

Regional Economic Dynamics and Target Industry Analysis

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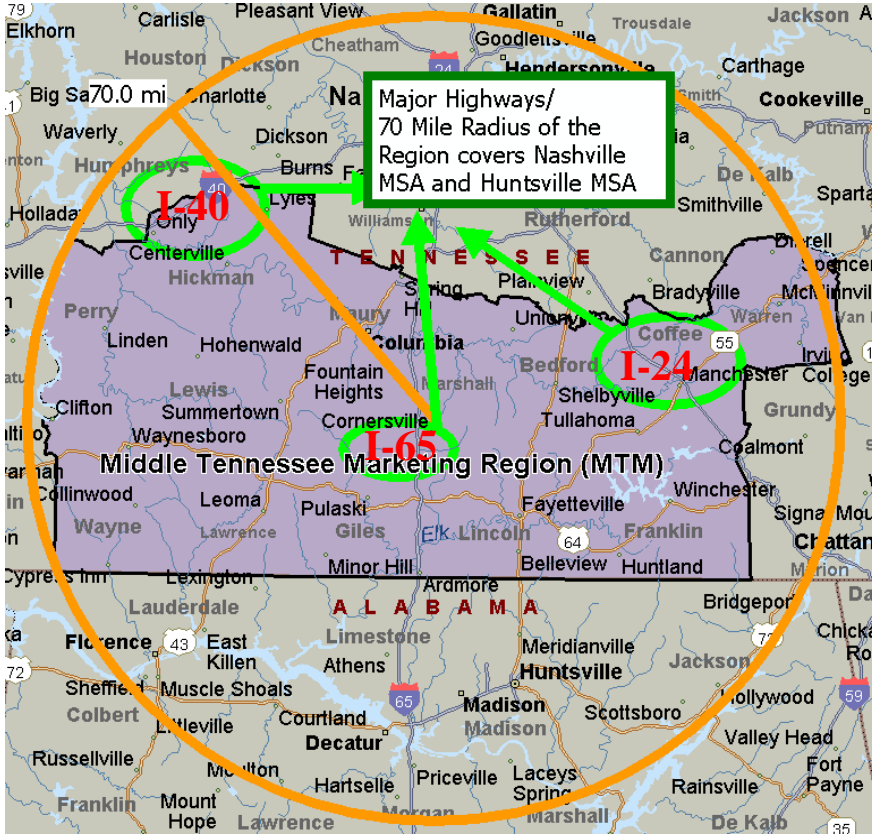
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Murfreesboro, TN 37132**

Presentation Outline

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- I. Regional Overview
- II. Comparative Economic and Demographic Dynamics
- III. Regional Socio-Economic Dynamics
- IV. Regional Strengths and Weaknesses
- V. Industry Clusters: An Overview
- VI. Target Clusters
- VII. Recommendations and Conclusion

I. Regional Overview



I. Regional Overview

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Strategically Located

- Strategically located between Nashville MSA and Huntsville MSA, AL, the region includes the following 14 counties:
 - Bedford, Coffee, Franklin, Giles, Hickman, Lawrence, Lewis, Lincoln, Marshall, Maury, Moore, Perry, Warren and Wayne

I. Regional Overview

- Region has access to nearly 2.5 million population within 70 mile radius
- These 14 counties represent about 7.5 percent of TN population, 6.12 percent of TN employment, 7.23 percent of TN households
 - MTM Region’s average productivity is higher than the U.S. productivity, while income per capita and average wage 69 and 67 percent of the U.S. average, respectively

Table III.1: Region At A Glance (2006)

Indicators	Middle Tennessee Marketing Region	
	MTM Region	% of Tennessee
Population	452,448	7.49%
Employment	221,847	6.12%
Number of Industries	304	63.07%
Households	178,328	7.23%
Total Personal Income	\$11,336,690,000	5.81%
Output	\$31,770,393,000	6.52%
Value-Added	\$12,568,282,000	5.15%
Per Capita Indicators	MTM Region	As % of United States
<i>Income per capita</i>	\$25,056	69.07%
<i>Productivity</i>	\$143,209	101.00%
<i>Gross regional product per capita</i>	\$27,778	63.03%
<i>Average wage</i>	\$28,853	67.17%

Data Source: IMPLANpro, www.census.gov & BERC estimates

I. Regional Overview

While strategically located between two metro areas, the region itself is primarily rural

Map III.2: Rural-Urban Continuum



Source: USDA/ERS & BERC Estimates

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II. Comparative Economic and Demographic Dynamics: Population

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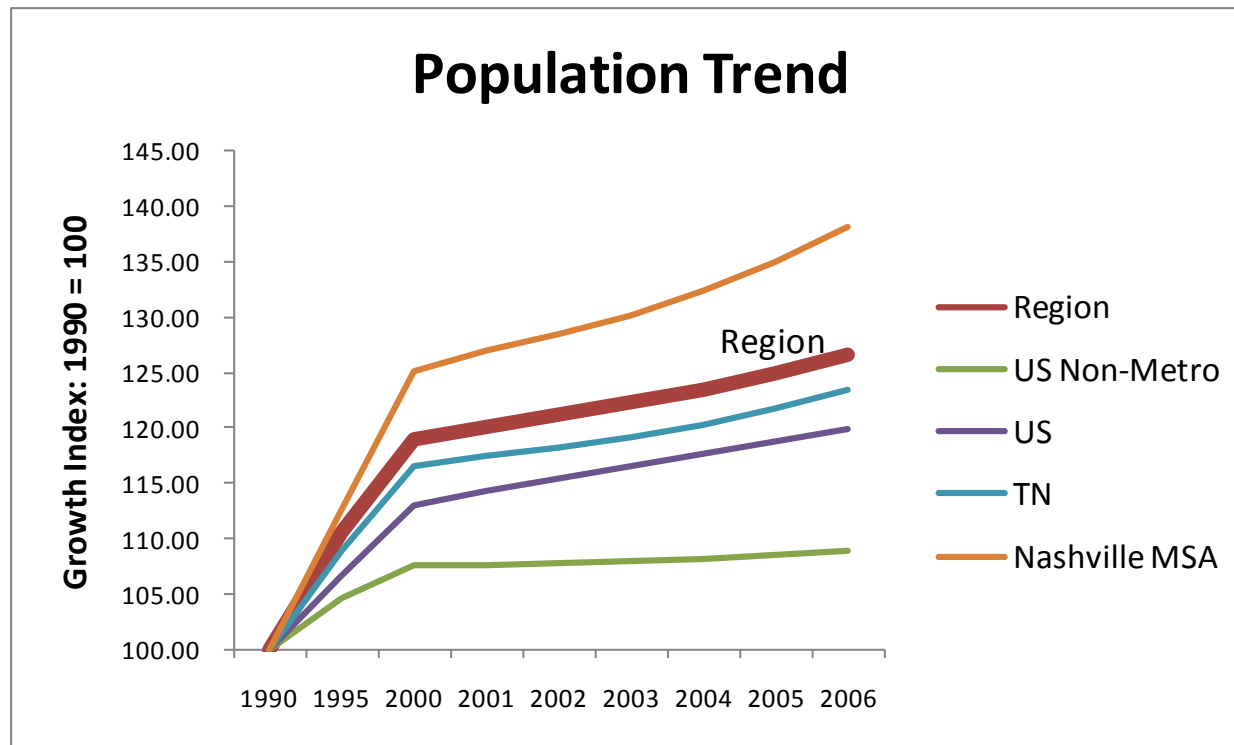
- Population is healthier
- High percentage of aging population
- Population growth driven by migration

Source: Woods & Poole, Economics, Census Bureau & BERC Estimates

II. Comparative Economic and Demographic Dynamics

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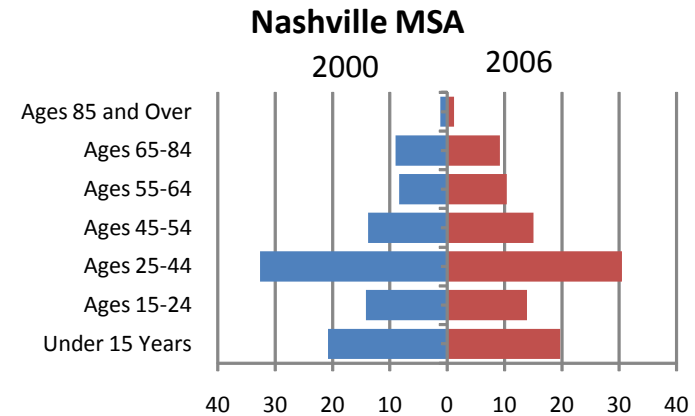
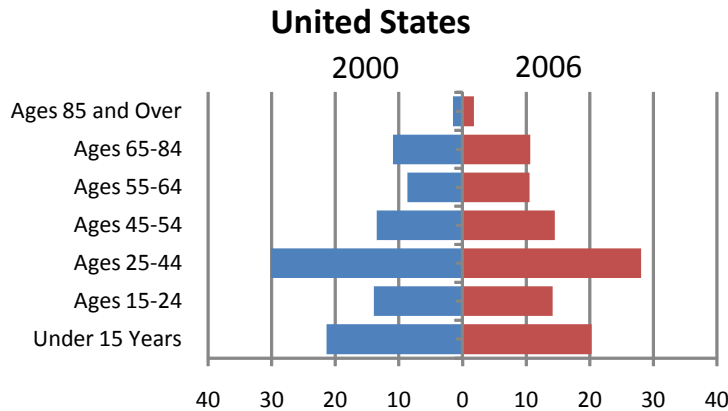
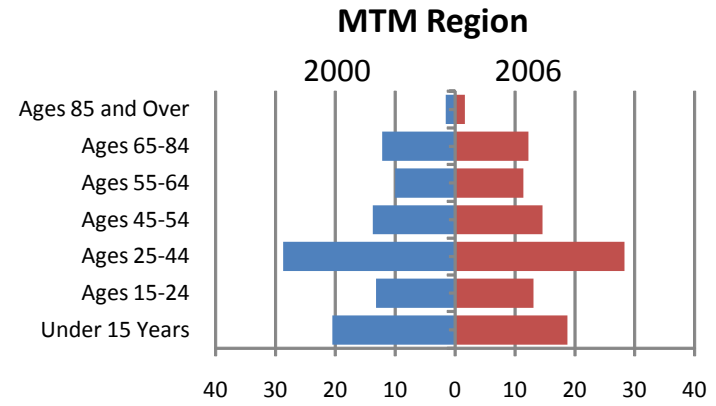
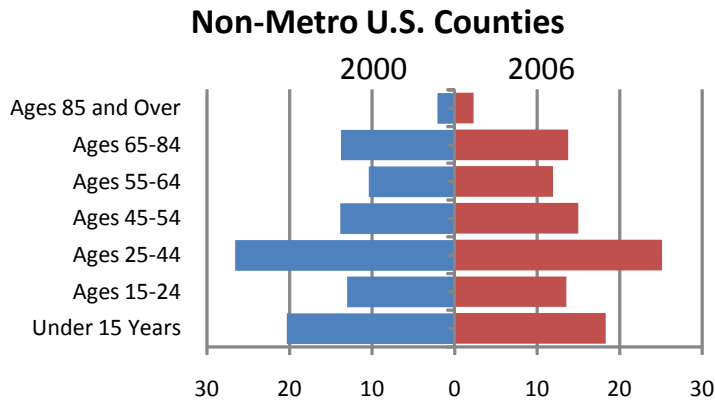
- Population growth trend is healthier in the region



Source: Woods & Poole, Economics, Census Bureau & BERC Estimates

II. Comparative Economic and Demographic Dynamics

- Rural counties and the region have relatively higher percent of aging population

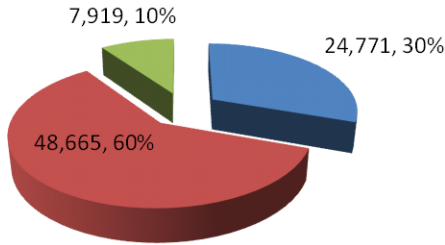


II. Comparative Economic and Demographic Dynamics

- Region's recent population growth is primarily driven by migration

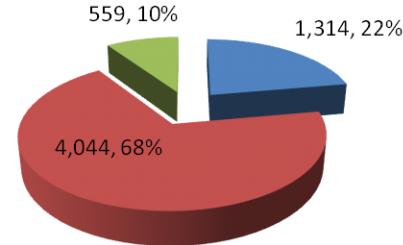
Tennessee: Sources of Population Growth (2006-2007)

■ Natural Increase ■ Migration ■ Immigration



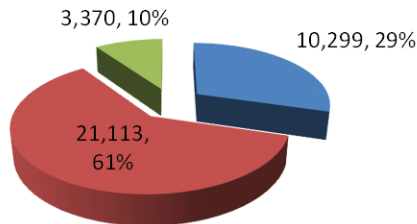
MTM Region: Sources of Population Growth (2006-2007)

■ Natural Increase ■ Migration ■ Immigration



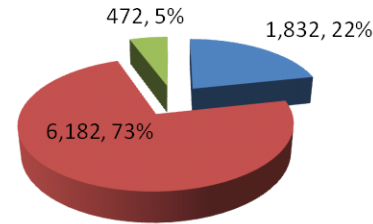
Nashville MSA: Sources of Population Growth (2006-2007)

■ Natural Increase ■ Migration ■ Immigration



Huntsville MSA, AL: Sources of Population Growth (2006-2007)

■ Natural Increase ■ Migration ■ Immigration



II. Comparative Economic and Demographic Dynamics: Per Capita Income

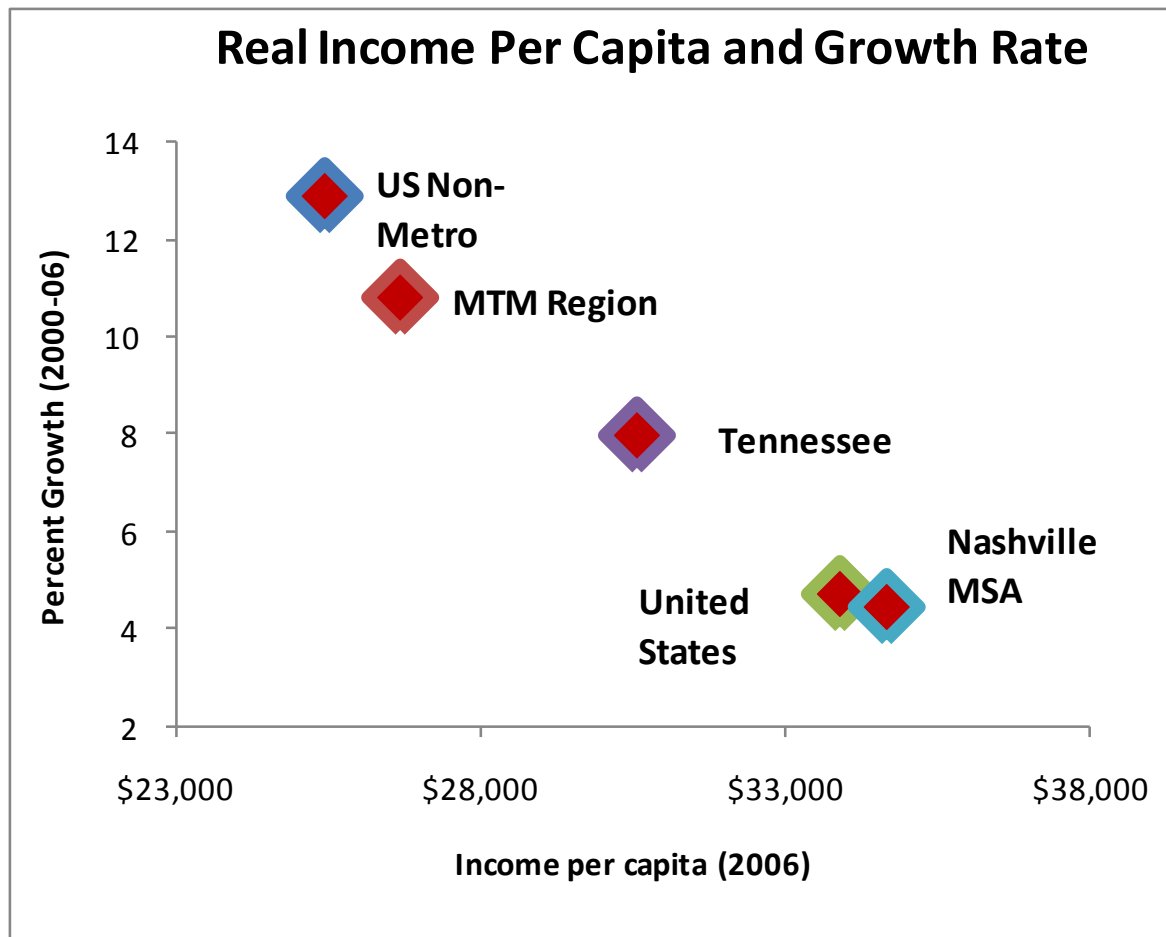
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- Growth is up, lower than State, Nashville, and United States
- 21% less than United States average

