverting some of its imported vehicles destined for U.S. dealers from Charleston's Union Pier to Georgia's Port of Brunswick, as part of a "rebalancing" of its East Coast operations.

Changing Supplier/Automaker Relationship

- Multi-tiered system
  - OEM, Tier 1, Tier 2, Tier 3
- Independent suppliers more integrated in production than in past
- Suppliers Taking on More Responsibilities:
  - Suppliers Handling Logistics:
  - Going Green:
  - Greater Use of 3PLs:

Auto Supplier Location Criteria

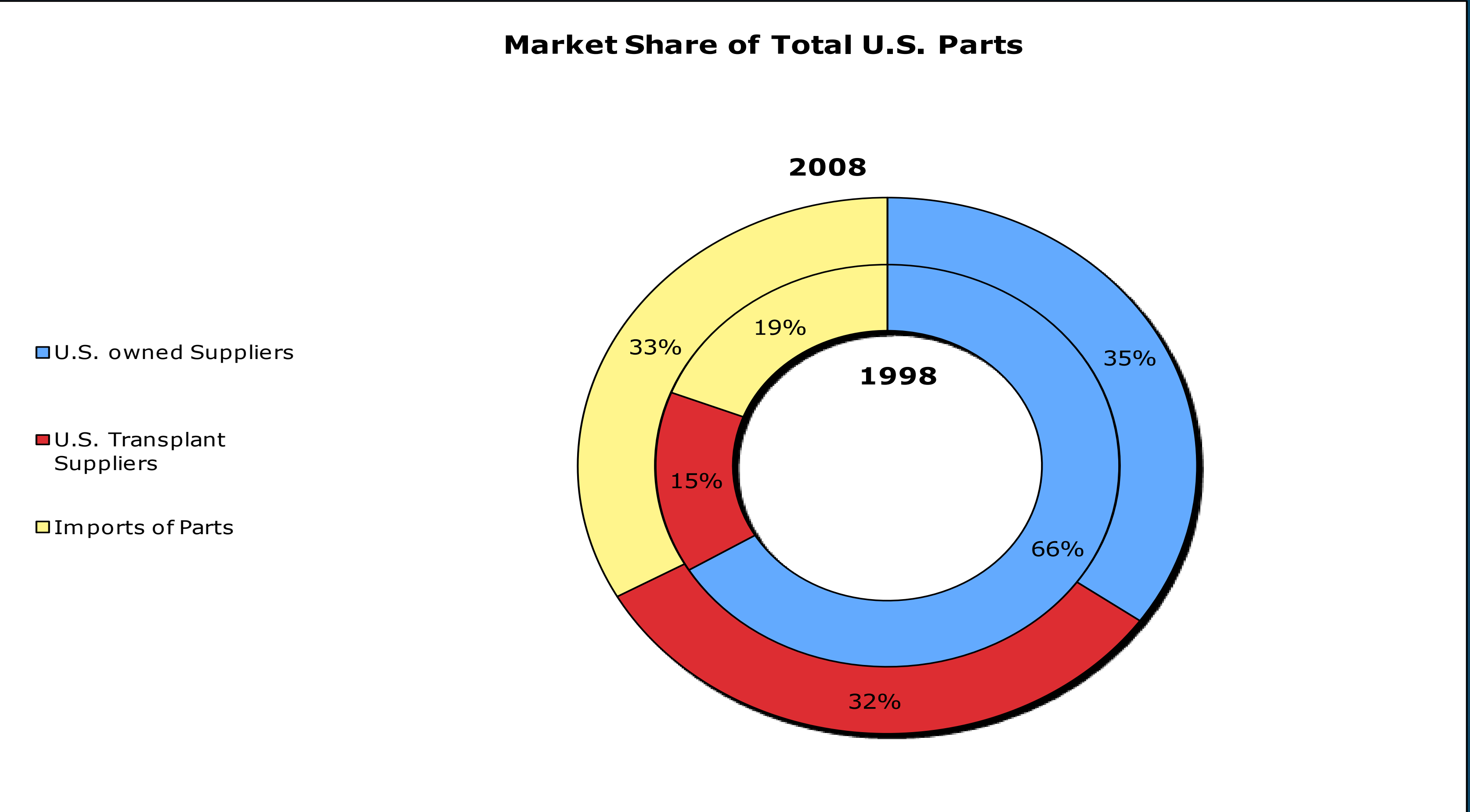
Nissan and its US Based Tier One Suppliers
Most Suppliers within One Day Drive



