



Automotive Supply Chain Impact: Regional and National

NABE – National Association for Business Economics

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Jacqueline Hudson, Economist, Virginia Employment Commission, Moderator

Sponsored by the Regional Utility Roundtable





Introduction

Today's goal is to better understand the “ripple” effects of change in the U.S. automotive industry, particularly in the Southeast. We will not dwell on statistics and demographics. Instead, we will use the recent market and regulatory influences affecting the automotive industry as a guide to illuminate different perspectives, opportunities and challenges in the future. We will explore the notion that technology-intensive industries require fundamentally different support systems than labor-intensive support systems, and those industries will respond faster to future challenges. This transformation will require a better appreciation for the entire supply-chain of each major industry subsector and how that interdependency can help or hurt local, regional and national economies.



NABE Teleconference Topics

- **Technology-Intensive vs. Labor-Intensive**
- **Status of Automotive Industry**
- **Winners List: Plant Expansions**
- **What's on the Horizon?**
- **Policy Implications?**
- **Closing Comments**



Technology-Intensive vs. Labor-Intensive

- Greater value to national, regional, state and local economy
 - 50% of Tech-Intensive manufacturers have sales in excess of \$50 million
 - 30% of Tech-Intensive manufacturers have sales in excess of \$100 million
 - 60% of all R&D is conducted by manufacturers
- Greater investment in workforce
 - 70 percent of technology-intensive manufacturers list labor productivity, availability of a skilled workforce, and labor costs as “extremely or very important” to their decision to locate or expand a factory or R&D center.



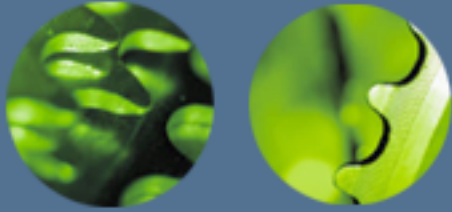
Resource: [RTS, Inc., Technology Intensive Manufacturers in Virginia, August 2001.](#)



Status of the Automotive Industry

- GNP Share = <1%
 - Motor Vehicles & Parts = \$95 billion
- Employment = <1%
 - Motor Vehicles & Parts = 1,015.7 (thousands)

Resource: NAM, Facts About U.S. Manufacturing,
http://www.nam.org/s_nam/bin.asp?CID=202325&DID=233605&DOC=FILE.PDF



Automotive Industry Employment Trends

- Employment Peak - February 2000; 1,330.3
- Employment Trough - March 1996; 1,210.2
- Employment Today - 1,105.7