II. Comparative Economic and Demographic Dynamics: Per Capita Income

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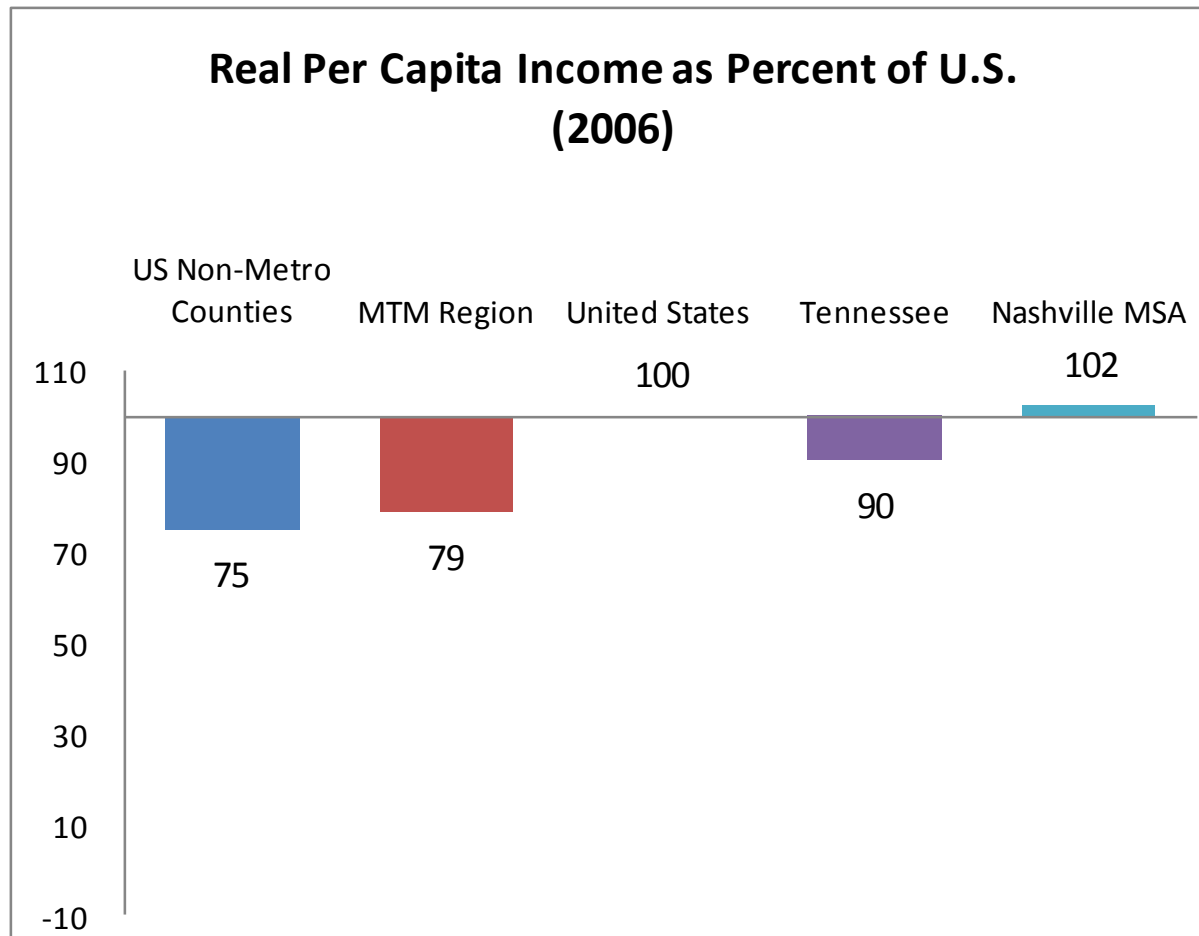
- Growth is up, but significantly lower than Tennessee, U.S. and Nashville



II. Comparative Economic and Demographic Dynamics: Per Capita Income

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- Region's per capita income 21 percent less than U.S. average



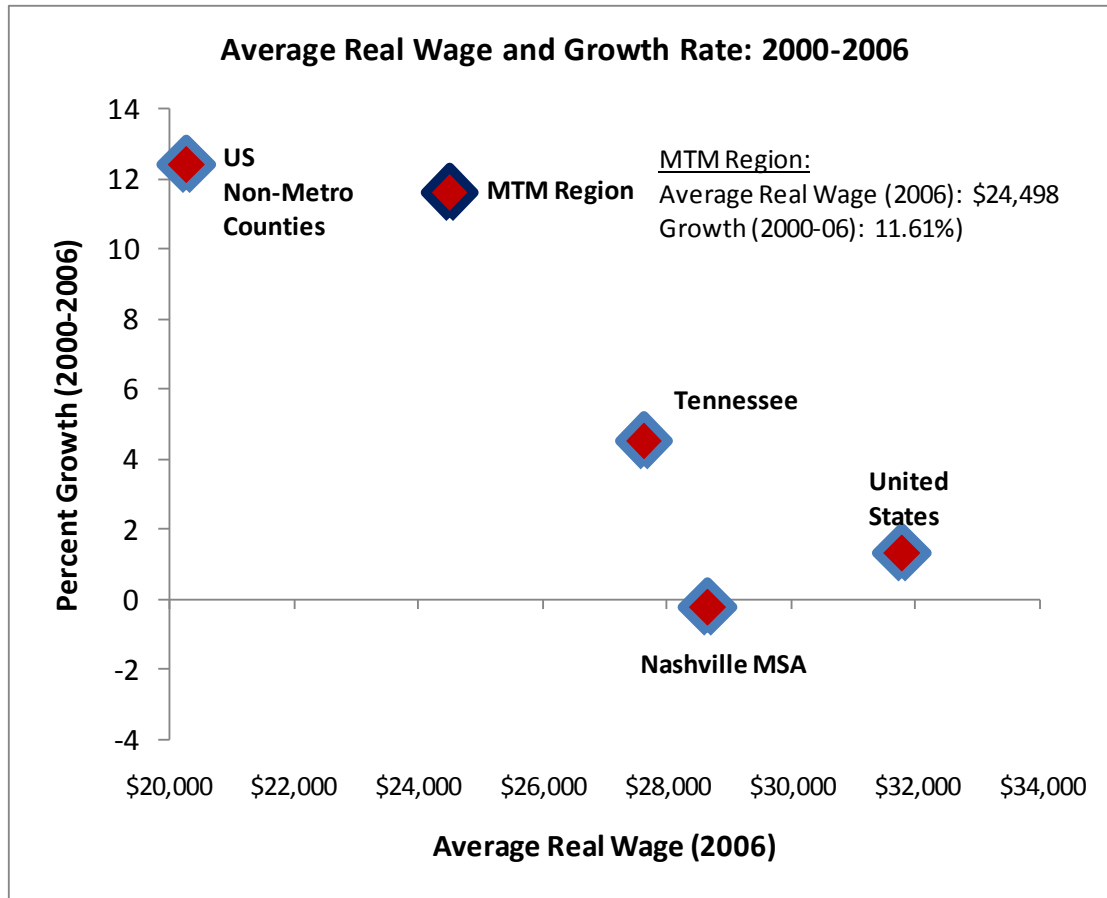
II. Comparative Economic and Demographic Dynamics: Average Wage

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- Growth is significant, lags State, Nashville and United States
- 23% less than United States average

II. Comparative Economic and Demographic Dynamics: Average Wage

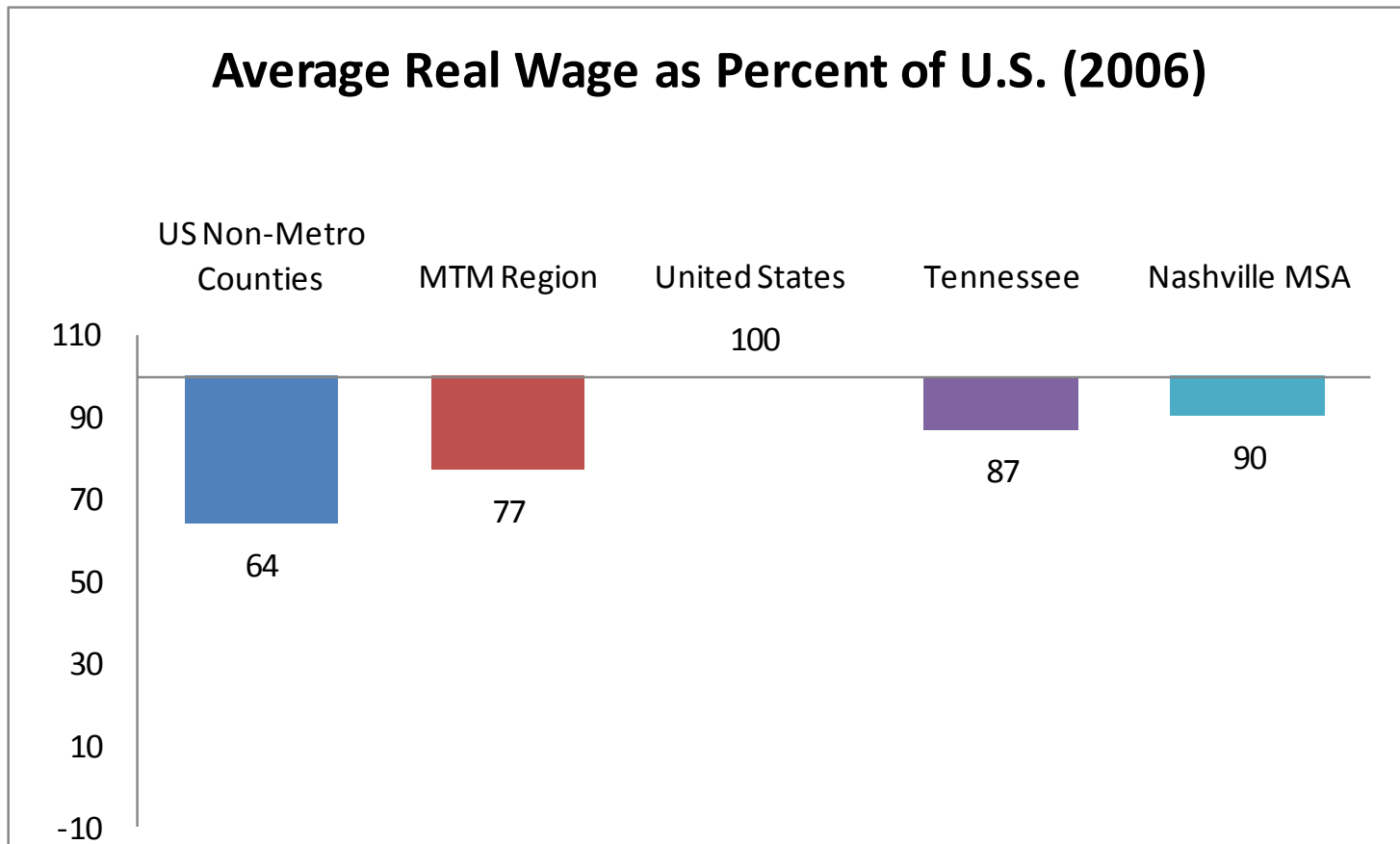
- Average wage growth is significant but lags significantly behind U.S., Tennessee, and Nashville MSA



II. Comparative Economic and Demographic Dynamics: Average Wage

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- Average wage is 23 percent less than the U.S. average



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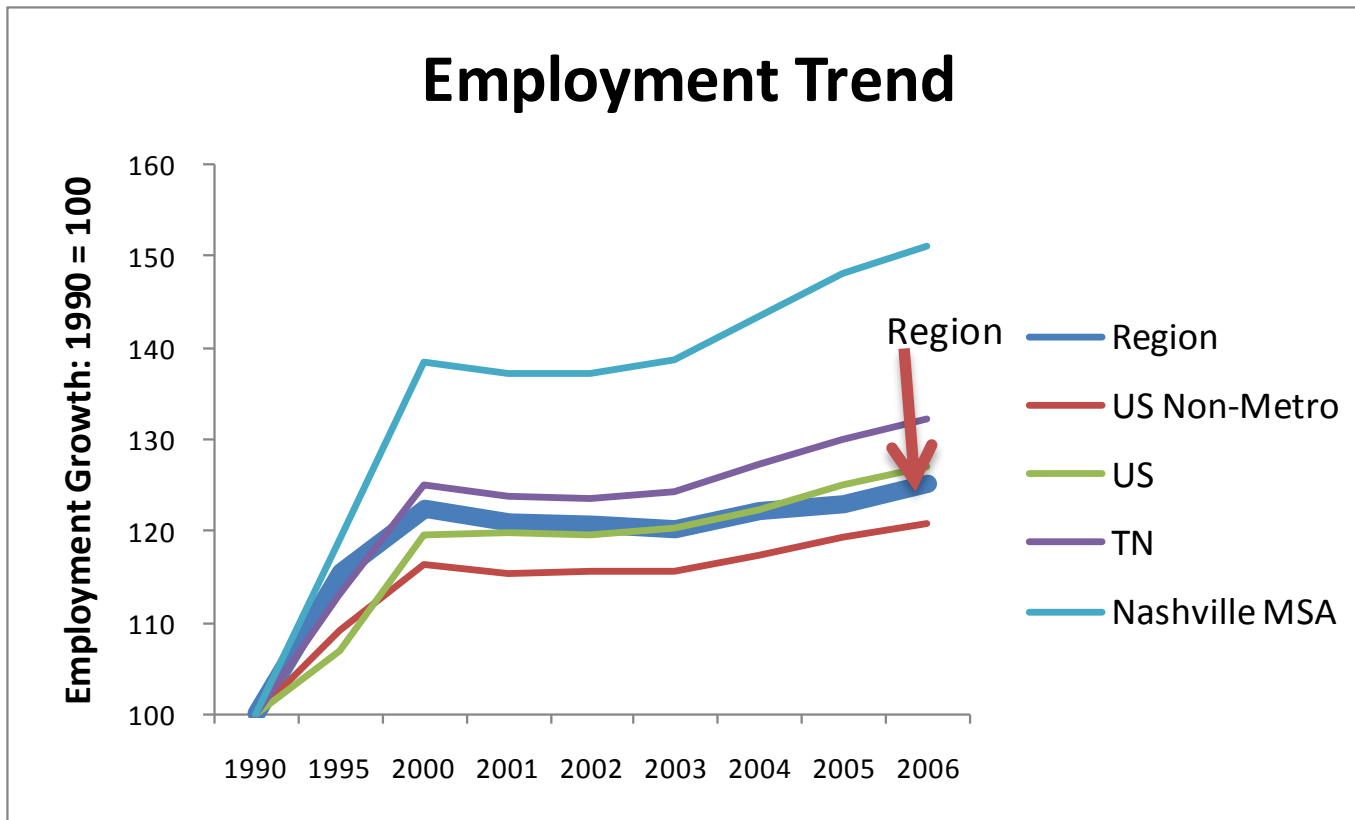
III. Regional Socioeconomic Dynamics: Employment Growth