Growth of Suppliers in the South

Number of Establishments in Motor Vehicle Parts Manufacturing (NAICS 3363)			
States	2001	2008	% Change from 2001-2008
Alabama	111	154	39%
Arkansas	65	60	-8%
Florida	180	178	-1%
Georgia	155	171	10%
Kentucky	155	180	16%
Louisiana	46	38	-17%
Mississippi	70	73	4%
North Carolina	150	162	8%
South Carolina	112	118	5%
Tennessee	228	239	5%
Virginia	91	87	-4%
West Virginia	13	11	-15%
Southeast	1376	1471	7%
Share	20%	24%	
U.S. Total	6842	6234	-9%
Source: Bureau of Labor Statistics. Quarterly Census of Employment and Wages.			

Greater Share of Imported and Foreign-Domestic Auto Parts



Source: DesRoisers

Transformation of the Auto Parts Sector	
Changes coming from OEMS	***Impact on Suppliers***
Reduction in the number of components manufactured in the assembly plants	Seeking significant cost reductions
Consolidation of common platforms for the development of vehicles	Growing interdependence between suppliers and assemblers
Consolidation of the first-tier base	Need to develop systems and modules
Reduction in the number of suppliers	Globalization of the supplier base
Pressure to reduce prices	More expenditure on R&D
Single supplier policy	Increased acquisitions and mergers
Changes in production methods because of modularity	Emergence of mega-suppliers
	Source: Santos and Pinhao 2002