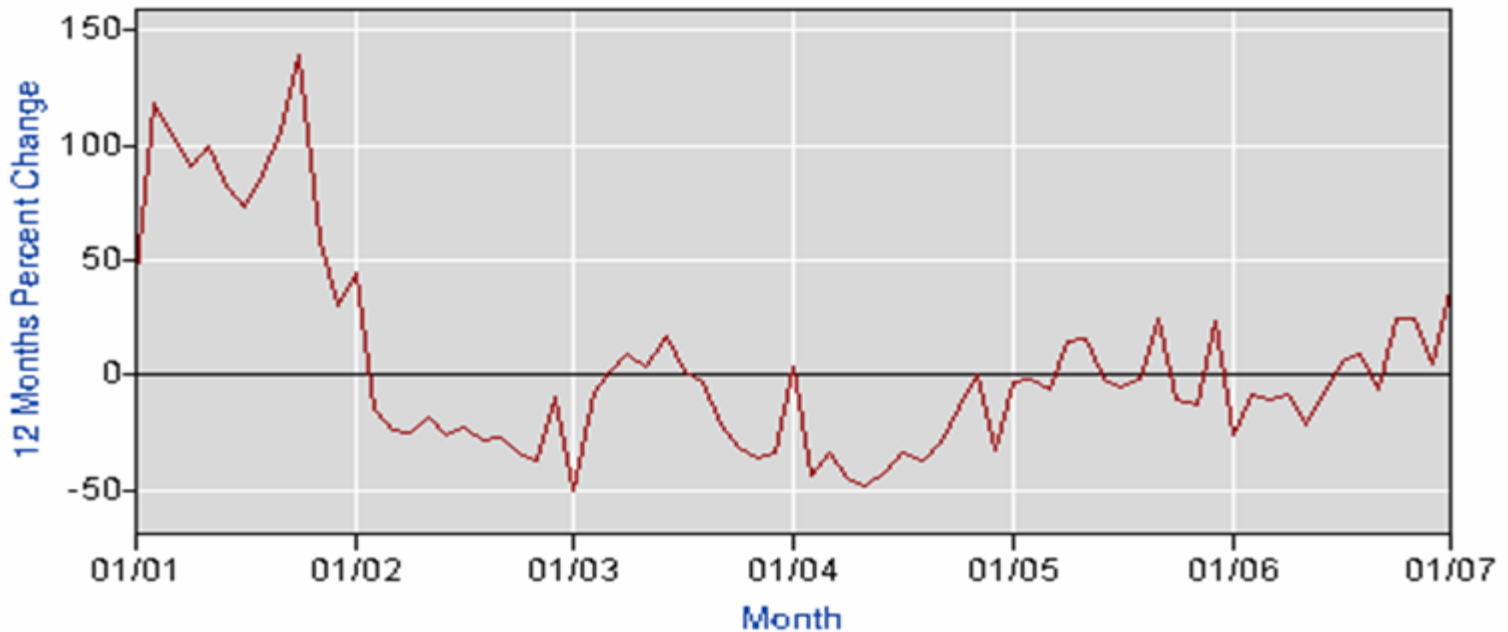
24% Decline

Source: BLS, [Most recent industry-specific peak and trough employment and change through current month, in thousands, 2007.](#)



Mass Layoffs – All U.S. Mfg.

- 12 Months Percent Change Series Id: MLSMS00NN0121003 (1)
Data Element: Layoff events
Industry/Reason/Characteristic: Manufacturing (seasonally adjusted)
Data Series: Mass Layoff
State/Region/Division: United States

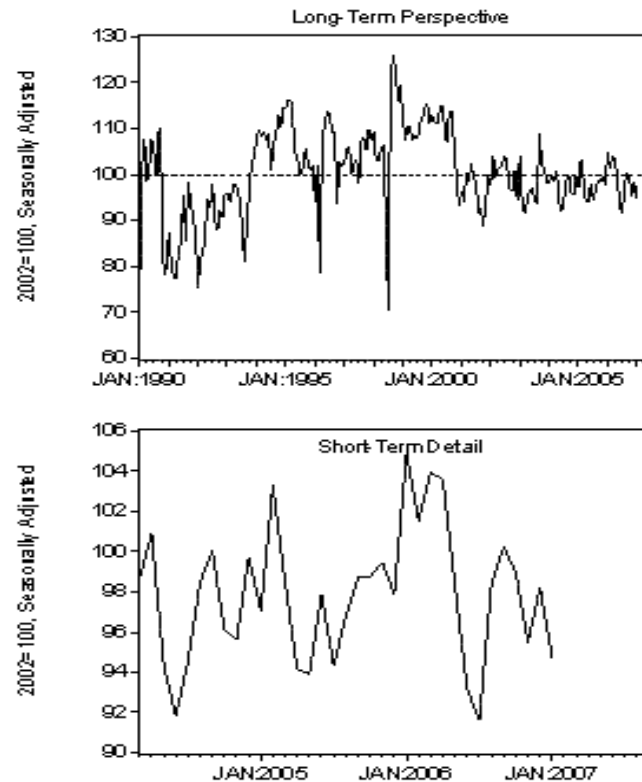




U.S. Industrial Production

U.S. INDUSTRIAL PRODUCTION DATA Cars and Light Trucks

Month	Index (2002=100)	12-Month Change
Jan-2005	97.1	-1.0%
Feb-2005	103.3	3.3%
Mar-2005	98.5	-0.2%
Apr-2005	94.1	-6.7%
May-2005	93.9	-0.4%
Jun-2005	97.9	6.6%
Jul-2005	94.3	-0.3%
Aug-2005	96.8	-1.7%
Sep-2005	98.7	-1.3%
Oct-2005	98.8	2.8%
Nov-2005	99.5	4.0%
Dec-2005	97.9	-1.8%
Jan-2006	104.9	8.1%
Feb-2006	101.5	-1.7%
Mar-2006	104.0	5.6%
Apr-2006	103.5	10.0%
May-2006	98.3	4.6%
Jun-2006	93.1	-4.8%
Jul-2006	91.6	-2.8%
Aug-2006	98.4	1.6%
Sep-2006	100.2	1.5%
Oct-2006	99.0	0.3%
Nov-2006	95.5	-4.0%
Dec-2006	98.2	0.3%
Jan-2007	94.7	-9.7%