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- Close to United States average, lags Nashville MSA and State
- Manufacturing sector shedding jobs
- Manufacturing is still the key employer

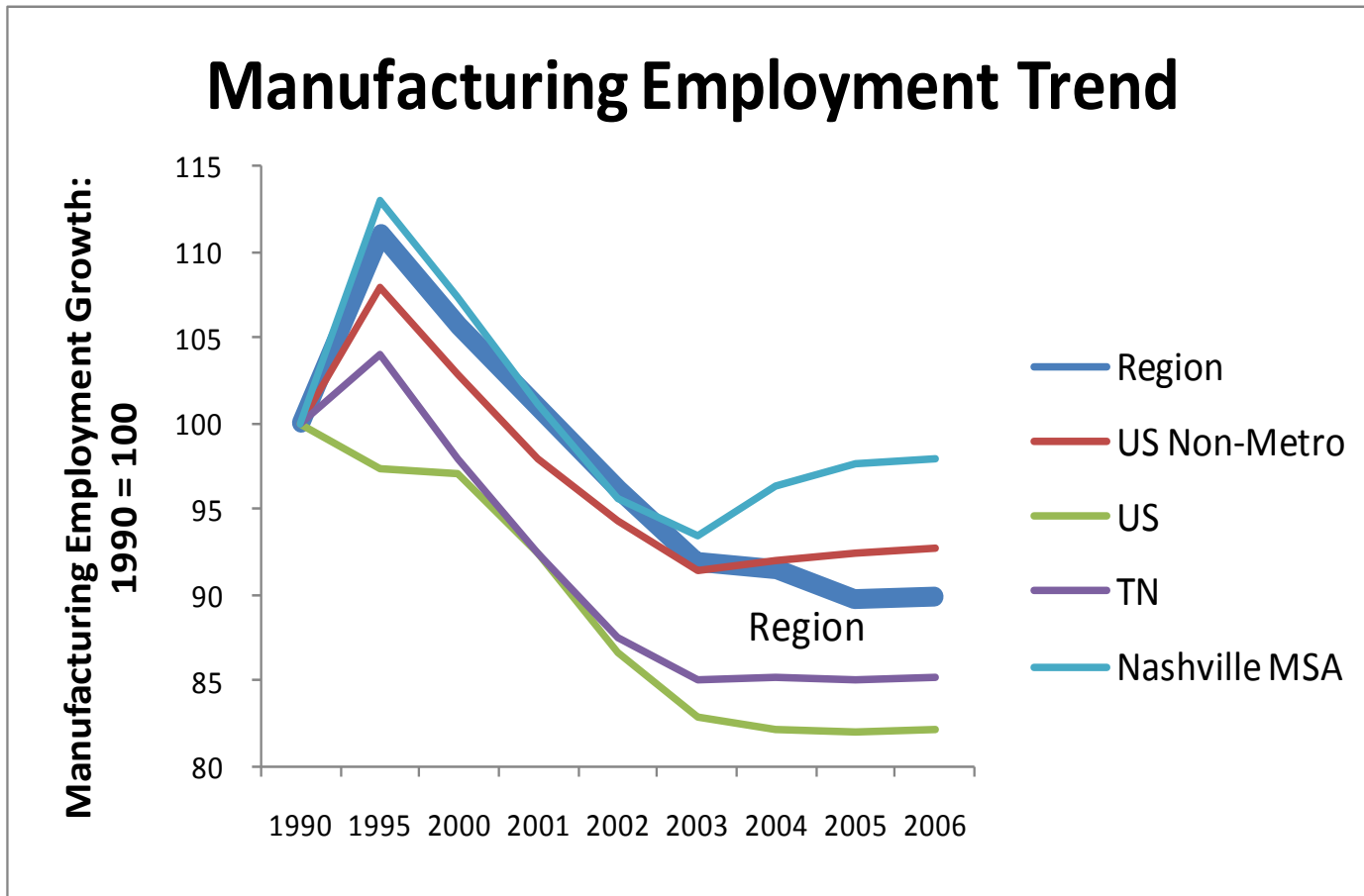
III. Regional Socioeconomic Dynamics: Total Employment

- Region's employment growth is closer to the U.S. average but significantly lags Nashville MSA and Tennessee



III. Regional Socioeconomic Dynamics: Manufacturing Employment

- Region's manufacturing sector continues to shed jobs



III. Regional Socioeconomic Dynamics: Sectoral Employment

- Manufacturing sector dominates the economic landscape in the region

Employment by Major Industry Groupings (2007 Q1): Middle Tennessee Marketing Region (MTM)

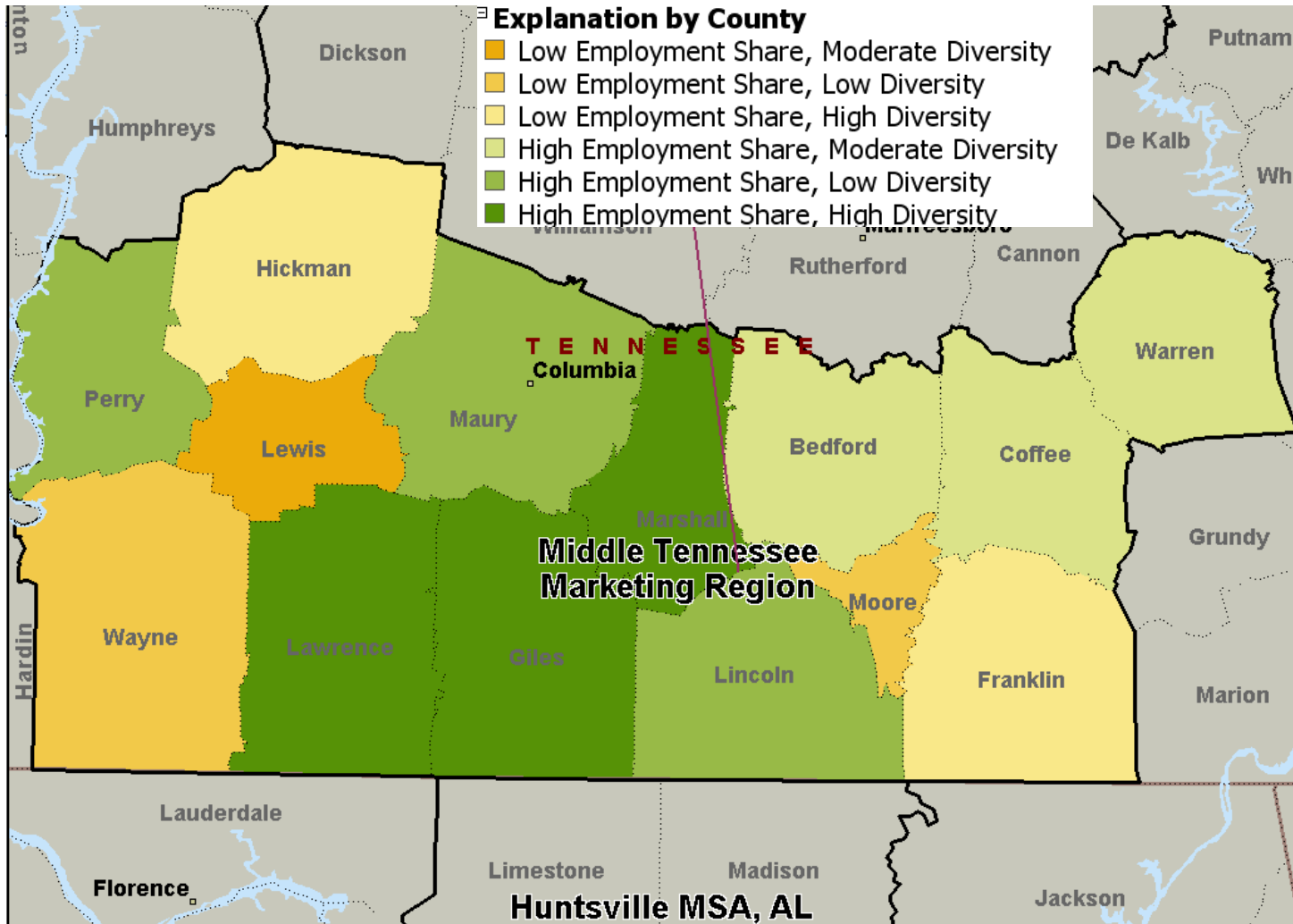
	Employment	Share (%)
Agriculture, Mining, Construction and Utilities	9,479	5.98
Manufacturing	41,342	26.09
Wholesale and Retail Trade	23,603	14.90
Transportation and Warehousing	4,916	3.10
Enabling Industries*	23,579	14.88
Education and Health Services	34,760	21.94
Amusement, Hospitality and Other services	14,911	9.41
Grand Total**	158,450	

BERC and ES202 Data

*Includes sectors from business to information services

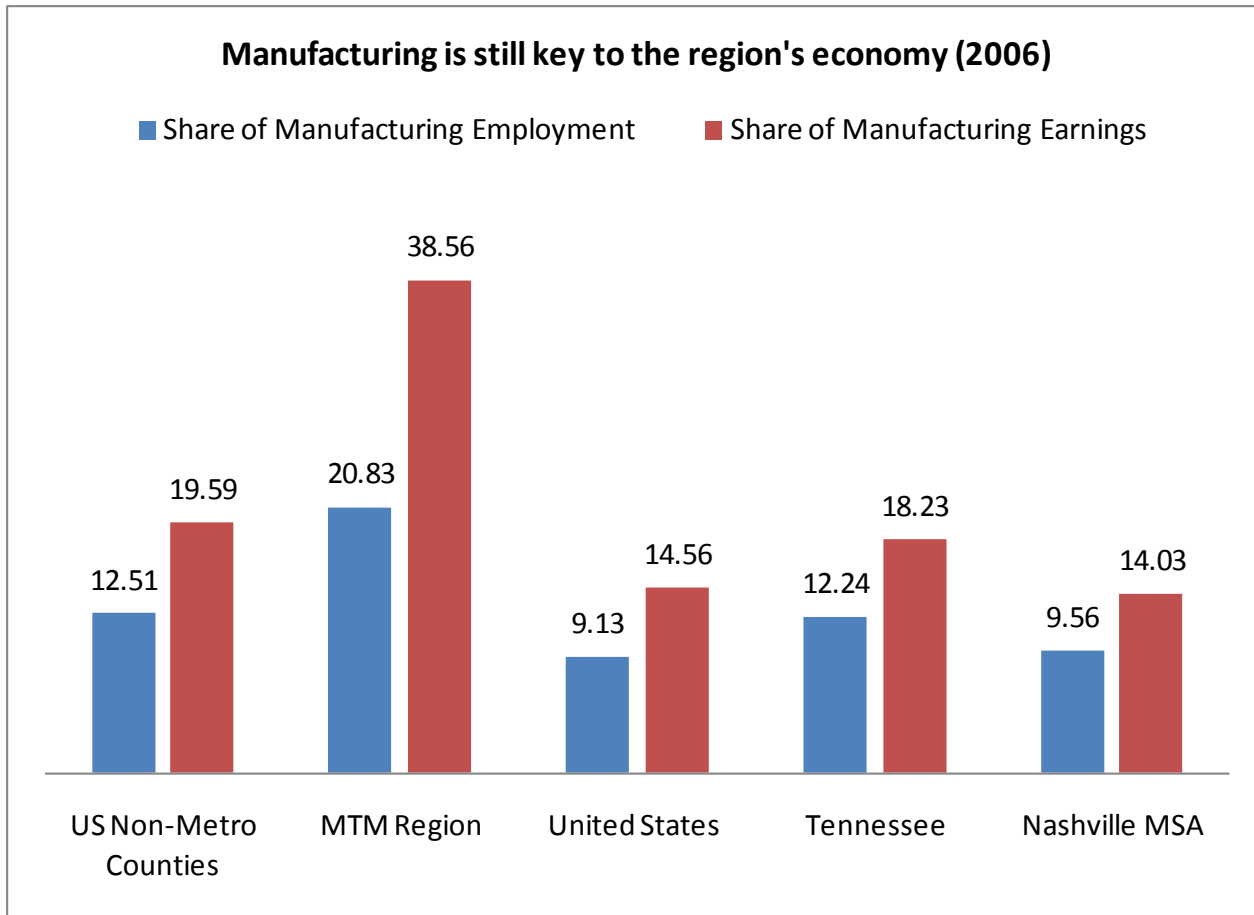
**Public Administration is excluded.

III. Regional Socioeconomic Dynamics: Manufacturing Sector Diversity



III. Regional Socioeconomic Dynamics: Manufacturing Employment

- Manufacturing continues to be key to the region's economy



II. Comparative Economic and Demographic Dynamics: Manufacturing Employment

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“We cannot afford to lose our manufacturing capabilities.”

A Local Economic Development Official

III. Regional Socioeconomic Dynamics: Economic Diversity

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- Economic diversity refers to the even distribution of employment across sectors

“We do not want to put all of our eggs in one basket.”

A local economic development official

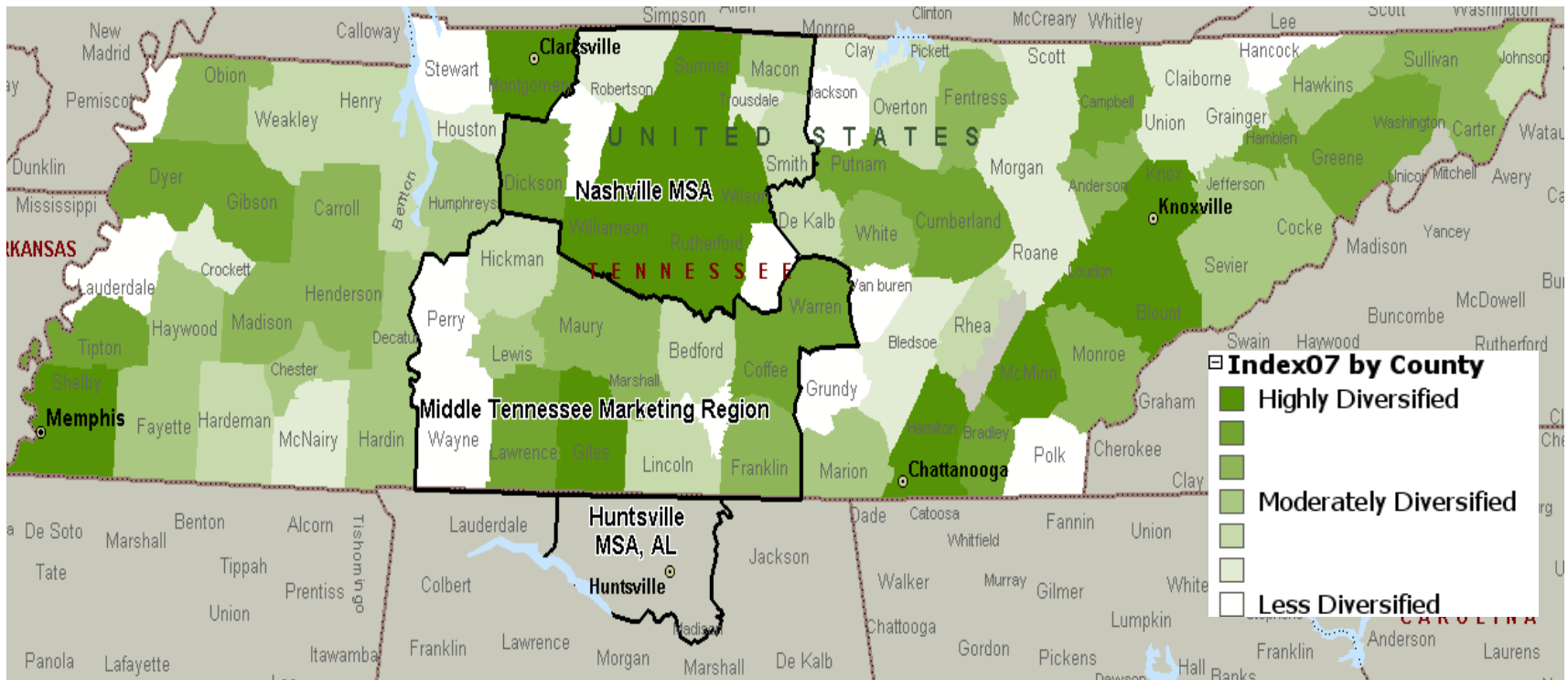
III. Regional Socioeconomic Dynamics: Economic Diversity