Auto Supplier Location Criteria

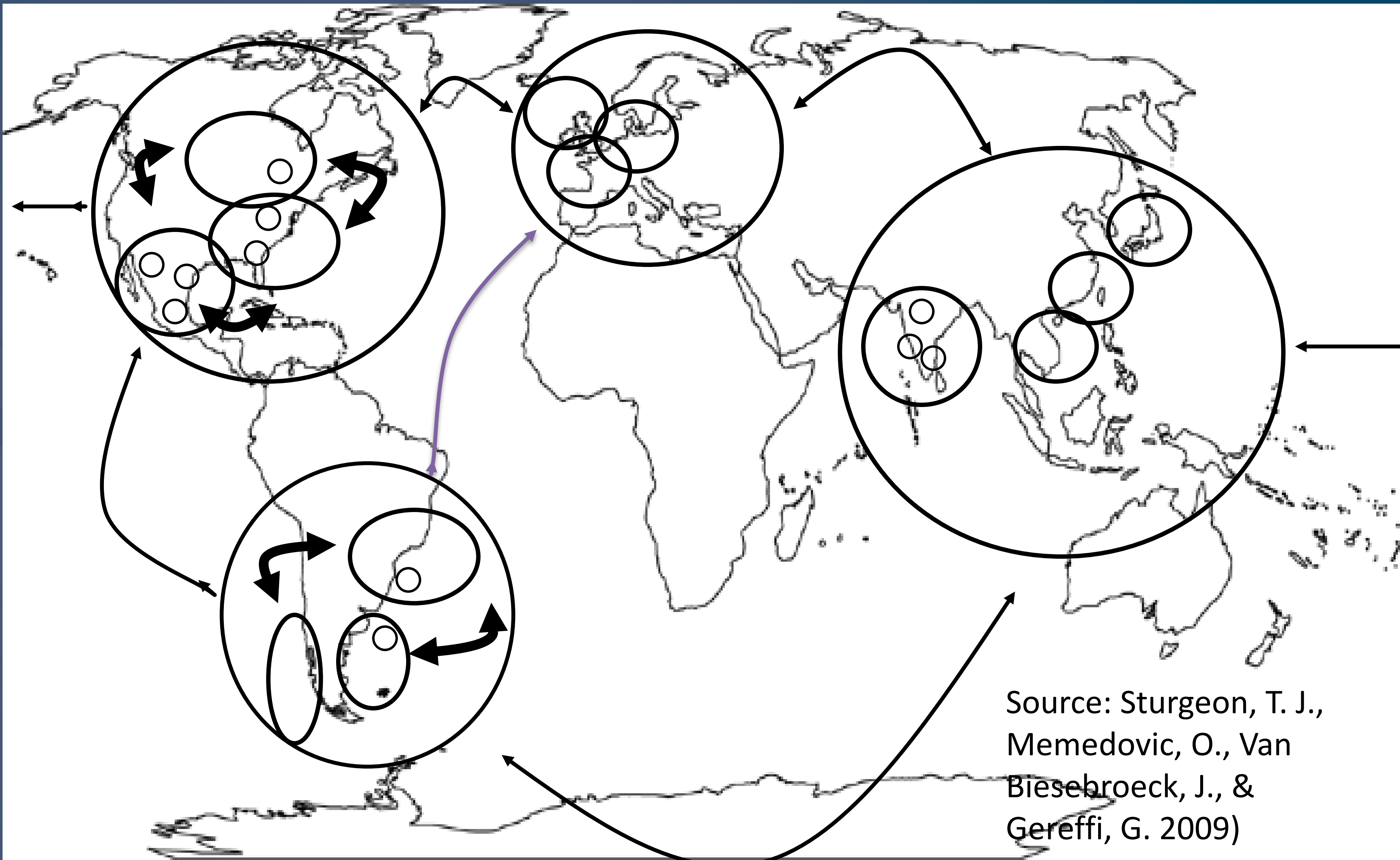
- One day delivery drive time to a final assembly plant
- Ideally two final assembly plants located within the one day drive
- Access to four-lane divided highway/interstate or two-lane highways with limited access and few stoplights
- Two route options for inbound and outbound material
- Access to rail (not a requirement for all suppliers)
- Workforce density 100-150 times the number of projected employees
- Educational assets
- workforce training programs

Sources: (Canup, 2006; Canup, 2007; Goldsmith, n.d.; Klier and Rubenstein, 2008; Murrary, Dowell, and Mayes, n.d.)

Can you be too close?