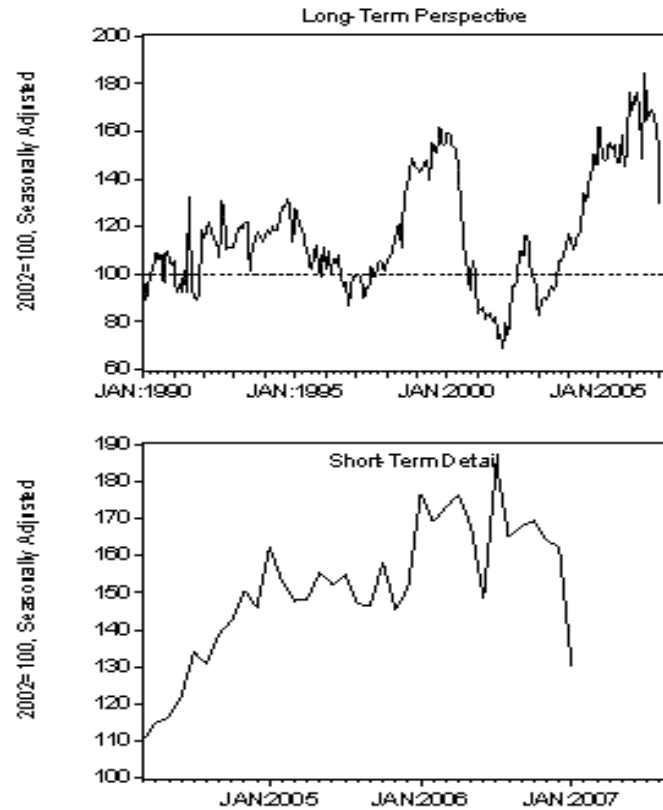


U.S. Industrial Production

U.S. INDUSTRIAL PRODUCTION DATA

Heavy Trucks

Month	Index (2002=100)	12-Month Change
Jan-2005	162.3	38.4%
Feb-2005	153.0	34.4%
Mar-2005	147.8	34.0%
Apr-2005	148.4	29.0%
May-2005	155.4	33.6%
Jun-2005	152.2	24.6%
Jul-2005	154.9	15.6%
Aug-2005	147.0	12.5%
Sep-2005	146.6	5.6%
Oct-2005	158.3	11.0%
Nov-2005	145.6	-3.3%
Dec-2005	151.3	3.6%
Jan-2006	176.8	8.9%
Feb-2006	169.2	10.6%
Mar-2006	173.1	17.1%
Apr-2006	176.5	19.0%
May-2006	167.9	8.0%
Jun-2006	148.4	-2.5%
Jul-2006	184.9	19.3%
Aug-2006	165.0	12.3%
Sep-2006	168.0	14.6%
Oct-2006	169.4	7.0%
Nov-2006	164.1	12.7%
Dec-2006	162.3	7.3%
Jan-2007	129.8	-26.5%





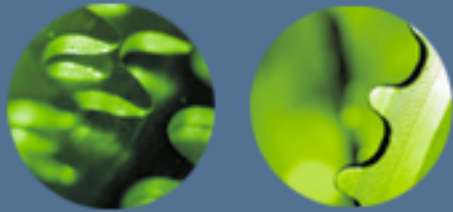
Why?

- **Cars & Light Trucks Production Changes**
 - Legacy Costs (e.g., pension costs, labor costs)
 - Aging Physical Plants (need flexible mfg. platforms)
 - Foreign Direct Competition (Japan & Korea)
 - Fuel Costs & Market Shift
- **Heavy Trucks Production Changes**
 - Ultra Low Sulfur Diesel Standard 2007 (15 ppm rule)
 - 5 cents per gallon increase (EPA estimate)
 - Lubricity & engine warranty concerns
 - Early sales to avoid new ULSD-compliant product “glitches”



Winners

- **Winners – New Plant Announcements:**
 - Alabama – 2005, Hyundai, \$1 billion & 2,000 jobs; 2003, DaimlerChrysler, \$600 million & 2,000 jobs = \$1.6 billion & 4,000 jobs
 - Georgia – 2006, KIA, \$1.2 billion & 2,500 jobs
 - Indiana – 2007, Honda, \$550 million & 2,000 jobs
 - South Carolina – 2002, BMW, \$400 million & 400 jobs
 - Texas – 2006, Toyota, \$800 million & 2,000 jobs
 - Mississippi – 2007, Toyota, \$1.3 billion & 2,000 jobs; 2003, Nissan, \$1.4 billion & 2,000 jobs = \$2.7 billion & 4,000 jobs



Ford Case Study Norfolk, Virginia



- Employment = 2,500
- Suppliers' Employment = 2,500 (est.)