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- Region has a diverse economy
- Individual counties' diversity varies significantly
- Overall economic diversity increased

III. Regional Socioeconomic Dynamics: Economic Diversity

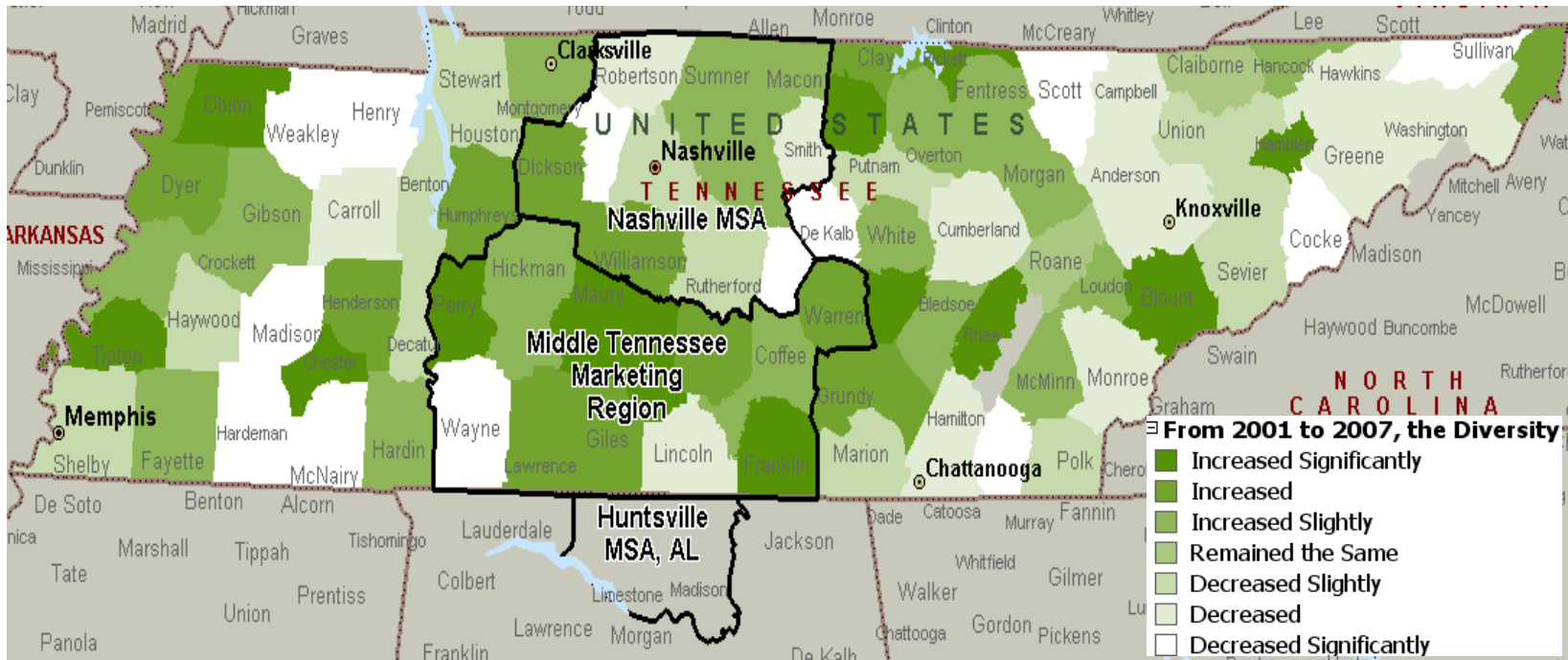
- Region as a whole has a diverse economy; however, individual counties' diversity varies significantly



III. Regional Socioeconomic Dynamics: Change in Economic Diversity

- Overall, economic diversity in the region's counties increased significantly

ECONOMIC DIVERSITY



III. Regional Socioeconomic Dynamics: Economic Vitality and Autonomy

- Economic vitality refers to employment share of establishments by employment size
- Autonomy refers to the employment share of branch operations in the region

Data in this section is processed from “www.youreconomy.org”

III. Regional Socioeconomic Dynamics: Economic Vitality and Autonomy

- Over the years, number of branch operations increased but employment share declined
- Government and nonprofits are important part of economic life
- Small businesses are critically important in the region

Regional Economic Vitality and Autonomy

Establishments	Region		1993-2006 Average	
	2004-2006 Average		Number	Percent (%)
	Number	Percent (%)	Number	Percent (%)
Government & Nonprofit	2,184	10.9%	1,833	10.3%
Branch Operation	1,144	5.7%	1,049	5.9%
Local Businesses	16,720	83.4%	14,896	83.8%
By Employment Size				
Start-up (1-9)	14,871	88.9%	13,148	88.3%
Small (10-99)	1,757	10.5%	1,661	11.2%
Medium (100-499)	79	0.5%	76	0.5%
Large (500+)	12	0.1%	9	0.1%

Jobs	2004-2006 Average		1993-2006 Average	
	Number	Percent (%)	Number	Percent (%)
Government & Nonprofit	29,815	15.3%	27,712	14.7%
Branch Operation	53,285	27.4%	60,263	32.0%
Local Businesses	111,245	57.2%	100,115	53.2%
By Employment Size				
Start-up (1-9)	37,629	33.8%	35,700	35.7%
Small (10-99)	38,966	35.0%	37,028	37.0%
Medium (100-499)	13,895	12.5%	13,450	13.4%
Large (500+)	20,756	18.7%	13,937	13.9%

III. Regional Socioeconomic Dynamics: Economic Vitality and Autonomy

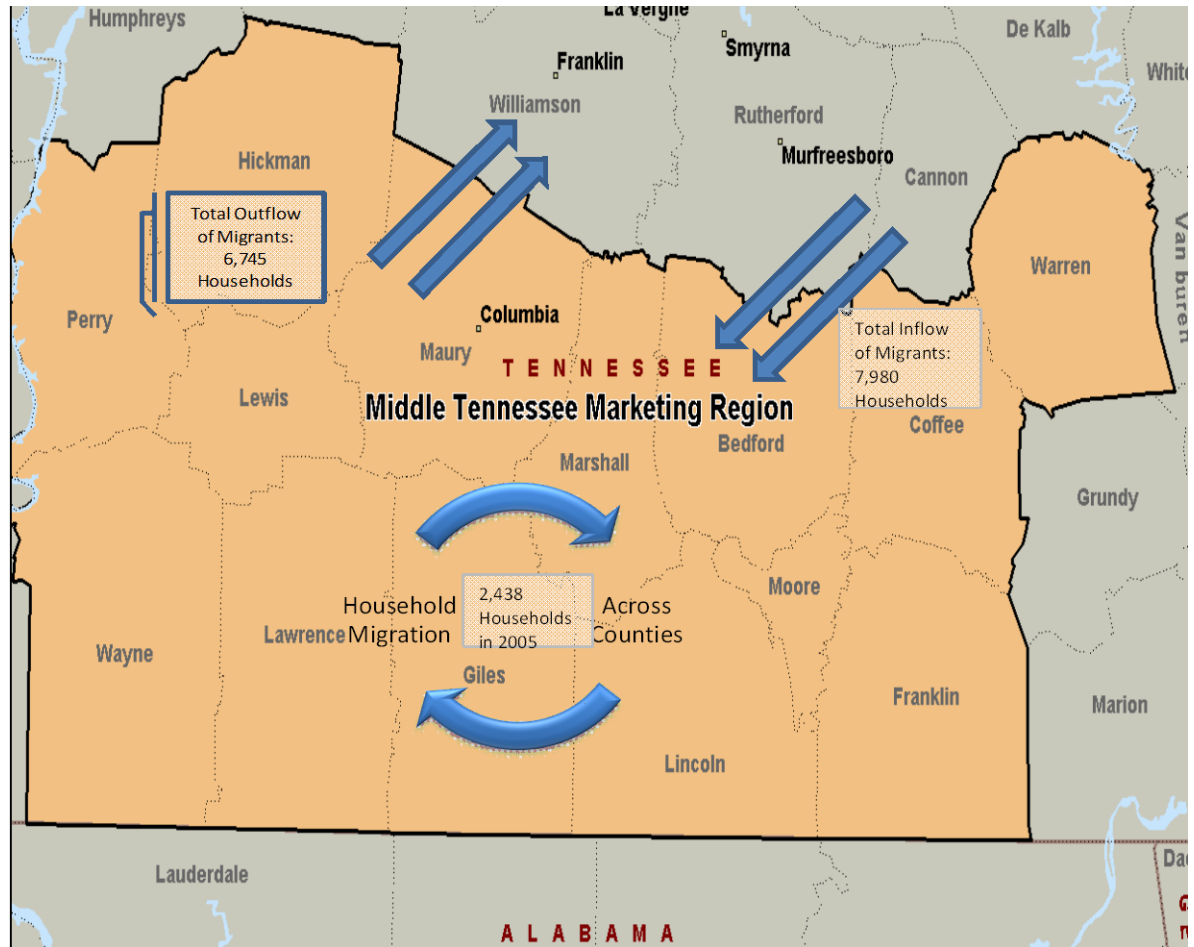
- In terms of establishment, government and nonprofits have the largest share as well as establishments employing fewer than 10 people
- The region also has the largest share of employment of local large establishments (500+)

Regional Economic Vitality and Autonomy
2004-2006 Averages (Percent)

Establishments	Region	TN	US	Nashville MSA	Huntsville MSA
Government & Nonprofit	10.9%	9.3%	7.5%	7.8%	8.5%
Branch Operation	5.7%	7.7%	5.5%	8.4%	8.4%
Local Businesses	83.4%	83.0%	87.0%	83.8%	83.2%
By Employment Size					
Start-up (1-9)	88.9%	87.0%	87.9%	87.2%	87.0%
Small (10-99)	10.5%	12.3%	11.4%	12.0%	12.3%
Medium (100-499)	0.5%	0.7%	0.7%	0.8%	0.6%
Large (500+)	0.1%	0.1%	0.1%	0.1%	0.1%
Jobs					
Government & Nonprofit	15.3%	14.4%	16.2%	15.5%	27.2%
Branch Operation	27.4%	27.4%	20.9%	26.9%	27.5%
Local Businesses	57.2%	58.2%	62.8%	57.6%	45.3%
By Employment Size					
Start-up (1-9)	33.8%	29.7%	30.8%	29.6%	31.6%
Small (10-99)	35.0%	38.1%	37.9%	38.6%	40.2%
Medium (100-499)	12.5%	16.0%	16.4%	17.5%	15.2%
Large (500+)	18.7%	16.2%	14.8%	14.3%	13.0%

III. Regional Socioeconomic Dynamics: Population and Workforce Dynamics

•In 2005-2006, a total of 2,438 households changed residency from one county to another in the region



Source: IRS County-to-County Migration & BERC Estimates

III. Regional Socioeconomic Dynamics: Population and Workforce Dynamics

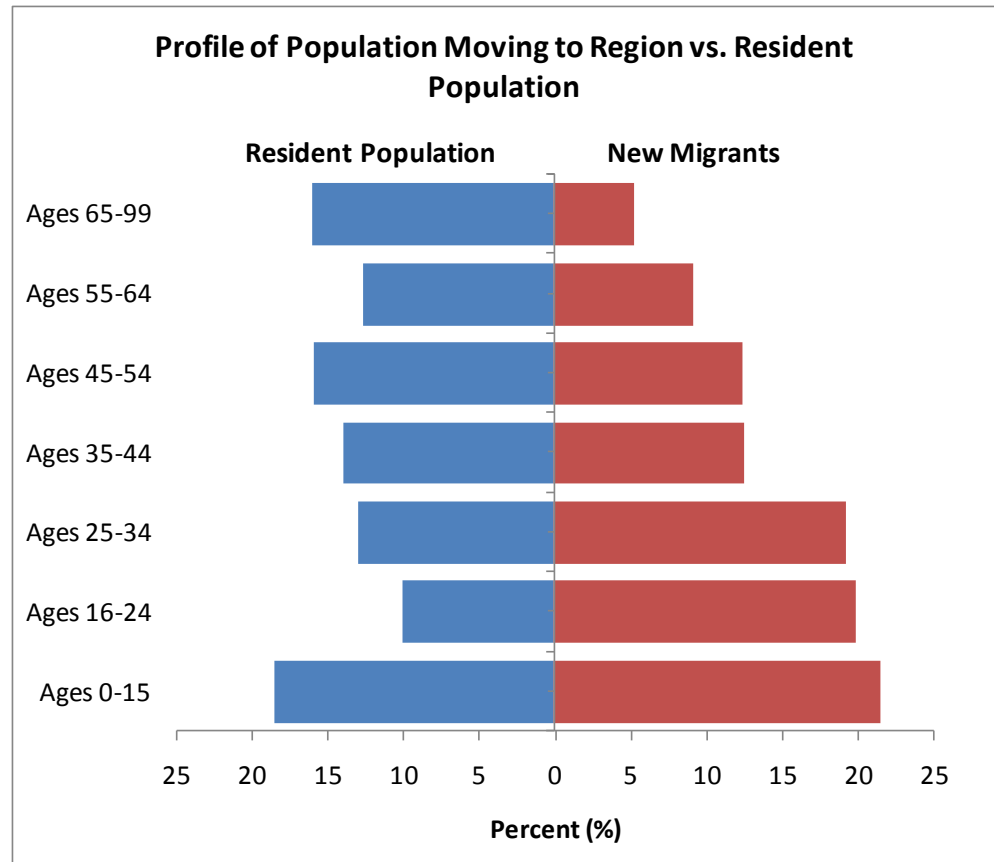
•In 2005-2006, net migration (defined as Inflows-Outflows) to the region was 1,235 households, Maury County representing more than 50 percent

Net Migration (Inflows-Outflows)

<u>Geography</u>	<u>Number of Households</u>
Region	1235
Counties	
<i>Bedford</i>	191
<i>Coffee</i>	222
<i>Franklin</i>	63
<i>Giles</i>	18
<i>Hickman</i>	10
<i>Lawrence</i>	-73
<i>Lewis</i>	39
<i>Lincoln</i>	80
<i>Marshall</i>	122
<i>Maury</i>	551
<i>Moore</i>	-8
<i>Perry</i>	0
<i>Warren</i>	14
<i>Wayne</i>	6