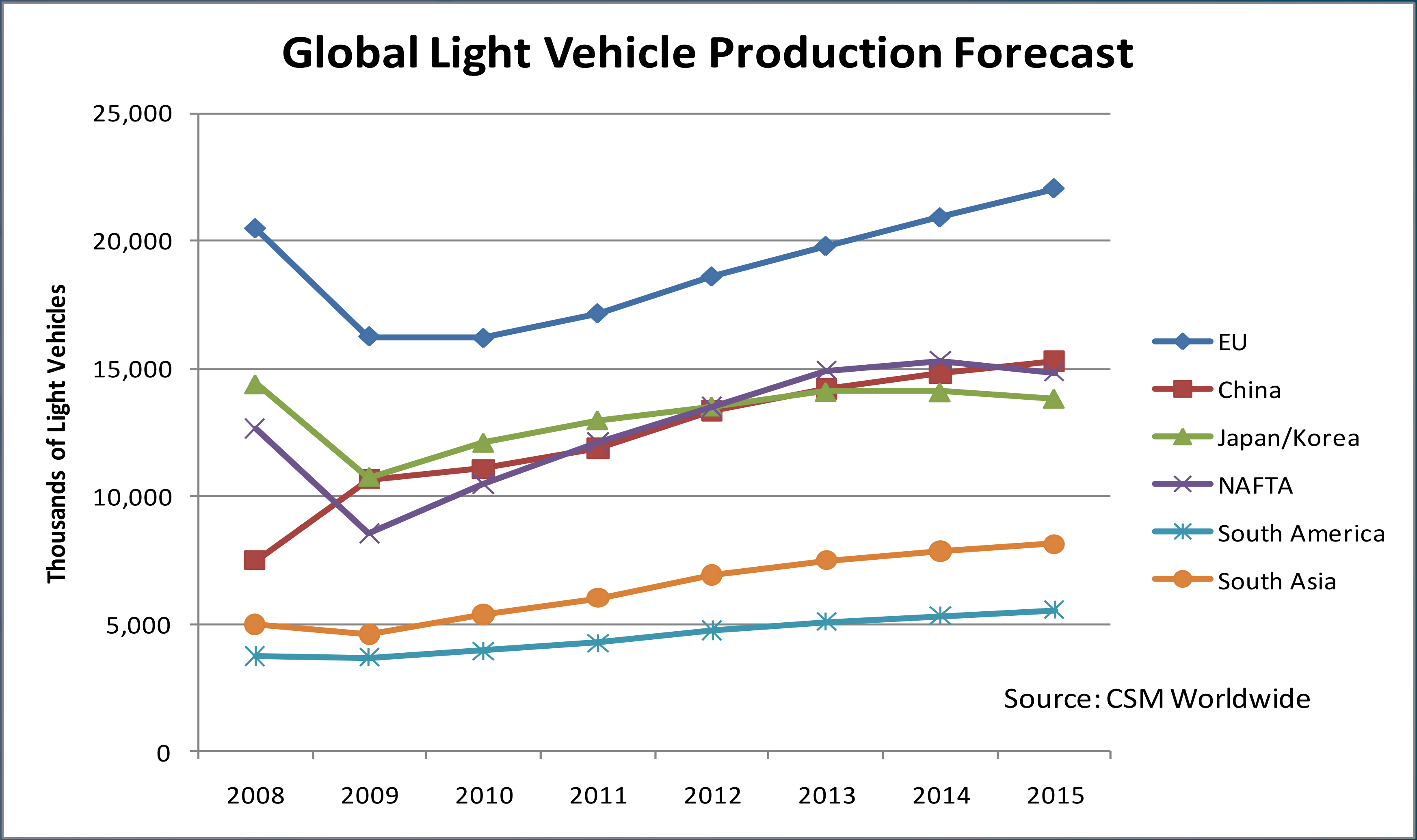
Auto Assembly Facility	Supplier Type	Median Distance	<100 miles from assembly plant	<400 miles from assembly plant
Honda	Domestic	281 miles	13%	73%
	Foreign	175 miles	26%	83%
Toyota	Domestic	311 miles	5%	73%
	Foreign	199 miles	19%	84%
Nissan	Domestic	447 miles	7%	37%
	Foreign	272 miles	17%	65%
BMW	Domestic	495 miles	18%	40%
	Foreign	398 miles	23%	50%
Mercedes-Benz	Domestic	639 miles	6%	27%
	Foreign	435 miles	12%	48%
Source: Klier 1995				

Global Nested Geographic and Organizational Structure



Source: Sturgeon, T. J., Memedovic, O., Van Biesebroeck, J., & Gereffi, G. 2009)

BRIC Markets Are Expected to Grow, but the US and EU Remain Large



Japanese Supply Chains in the Southeast

- Dependence on Trade
- Production line disruptions
- Domestic versus local production

Final Thoughts

- Automakers have adjusted to new “lower” levels
- Trade and linkages will be more important in future
- Growth will remain in supplier-assembler relationship
- Logistics is the glue that holds everything together