Total Employment Loss = 5,000 (est.)

Total Economic Loss = \$1 billion+ (est.)



Ford's Challenge in Virginia & U.S.

- Flexible Manufacturing; Ford set a goal of having 82% of its North American facilities “flexible” by 2008
 - Basic “flexibilities” include *machine flexibility* - the ease with which a machine can process various operations; *material handling flexibility* - a measure of the ease with which different part types can be transported and properly positioned at the various machine tools in a system; and *operation flexibility* - a measure of the ease with which alternative operation sequences can be used for processing a part type.
- Reduce Global Suppliers List 2/3 by 2008-2009
 - Estimated \$70 billion in work annually
 - 2,500 companies today
 - 800 by 2008-09



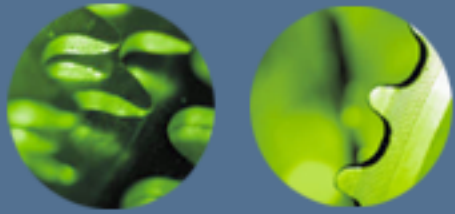
What's On the Horizon?

- Rapid Innovation & Regulation in Fuel Diversity
- Component Parts Content Regulation: Mercury-free Switches, Recyclable Batteries
- CAFE Standards
- Restrictive Air Emission Standards
- Workforce
- Automation, Automation, Automation!
- Innovation, Innovation, Innovation!



Policy Implications

- Is it cost-effective to provide incentives to automobile manufacturers and suppliers?
- Should the U.S. & States avoid “sweeping” changes in regulations affecting the manufacturing industry in order to protect jobs?
- Should the U.S. & States “Level the Playing Field” relating to external costs (e.g., taxation, technology, workforce training, regulation, etc.) for globally competitive industries?
- Are Fuel Efficient Cars & Trucks Bad for Federal & State Transportation Funds?
- Will there be a workforce for the technology-intensive manufacturer?
- Should there be a Federal & State coordinated effort to retool the industry and train the next generation of workers?



What Can NABE Do?

1. Translate Data and Trends Into Information
2. Draw Relationships Between Economic Performance and Policies/Regulations When Possible
3. Encourage Profession to Better Understand and Inform Policy-makers About the Interdependence of Industry Clusters and Industry Supply-Chains



Closing Comments

The effects of the global economy are swift and unassailable for the domestic automotive industry. Foreign direct competition, legacy costs and infrastructure costs have compounded the effects of a “flat world” on this industry.

The net effect will be the complete reinvention of an entire industry, including its supply-chain.

This reinvention process will require Federal and State Governments to drive immediate and aggressive policy solutions to the workforce training and technology investment challenges facing the industry in order to achieve world-class competitiveness. Further, States that fail to meet these challenges will simply head down a dead-end road where there is no “road-side assistance” available, except for the unemployed.

- Brett A. Vassey



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Resources

- NAM, [The Escalating Cost Crisis: An Update on Structural Cost Pressures Facing U.S. Manufacturers, 2006.](#)
Illustrates the increasing costs for U.S. manufacturers against 19 top trading partners.
- JLARC, [The Impact of Regulations on Virginia's Manufacturing Sector, October 2006.](#)
Benchmarks regulatory costs for sector and in five Southern States. First study of its kind in the U.S.
- Ernst & Young, [Virginia Taxes Paid by Manufacturers, August 2005.](#)
Benchmarks individual and effective tax rates on Virginia manufacturers against five southern states and compares contributions by sector (e.g., retail).
- Mangum Economic Consulting, [Skilled Trades Gap Analysis, January 2007.](#)
Model of how to project future demand in key manufacturing occupations by state or region.
- RTS, Inc., [Technology-Intensive Manufacturers in Virginia: Performance and Prospects; August 2001.](#)
Redefines modern manufacturing and its necessities away from labor-intensive manufacturing.