III. Regional Socioeconomic Dynamics: Population and Workforce Dynamics

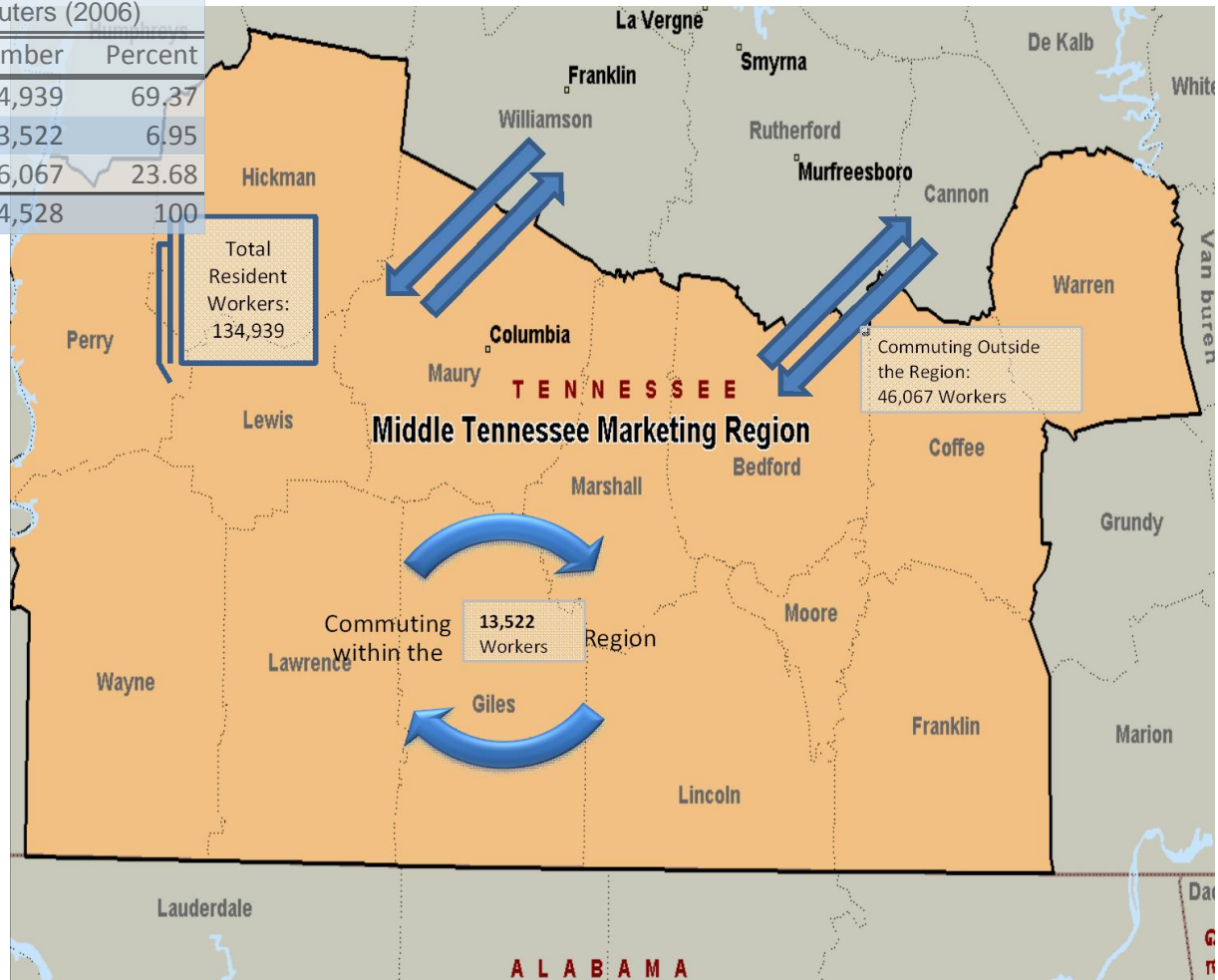
• Compared to the resident population (non-movers) in 2006, new migrants are relatively young



III. Regional Socioeconomic Dynamics: Population and Workforce Dynamics

One-Third of Workers are Commuters (2006)		
Type of Workers	Number	Percent
Resident Workers	134,939	69.37
Commuting within the region	13,522	6.95
Commuting outside the region	46,067	23.68
Total	194,528	100

COMMUTERS



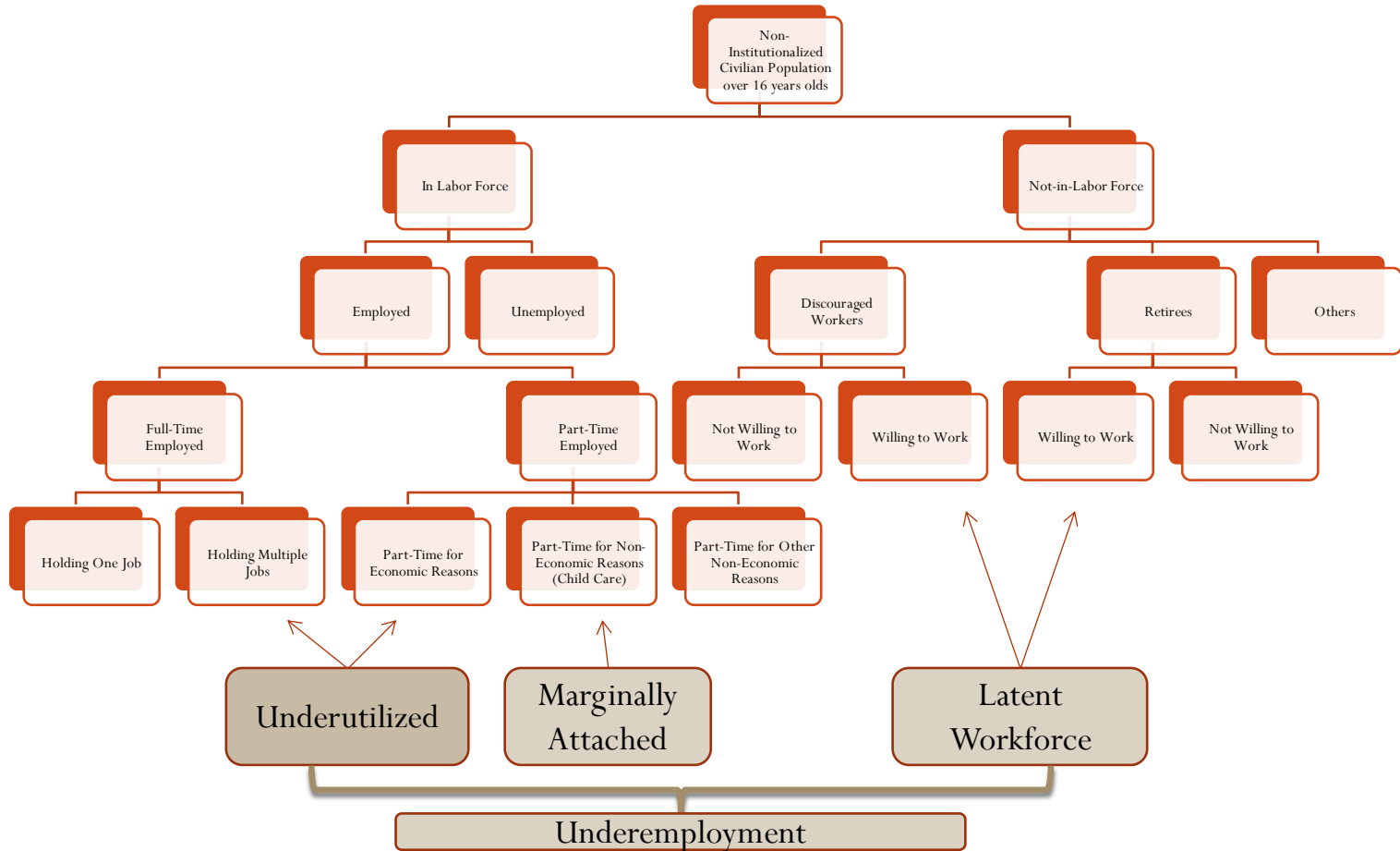
Source: American Community Survey (%5 PUMS) & BERC Estimates

III. Regional Socioeconomic Dynamics: Workforce Dynamics

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- Workforce availability
- Aging workforce
- Workforce education

III. Regional Socioeconomic Dynamics: Concept of Underemployment



III. Regional Socioeconomic Dynamics: Available Workforce

- Available labor force: unemployed + underemployed
- More than 16 percent (34,200+) of labor force

Available Labor Pool in Middle Tennessee Marketing Region (MTM): Employment, Unemployment, and Underemployment**

Counties	Labor Force	Employed	Unemployed	Underemployed	Unemployment Rate	Underemployment Rate
Bedford	22,114	20,970	1,144	2,099	5.2	9.49
Coffee	25,478	24,086	1,392	3,349	5.5	13.15
Franklin	20,087	18,942	1,145	1,088	5.7	5.42
Giles	13,471	12,513	958	1,303	7.1	9.67
Hickman	10,415	9,860	555	0	5.3	0.00
Lawrence	16,899	14,990	1,909	902	11.3	5.34
Lewis	5,244	4,869	375	178	7.2	3.40
Lincoln	17,047	16,331	716	1,346	4.2	7.90
Marshall	12,649	11,854	795	1,729	6.3	13.67
Mauzy	36,422	34,451	1,971	5,920	5.4	16.25
Moore	3,125	2,978	147	20	4.7	0.64
Perry	3,350	3,131	219	86	6.5	2.58
Warren	18,031	16,405	1,626	1,955	9	10.84
Wayne	6,539	5,857	682	599	10.4	9.16
MTM Region	210,871	197,237	13,634	20,575	6.47	9.76

BERC and Current Population Survey. Statewide underemployment calculations are from October 2007

**Imputed from state level indicators using Ordinary Least Square (OLS) regression analysis (see appendix for technical details)

***All indicators for counties are for 2006

III. Regional Socioeconomic Dynamics: Available Workforce

- These estimates of underemployment, however, are very conservative given the fact survey-based estimates of underemployment in neighboring AL counties put underemployment over 20 percent
- For example, a survey-based study done in 2005 by University of Alabama puts underemployment
 - 19.0 percent in Lauderdale County, AL
 - 27.3 percent in Limestone County, AL
 - 27.1 percent in Madison County, AL
 - 17.5 percent in Jackson County, AL

III. Regional Socioeconomic Dynamics: Aging Workforce

- MTM Region has significant number of available workforce as indicated by unemployment and underemployment numbers.
- However, demand for skilled workforce is likely to increase significantly over the years as the retirement age population (ages 65-99) represents significant share of employment in certain occupations.
- The following table provides a detailed view of employment by occupation and age cohort in the MTM Region.

III. Regional Socioeconomic Dynamics: Aging Workforce

•Demand for skilled labor is likely to increase in the near future

•Ages 65-99 have a significant share in the following occupations: scientists and technicians, legal services, entertainment, protective service workers

Employment by Occupation and Age Cohorts (%) (Region-2006)

	Between 16 and 24	Between 25 and 34	Between 35 and 44	Between 45 and 54	Between 55 and 64	Between 65 and 99
Managerial Positions	4.49	17.21	27.57	28.02	17.44	5.27
Business Services Positions	5.79	20.36	27.06	29.59	17.19	0.00
Financial Services Positions	12.22	12.18	33.33	24.48	14.38	3.41
Computer Programmers and Database Administrators	0.00	19.31	46.04	15.44	19.22	0.00
Engineering	7.44	28.47	17.99	27.58	12.42	6.10
Scientists and Technicians	0.00	12.18	9.89	28.94	31.04	17.95
Community Services	5.94	17.11	42.39	17.79	11.20	5.57
Legal Services Occupations	0.00	17.77	27.55	4.39	38.42	11.87
Education	8.54	17.82	24.16	25.67	17.89	5.92
Entertainment	5.34	11.46	25.97	16.02	14.13	27.09
Medical	5.53	25.19	31.40	25.25	11.59	1.03
Health Services	24.68	20.15	19.83	24.56	8.24	2.54
Protective Service Workers	13.53	18.73	12.00	24.26	12.22	19.24
Eating and Drinking	48.97	19.91	9.50	10.42	8.63	2.56
Cleaning Services	15.50	14.46	24.06	18.51	18.63	8.83
Personal Services	16.54	20.32	25.02	18.23	11.45	8.44
Sales	19.88	20.35	14.37	19.83	19.02	6.56
Office Workers	14.27	22.47	18.32	20.72	16.19	8.03
Farming, Fishing and Forestry	32.24	17.57	20.85	8.33	21.01	0.00
Construction	16.53	32.35	19.19	20.24	10.96	0.73
Extraction (Drilling)	0.00	92.75	0.00	0.00	0.00	7.25
Maintenance and Repair	11.20	19.27	18.30	33.07	14.79	3.37
Production Workers	9.31	24.96	19.61	23.56	17.10	5.47
Transportation	13.37	19.05	27.46	20.57	12.13	7.41

Source: American Community Survey & BERC Estimates

III. Regional Socioeconomic Dynamics: Workforce Education

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“We would like to bring high-paying high-tech jobs to the region.”

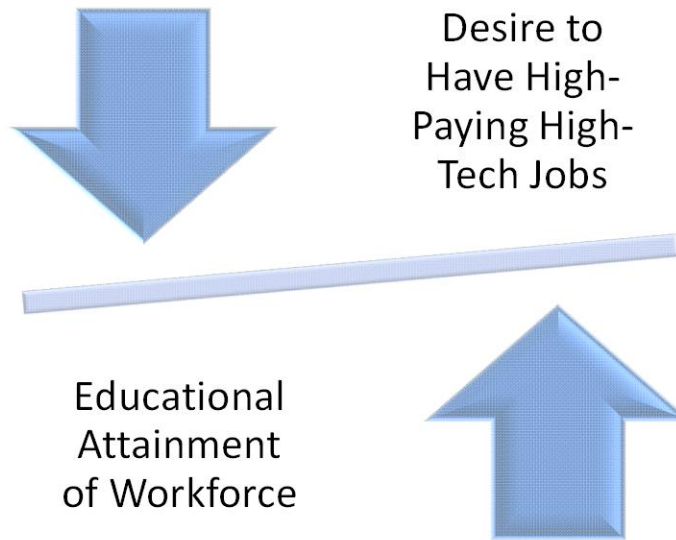
Local leaders

III. Regional Socioeconomic Dynamics: Workforce Education

Here is the dilemma

- The less desirable option is to recruit people from out of the MTM Region

Region's Dilemma



III. Regional Socioeconomic Dynamics: Workforce Education

A quick comparison: large gap in postsecondary education categories

Educational Attainment: Then and Now (25 years and over)

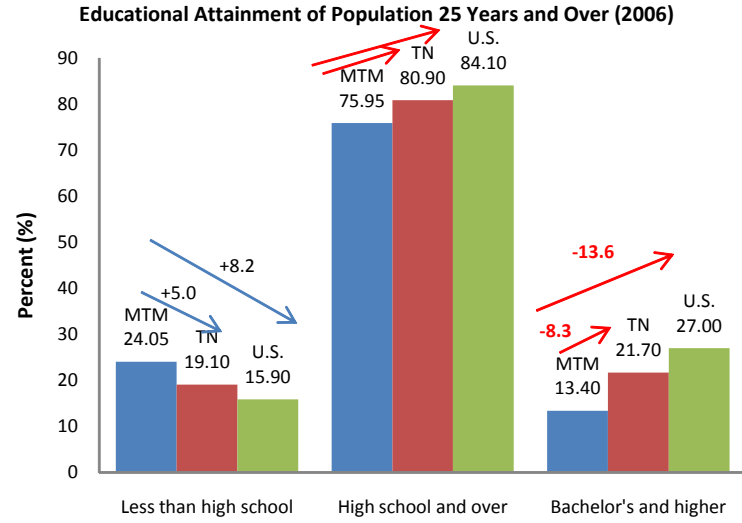
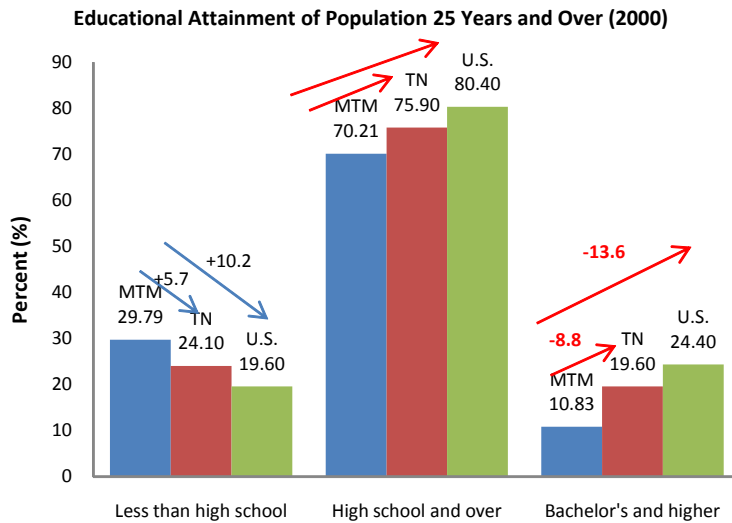
Educational Attainment	2000			2006		
	MTM	TN	U.S.	MTM	TN	U.S.
Less than high school	29.79	24.10	19.60	24.05	19.10	15.90
High school graduate (includes equivalency)	38.21	31.60	28.63	40.68	34.40	30.20
Some college, no degree	16.94	20.00	21.05	16.31	19.20	19.50
Associate degree	4.23	4.70	6.32	5.56	5.70	7.40
Bachelor's degree	6.78	12.80	15.54	8.62	14.10	17.10
Graduate or professional degree	4.04	6.80	8.86	4.78	7.50	9.90
Summary View						
Less than high school	29.79	24.10	19.60	24.05	19.10	15.90
High school and over	70.21	75.90	80.40	75.95	80.90	84.10
Bachelor's and higher	10.83	19.60	24.40	13.40	21.70	27.00

Source: Tabulated from Census 2000 and American Community Survey

MTM refers to Middle Tennessee Marketing Region

III. Regional Socioeconomic Dynamics: Workforce Education

A quick comparison: large gap in postsecondary education categories

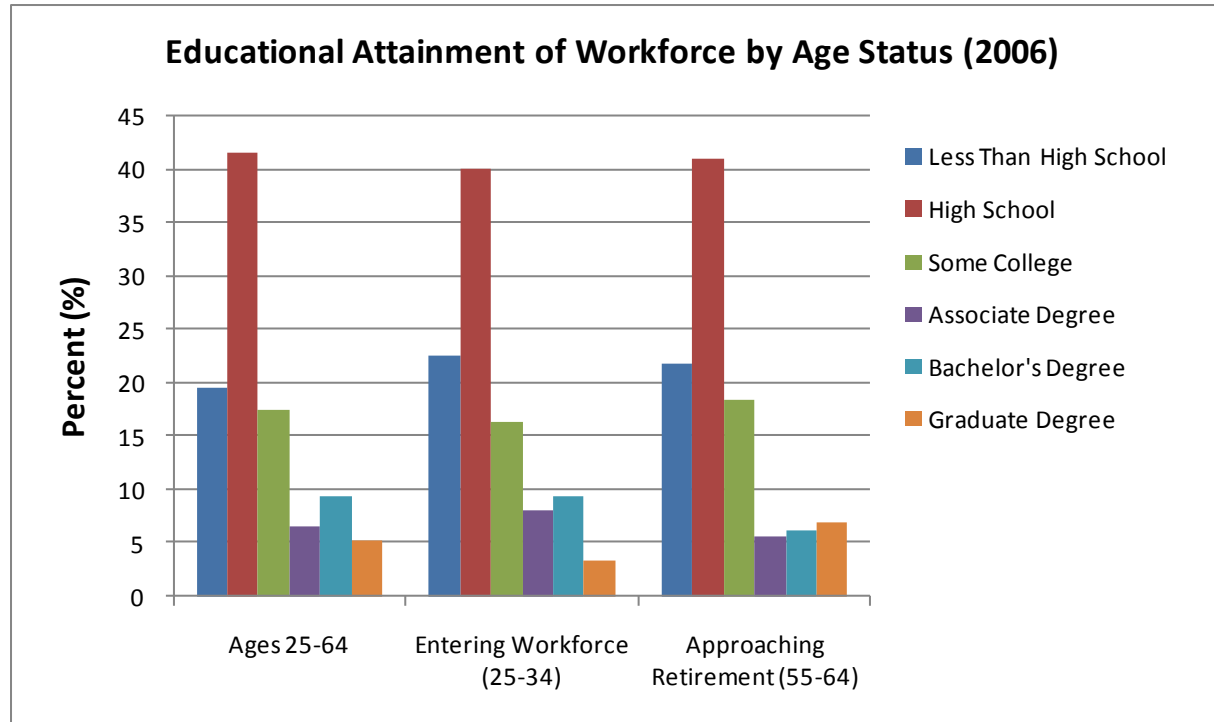


Source: American Community Survey, Census Bureau & BERC Estimates

III. Regional Socioeconomic Dynamics: Workforce Education

- From a different perspective, entering workforce is not better than those approaching retirement age in terms of “less than high school” category.
- In fact, workers approaching retirement age are significantly better off in “graduate degree” category.

Source:
American
Community
Survey & BERC
Estimates



III. Regional Socioeconomic Dynamics: Workforce Education

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WORKFORCE EDUCATION

- “Less than high school” category as educational requirement for occupations is no longer part of the official job description (www.bls.gov) for nearly all occupations
- Key to addressing “high-wage” issue is to develop policies to eliminate education gap in the region

III. Regional Socioeconomic Dynamics: Workforce Education

•This table requires close scrutiny by local leaders

Source: American Community Survey, BLS, & BERC Estimates

Educational Attainment by Occupation (%) (2006)

Occupations	Middle Tennessee Marketing Region					U.S. Average	Region-U.S
	Less Than High School	High School	Some College	Associate Degree	College and Above	College and Above	GAP in College & Above
Managerial Positions	6.07	34.48	19.99	2.89	36.58	60.00	-23.42
Business Services Positions	0.00	29.48	19.04	16.84	34.64	51.00	-16.36
Financial Services Positions	2.27	15.20	24.76	12.46	45.32	63.00	-17.68
Computer Programmers and Database Administrators	0.00	22.21	15.26	15.08	47.45	66.00	-18.55
Engineering	1.12	14.45	29.52	8.02	46.89	60.00	-13.11
Scientists and Technicians	0.00	41.76	17.49	7.51	33.24	79.00	-45.76
Community Services	12.42	5.64	6.41	7.86	67.67	69.00	-1.33
Legal Services Occupations	0.00	27.63	16.33	16.33	39.71	65.00	-25.29
Education	4.72	18.64	10.19	5.94	60.52	77.00	-16.48
Entertainment	3.64	25.44	13.93	13.98	43.01	54.00	-10.99
Medical	0.00	10.52	14.74	40.77	33.97	58.00	-24.03
Health Services	20.32	35.34	36.14	4.26	3.94	15.00	-11.06
Protective Service Workers	7.02	53.69	22.84	3.49	12.95	23.00	-10.05
Eating and Drinking	39.33	42.69	14.24	2.68	1.06	9.00	-7.94
Cleaning Services	37.90	46.02	10.10	0.00	5.98	8.00	-2.02
Personal Services	20.05	42.31	26.55	7.06	4.03	21.00	-16.97
Sales	16.77	42.43	24.02	4.52	12.26	37.00	-24.74
Office Workers	6.87	39.78	31.75	12.43	9.18	18.00	-8.82
Farming, Fishing and Forestry	59.00	22.62	18.38	0.00	0.00	7.00	-7.00
Construction	31.33	56.82	9.03	0.99	1.82	4.00	-2.18
Extraction (Drilling)	51.21	48.79	0.00	0.00	0.00	3.00	-3.00
Maintenance and Repair	16.57	50.80	23.10	6.77	2.76	9.00	-6.24
Production Workers	23.68	54.98	15.21	2.50	3.63	7.00	-3.37
Transportation	30.88	55.16	11.55	1.18	1.22	12.00	-10.78

Presentation Outline

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- I. Regional Overview
- II. Comparative Economic and Demographic Dynamics
- III. Regional Socio-Economic Dynamics
- IV. *Regional Strengths and Weaknesses (Highlights from Business Surveys and Interviews)***
- V. Industry Clusters: An Overview
- VI. Target Clusters
- VII. Recommendations and Conclusion

IV. MTM Business Survey: S.W.O.T. Analysis

51

- For Local Businesses
 - ▣ Regional strengths and weaknesses
 - (Strengths) Logistics/Location, Location, Location...
 - (Weaknesses) Labor, Labor, Labor...
 - ▣ Global opportunities and threats
 - (Opportunities) Export, Location...
 - (Threats) Fuel Cost, Overseas Competition...

IV. MTM Business Survey: S.W.O.T. Analysis

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- For Supplier Industries of Local Businesses
 - ▣ Regional strengths and weaknesses
 - (Strengths) Highway Access
 - (Weaknesses) Fewer Regional Resources
 - ▣ Global opportunities and threats
 - (Opportunities) Innovation
 - (Threats) Low Cost Labor Overseas
- For Customer Industries of Local Businesses
 - ▣ Regional strengths and weaknesses
 - (Strengths) Consistent Demand
 - (Weaknesses) Regulations/Compliance Cost
 - ▣ Global opportunities and threats
 - (Opportunities) Globalization/Rationalization
 - (Threats) Alternative Energy/Steel Supply

IV. MTM Business Survey: S.W.O.T Analysis

STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS: S.W.O.T ANALYSIS FOR REGIONAL CLUSTERS, THEIR SUPPLIER AND CUSTOMER INDUSTRIES

S.W.O.T FOR REGIONAL CLUSTERS

REGIONAL STRENGTHS

- I. Geographic Location/ Logistics
- II. Motivated and Stable Existing Workforce
- III. Technology/ Automation
- IV. Low Cost labor
- V. Highest Quality Business Environment

REGIONAL WEAKNESSES

- I. Labor Pool (Basic and Soft Skill)
- II. Lack of Skilled Workforce
- III. Economy/ Energy-Material Cost
- IV. High Cost of Government Compliance
- V. Loss of Demand

GLOBAL THREATS

- I. Increased Fuel/ Transportation Cost
- II. Cheap Labor in Other Countries/ China
- III. Overseas Competition
- IV. Economy/ Weak Dollar
- V. Loss of Jobs to Overseas

GLOBAL OPPORTUNITIES

- I. Economy/ Export Opportunities
- II. Location/ Local Transportation
- III. New/ Increased Customer Base
- IV. Technology/ License
- V. New Unique Products

S.W.O.T FOR SUPPLIER INDUSTRIES

Local Strengths

- I. Access to Highway/ Delivery Time
- II. Enlarged Training Programs
- III. Excellent Road Network
- IV. Proximity
- V. Labor Cost

Local Weaknesses

- I. Fewer Regional Resources
- II. Lack of Funding/ Projects
- III. Overseas Competition
- IV. Rising Raw Material Costs
- V. Uneven Demand

S.W.O.T FOR CUSTOMER INDUSTRIES

Local Strengths

- I. Consistent Demand
- II. Local Suppliers
- III. Location/ Infrastructure
- IV. Low Labor Cost
- V. Product Delivery/ Response Time

Local Weaknesses

- I. Regulations/ Compliance Cost
- II. Location/ Logistics
- III. Lack of Steel Supply
- IV. Lack of Projects
- V. Outdated Equipment

Global Threats

- I. Low Cost Labor
- II. Steel Supply
- III. Oil Prices
- IV. Less Compliance Cost
- V. Supplier Base

Global Opportunities

- I. Innovation
- II. Outsourcing Work
- III. R&D in the U.S.
- IV. Local Transport
- V. More Automotive Choosing

Global Threats

- I. Alternative Technology
- II. Steel Supply
- III. Low Labor Cost
- IV. Cheap Overseas Products
- V. Loss of Foreign Production

Global Opportunities

- I. Globalization/ Rationalization
- II. Improved Logistics
- III. Increasing Exports
- IV. Labor Base
- V. Partnering

IV. MTM Business Survey: Factor Conditions and Risk Factors

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- Corporate top factors for site selection
- Top local factors important for businesses
- Risk factors to competitive businesses and region

FACTOR CONDITIONS

IV. MTM Business Survey: Factor Conditions and Risk Factors

Local Factors Important for Businesses and Level of Local Preparedness

National Corporate Survey*			Local Business Survey**			Level of Local Readiness	
Top 15 Factors Important for Site Selection			Top 15 Factors Important for Businesses				
Factors	Score (%)***	Rank	Factors	Score (%)***	Rank	Score (%)****	Gap*****
Highway Accessibility	96.9	1	Workforce quality	96.7	1	22.2	-74.5
Labor Costs	92.3	2	Cost of transportation	96.6	2	38.4	-58.2
Energy Availability and Costs	89.0	3	Labor costs	93.3	3	66.6	-26.7
Availability of Skilled Labor	88.7	4	Utility costs	93.1	4	61.5	-31.6
Occupancy or Construction Costs	88.2	5	Healthcare	82.8	5	65.4	-17.4
Available Land	85.4	6	Higher education and other training institutions	80.0	6	40.7	-39.3
Corporate Tax Rate	83.8	7	Basic infrastructure (water, sewer, solid waste, fire, police)	76.7	7	70.3	-6.4
State & Local Incentives	83.4	8	Availability of capital	76.7	8	51.8	-24.9
Environmental Regulations	83.2	9	Proximity to suppliers	76.7	9	55.5	-21.2
Tax Exemptions	82.8	10	Property taxes	76.7	10	51.8	-24.9
Proximity to Major Markets	82.8	11	Transportation availability	76.6	11	55.5	-21.1
Availability of Advanced ICT Services	82.2	12	Broadband access	76.6	12	44.4	-32.2
Low Union Profile	80.6	13	K-12 school system	72.4	13	48.1	-24.3
Availability of Buildings	79.3	14	Proximity to customers	70.0	14	55.5	-14.5
Right-to-Work State	72.1	15	Support for economic development	66.7	15	55.5	-11.2

*The 22nd Annual Corporate Survey & the 4th Annual Consultants Survey (2007)

**BERC Local Business Survey (2008) for Target Industry Analysis

***Score indicates the sum of the percent of those saying "very important" and "important"

****Score indicates the sum of the percent of those saying "excellent" and "good"

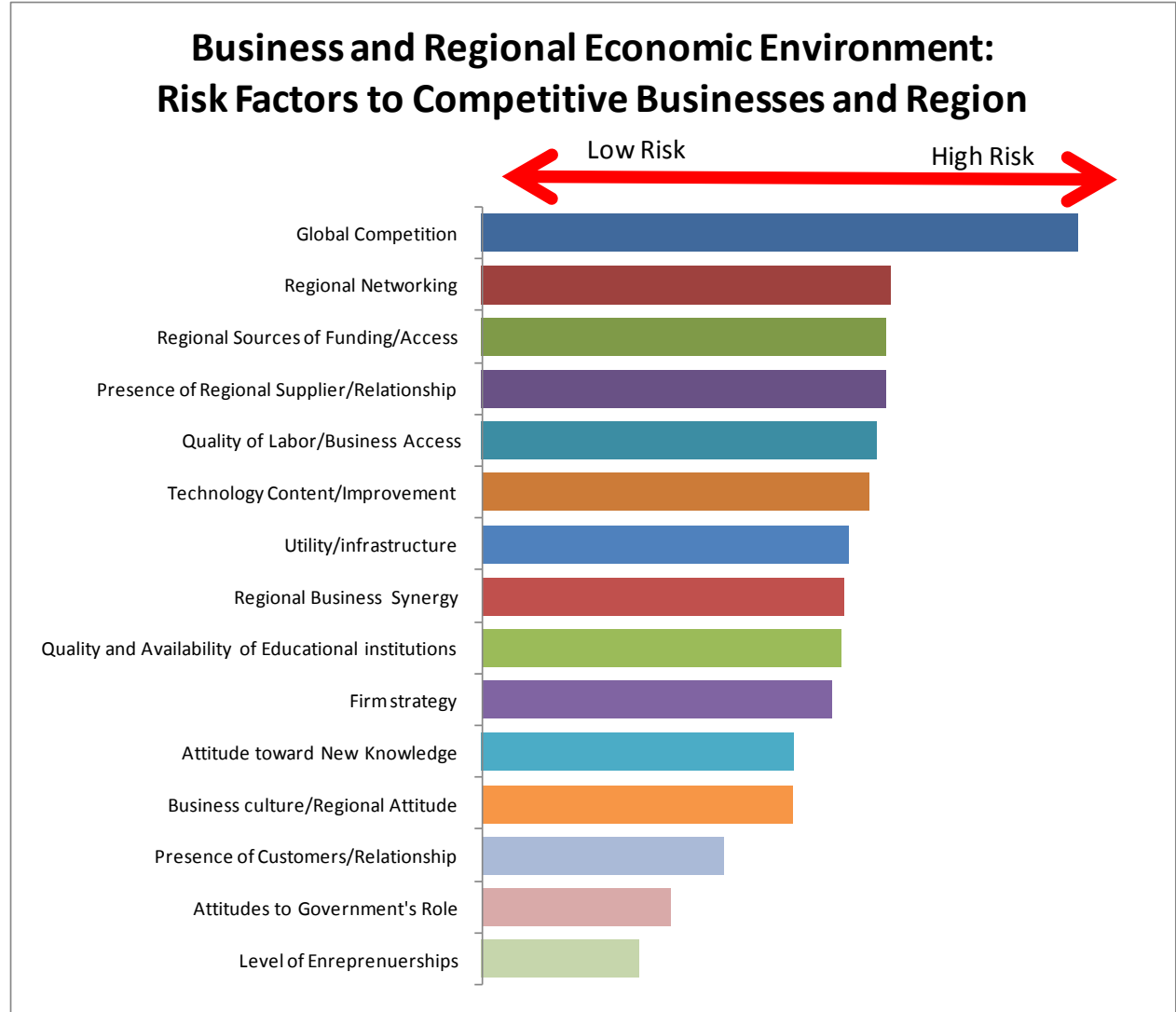
*****Gap is the difference between "local readiness in a given factor" and "importance of that given factor for businesses"

IV. MTM Business Survey: Factor Conditions and Risk Factors

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RISK FACTORS

•Risk factors refer to the firm specific and/or regional attitudes/factors affecting “healthy business development”



Presentation Outline

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- V. ***Industry Clusters: An Overview***
- VI. Target Clusters
- VII. Recommendations and Conclusion

V. Industry Clusters: Overview

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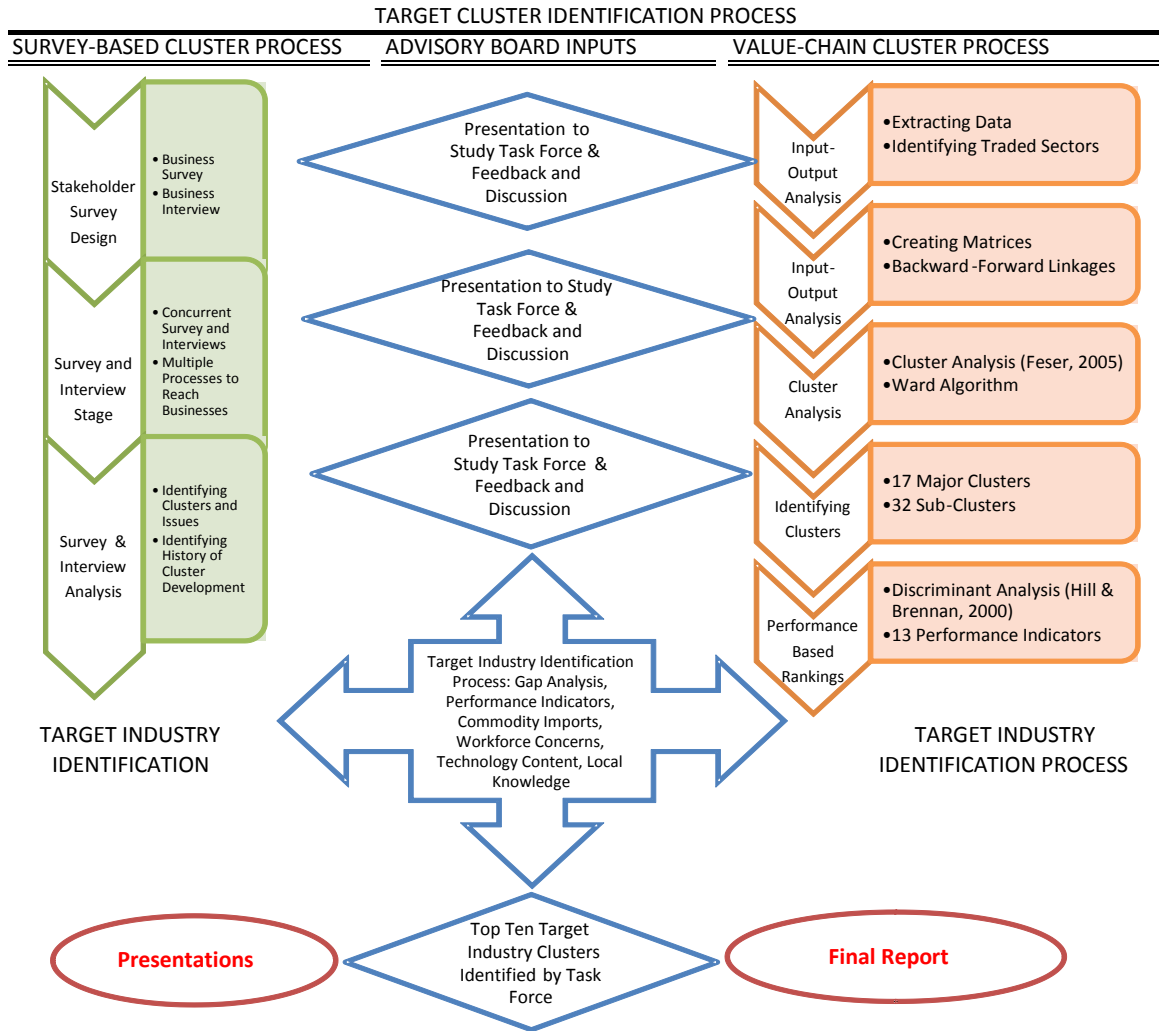
- Business survey and interview overview
- Cluster identification process

V. Industry Clusters: Overview (Surveys and Interviews)

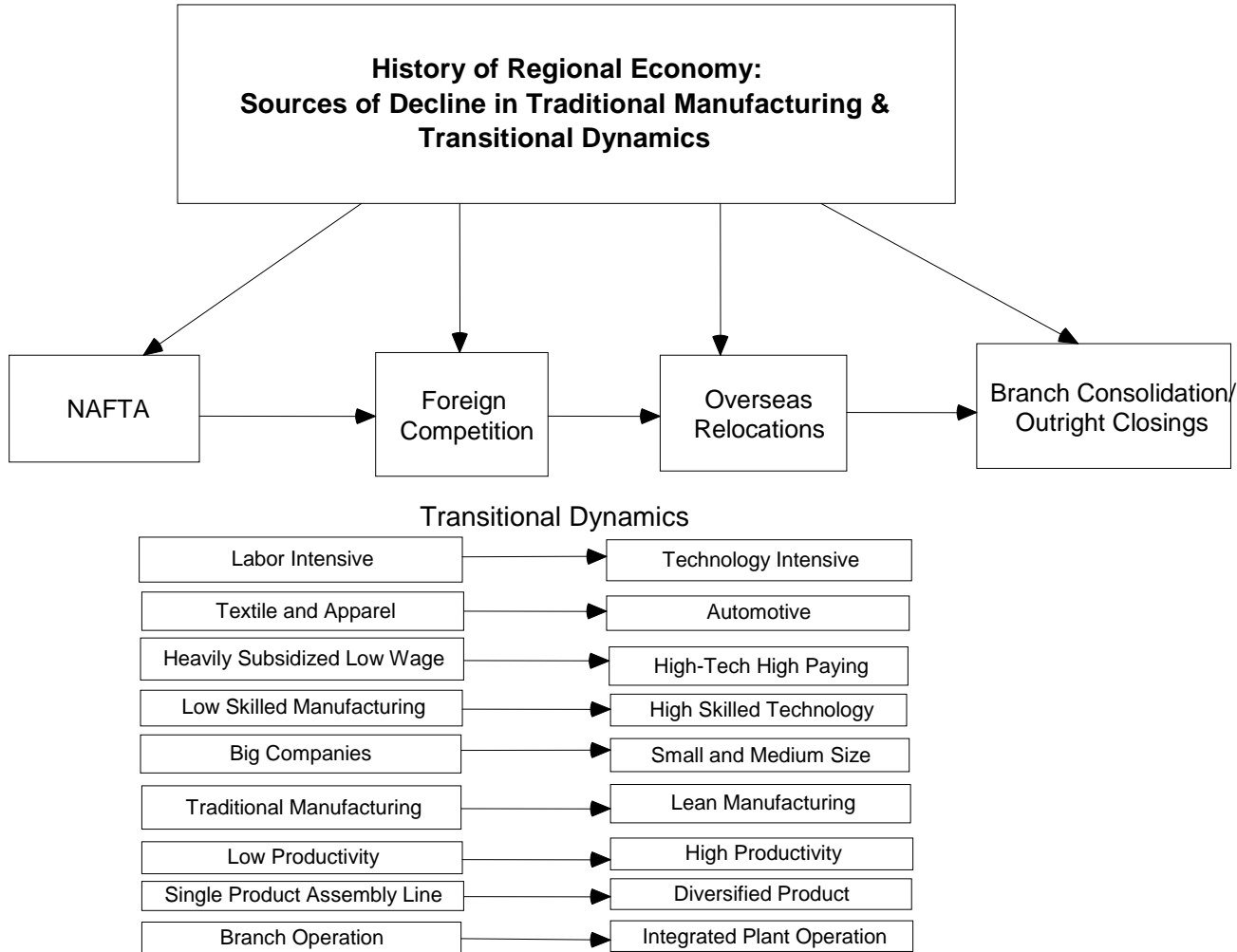
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- 30 surveys were returned
- 50 interviews were conducted
- Extensive secondary data analysis was done

V. Industry Clusters: Overview (Process)



V. Industry Clusters: Overview (Region is in Transition)



V. Industry Clusters: Overview (Region is in Transition)

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- Critical issue is to manage this transition in a way that
 - Strengthens existing businesses
 - Upgrades workforce skills
 - Addresses small business concerns
 - Upgrades aging infrastructure
 - To create employment and wealth in the region

V. Industry Clusters: Overview (Clusters)

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- A successful economic development strategy should focus on the existing industries
 - ▣ What are these industries?
 - ▣ How should we analyze them?

V. Industry Clusters: Overview (Clusters)

- One way to do that is to group them together using certain communalities
- Cluster concept refers to these communalities among industries
- There is no single way to address the cluster issue
- Some of the common ways are
 - Backward-forward linkages (value chain)
 - Basic (exporting)-non-basic (local)
 - Common labor pool
 - Common technology
 - Common commodity import
 - Performance-based driver industry
- This study utilizes several of these methods to form regional industry clusters and then identify the target clusters

V. Industry Clusters: Overview (Clusters)

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- Since this study's primary concern is to develop actionable policies, study team identified
 - ▣ broader industry clusters
 - ▣ aligned them with the national cluster templates
 - ▣ then identified critical issue regarding each cluster
- Some of these issues are
 - ▣ What are the gaps in existing clusters?
 - ▣ How are these clusters related to technology clusters?
 - ▣ What are the commodities these clusters import?
 - ▣ What are the major occupations employed by each cluster?

V. Industry Clusters: Overview (Clusters)

- The process of identifying clusters and selecting target clusters was lengthy, nearly 10 months
- Technical processes
 - Initial cluster solution (Feser, 2005)
 - Cleaning and creating sub-clusters to align with national cluster template developed by Feser (2005)
 - Identifying cluster gaps
 - Performing discriminant analysis to rank cluster by performance
 - Linking clusters to technology clusters
 - Identifying commodity imports by cluster
 - Using local input and knowledge to select the target clusters
- In addition, we used surveys to capture aspects of Michael Porter's approach (1990) to competitive cluster strategies (factor conditions, business strategy [risk factors], demand conditions and related and supporting industries)

V. Industry Clusters: Overview (Initial Cluster Rankings): Performance Based Cluster Rankings

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INITIAL CLUSTER RANKINGS

- Excluded clusters from the analysis
 - Purely local clusters such as retail trade
 - Federal, state and local governments
- Among 32 sub-clusters, several of them are called “enabling clusters,” which are critically important for a healthy business environment
 - 111 Management, Higher Education and Hospitals
 - 101 Hotels and Transportation Services
 - 131 Financial Services and Insurance
 - 61 Business Services
 - 132 Information Services

Source: IMPLANpro & BERC Estimates

Cluster	Cluster name	Rank	Import 2006 (million \$)	Export 2006 (million\$)
111	Management, Higher Education and Hospitals	1	378	863
13	Motor Vehicles	2	725	6,483
56	Rubber Products	3	391	765
51	Chemical-Based Products	4	52	83
21	Glass Products	5	104	199
92	Packaged Food Products	6	299	708
101	Hotels and Transportation Services	7	330	74
54	Petroleum and Gas	8	519	587
52	Mining	9	23	47
72	Optical Equipment and Instruments	10	146	396
151	Breweries and Distilleries	11	319	821
31	Concrete, Brick Building Products	12	42	84
91	Feed Products	13	159	114
131	Financial Services and Insurance	14	198	136
61	Business Services	15	310	207
132	Information Services	16	117	98
53	Paper	17	273	389
141	Wood Building Products and Processing	18	208	284
171	Farming	19	42	151
161	Printing and Publishing	20	69	97
11	Computer and Electronic Equipment	21	95	109
32	Nondurable Industry Machinery	22	751	1,097
22	Machine Tools	23	151	290
112	Construction	24	73	91
41	Metalworking and Fabricated Metal Products	25	103	188
55	Plastics Products	26	234	281
71	Leather Products	27	33	59
81	Aluminum and Copper Products	28	230	214
121	Arts and Media	29	25	3
73	Textiles and Apparel	30	130	111
74	Wood Product and Furniture	31	6	2
12	Construction Machinery and Distribution Equipment	32	81	59

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VI. Target Clusters

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- Selection Process & Inter-Cluster Linkages
- Top 10 Clusters by Selected Performance Indicators
- Target Clusters
- Target Cluster Status

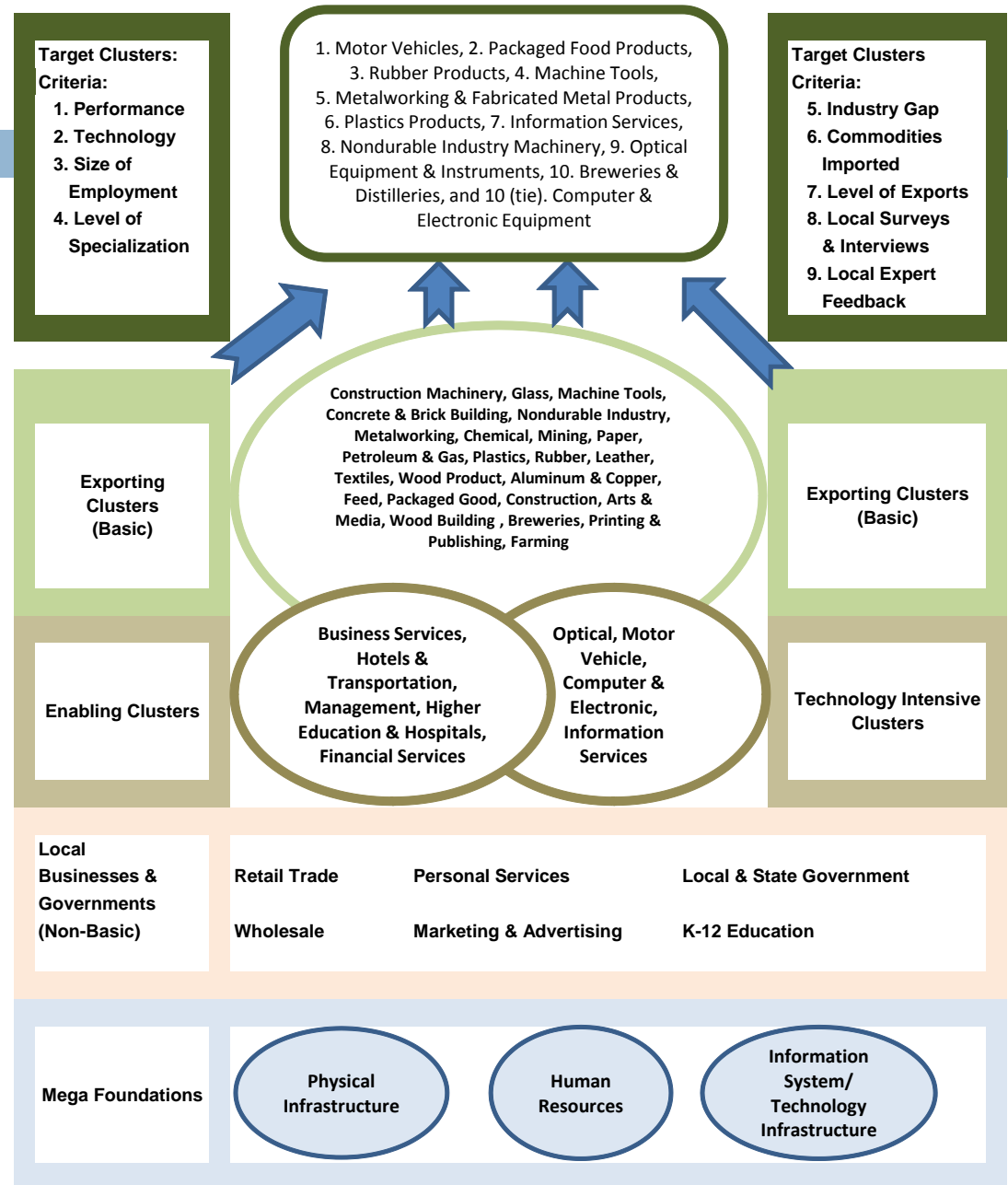
VI. Target Clusters: The Selection Process & Inter-Cluster Linkages

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TARGET CLUSTERS

- Selection of target clusters include multiple stages
- In addition to performance indicators, the factors that critically strengthen supply-chain of existing clusters are considered
- Enabling clusters are critical for a healthy business environment
 - They are very much demand-driven

TARGET INDUSTRY SELECTION PROCESS AND INTER-CLUSTER LINKAGES



VI. Target Clusters

TARGET CLUSTERS AND TOP 10 CLUSTERS FOR EACH PERFORMANCE INDICATOR

Cluster Indicators: Employment		Employment		Compensation		Value Added		Productivity		Exports		Imports		Competitiveness		Linkage		Tech		Performance
Cluster	Cluster name	2006	LQ2006	C2006	VA2006	PRO2006	E2006(million \$)	2006 (million \$)	Industry Mix (IM)	Regional Shift (RS)	Buy	Sell	Share	Rank						
11	Computer and Electronic Equipment	800	1.48	\$45,456	\$49,455	\$207,664	109	95	-0.12	0.13	0.60	0.80	97.69	21						
12	Construction Machinery and Distribution Equipment	316	1.02	\$54,455	\$89,292	\$403,208	59	81	0.14	-1.04	0.35	0.17	55.89	32						
13	Motor Vehicles	10,506	7.69	\$89,430	\$135,460	\$870,985	6,483	725	-0.15	-0.03	32.08	15.55	46.05	2						
21	Glass Products	1,457	5.10	\$38,958	\$77,593	\$199,903	199	104	-0.18	0.45	1.40	1.63	0.00	5						
22	Machine Tools	2,115	2.05	\$48,035	\$90,972	\$187,103	290	151	-0.04	-0.28	1.00	1.65	6.99	23						
31	Concrete, Brick Building Products	411	1.18	\$42,019	\$85,570	\$228,431	84	42	0.04	0.13	0.32	0.01	0.00	12						
32	Nondurable Industry Machinery	4,331	4.94	\$47,688	\$68,107	\$284,306	1,097	751	-0.25	-0.20	3.50	1.02	3.88	22						
41	Metalworking and Fabricated Metal Products	991	1.36	\$38,281	\$63,004	\$190,537	188	103	-0.04	-0.06	0.44	0.11	21.87	25						
51	Chemical-Based Products	271	1.91	\$87,714	\$172,923	\$437,097	83	52	-0.16	0.49	0.38	0.67	100.00	4						
52	Mining	378	0.96	\$54,076	\$112,569	\$198,074	47	23	0.09	0.58	0.17	0.45	0.00	9						
53	Paper	1,520	3.02	\$57,299	\$85,804	\$306,267	389	273	-0.07	-0.21	1.19	1.20	0.00	17						
54	Petroleum and Gas	1,601	0.87	\$48,126	\$139,357	\$582,130	587	519	0.06	0.31	3.59	3.67	0.02	8						
55	Plastics Products	1,594	2.30	\$45,390	\$95,930	\$292,389	281	234	-0.11	-0.30	1.51	2.85	5.32	26						
56	Rubber Products	3,433	8.23	\$52,085	\$85,644	\$229,201	765	391	-0.16	0.29	1.94	0.20	0.00	3						
61	Business Services	15,122	0.58	\$32,015	\$56,627	\$91,546	207	310	0.05	-0.32	4.09	15.75	9.88	15						
71	Leather Products	424	3.33	\$47,491	\$58,097	\$180,018	59	33	-0.27	-0.24	0.36	0.14	0.00	27						
72	Optical Equipment and Instruments	2,511	7.98	\$42,775	\$88,791	\$180,629	396	146	-0.11	0.06	1.61	0.24	6.17	10						
73	Textiles and Apparel	1,239	2.32	\$29,565	\$52,351	\$200,420	111	130	-0.32	-0.15	1.00	0.45	0.00	30						
74	Wood Product and Furniture	126	0.71	\$39,475	\$84,759	\$158,376	2	6	-0.15	-0.49	0.06	0.01	0.00	31						
81	Aluminum and Copper Products	1,138	2.41	\$57,658	\$80,632	\$354,190	214	230	-0.03	-0.22	1.53	0.30	0.00	28						
91	Feed Products	10,517	4.04	\$2,825	\$9,783	\$37,832	114	159	-0.07	0.23	2.57	5.16	0.00	13						
92	Packaged Food Products	2,811	2.68	\$40,331	\$69,443	\$326,121	708	299	-0.14	0.04	8.01	1.83	0.00	6						
101	Hotels and Transportation Services	12,209	0.61	\$18,411	\$67,618	\$117,816	74	330	0.11	0.24	5.37	15.10	0.00	7						
111	Management, Higher Education and Hospitals	14,904	1.43	\$36,541	\$47,477	\$90,981	863	378	0.34	2.41	5.08	3.82	73.88	1						
112	Construction	1,939	1.08	\$20,978	\$41,858	\$119,940	91	73	-0.15	0.30	0.86	1.71	14.04	24						
121	Arts and Media	488	0.17	\$27,483	\$39,460	\$117,929	3	25	0.01	-0.56	0.24	0.63	0.00	29						
131	Financial Services and Insurance	6,489	0.58	\$33,092	\$84,713	\$140,595	136	198	-0.01	0.32	3.10	6.39	0.00	14						
132	Information Services	2,533	0.41	\$46,336	\$87,762	\$168,069	98	117	-0.20	0.14	1.64	3.21	53.49	16						
141	Wood Building Products and Processing	2,640	2.14	\$25,809	\$49,682	\$185,440	284	208	0.08	-0.11	2.84	2.70	0.00	18						
151	Breweries and Distilleries	891	2.43	\$68,741	\$401,954	\$908,002	821	319	0.03	-0.29	2.50	0.27	2.57	11						
161	Printing and Publishing	2,522	1.44	\$34,315	\$45,746	\$82,658	97	69	-0.09	0.28	0.45	1.42	0.00	20						
171	Farming	9,164	5.19	\$3,592	\$15,562	\$23,346	151	42	-0.23	0.00	0.54	0.83	0.00	19						

Legend: Green Shade: Target Clusters Red Font: Top 10 Clusters for Each Performance Indicator

Source: IMPLANpro & BERG Estimates

VI. Target Clusters

Top 10 Clusters for Targeting Purpose & Potential Clusters

Targeted Clusters (Cluster Number)	Original Ranking Based on Performance	New Ranking Based on Local Feedback	Targeted Clusters and Technology Cluster Connections											
			Aerospace	Architectural and Engineering Services	Chemicals	Computer and Electronic Equipment	Engine Equipment	Information Services	Medical Instruments and Optics	Motor Vehicles	Pharmaceuticals	Precision instruments	Technical and Research Services	Wiring Devices and Switches
Motor vehicles (13)	2	1	Yes				Yes			Yes				
Rubber Products (56)	3	3												
Packaged Food Products (92)	6	2												
Optical Equipment and Instruments (72)	10	9							Yes					
Breweries and Distilleries (151)	11	10 (Tie)								Yes				
Information Services (132)	16	7		Yes				Yes				Yes		
Computer and Electronic Equipment (11)	21	10 (Tie)				Yes			Yes		Yes			
Nondurable Industry Machinery (32)	22	8					Yes				Yes		Yes	
Machine Tools (22)	23	4					Yes							
Metalworking & Fab. Metal Products (41)	25	5												
Plastics Products (55)	26	6			Yes					Yes				

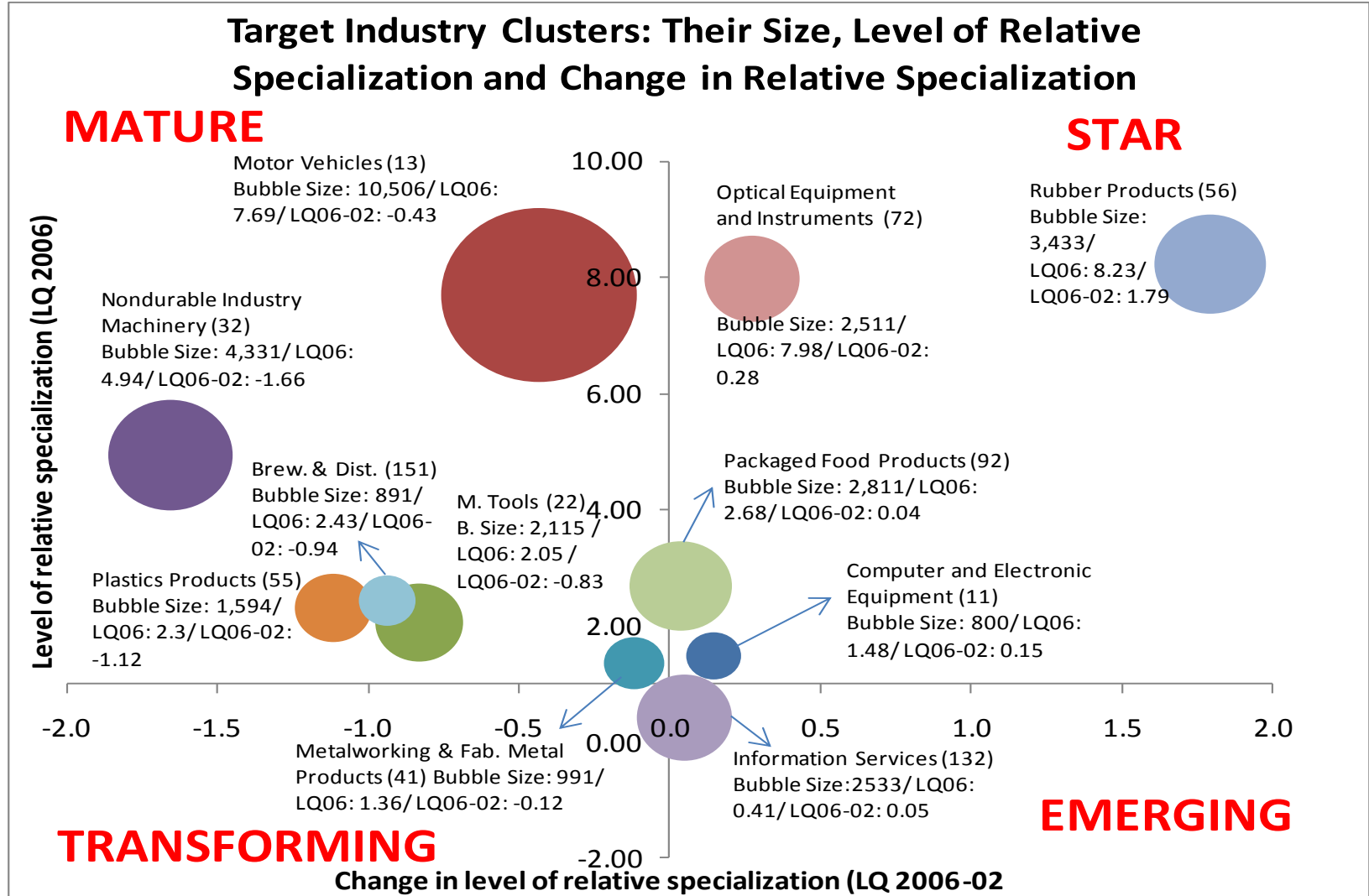
Potential/Emerging Clusters: Clusters in this group has close connections with each other.

- Aerospace and Defense** These three research intensive clusters are closely related with each other and other clusters in the region. These clusters require strong enabling clusters in the region, such as, business and financial services and management and higher education. One critical aspect of these clusters is that the region should have strong research centers supported by industry, higher education and government. University of Alabama at Huntsville, UT Space Institute in Coffee County, MTSU in Rutherford County have already established programs that could be expanded for this purpose.
- R&D Based High Tech**
- Alternative Energy/Biofuel**

Note 1: New cluster ranking is based on the responses from 10 counties, Middle Tennessee Industrial Board Association (MTIDA) and Business and Economic Research Center at MTSU.

Note 2: Rankings primarily based on cluster performance indicators, cluster gap analysis, cluster-technology connections, cluster imports, and local knowledge.

VI. Target Clusters



Presentation Outline

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VII. What is Next? Study Recommendations

- I. Cluster Specific Recommendations
- II. What is Next? Recommendations for Region
 - 1. Regional Level Marketing
 - 2. Regional Level Workforce Analysis
 - 3. In-Depth Cluster Needs Assessment
 - 4. Emerging Clusters/Areas: High-Tech
 - 5. Emerging Clusters/Areas: Tourism
 - 6. Specific Policy Priorities

VII. What is Next? I. Cluster Specific Recommendations

- Based on communalities of commodities imported and occupations employed, we recommend the following four aggregated clusters to stimulate economic growth:

- Motor Vehicle and Associated Products Cluster
 - Motor Vehicle Cluster
 - Rubber Products Cluster
 - Plastics Products Cluster
- Advanced Metal Manufacturing Cluster
 - Machine Tools Cluster
 - Nondurable Industry Machinery
 - Metalworking and Fabricated Metal Products
- Information Technology and Precision Instrument Manufacturing Cluster
 - Optical Equipment and Instruments Cluster
 - Computer and Electronic Equipment Cluster
 - Information Services
- Agribusiness Cluster
 - Breweries and Distilleries
 - Packaged Goods Products

VII. What is Next? I. Cluster Specific Recommendations

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- Aggregate details for each group of clusters
 - Motor Vehicle and Associated Products Cluster
 - Motor Vehicle Cluster
 - Rubber Products Cluster
 - Plastics Products Cluster

VII. What is Next? I. Cluster Specific Recommendations

Cluster Vital Signs (Cluster Number)		
Motor Vehicle and Associated Products (C13, C55, C56)		
Data Categories	Indicators	Explanation
Employment (E)		
<i>E2006</i>	15,533	Cluster employment
<i>E Change 2002-06</i>	-7.50%	Employment change
Specialization (LQ) (relative to U.S.)*		
<i>LQ2006</i>	6.11	High concentration
<i>LQ2006-2002</i>	-0.45	Slight decrease in relative concentration
Employee Compensation (C)		
<i>Average C (2006)</i>	\$76,656	Compensation per employment
<i>Region's C as % of U.S.</i>	113.14%	Significantly higher than U.S.
<i>Change in C 2006-2002 (%)</i>	14.34%	Positive Growth
Productivity (PRO)		
<i>PRO 2006</i>	\$669,760	Productivity
<i>Change in PRO 2006-2002 (%)</i>	48.94%	Strong positive trend
<i>Region's PRO as % of U.S.</i>	161.68%	Significantly higher than U.S.
Export (EX)		
<i>EX 2006 (Million \$)</i>	\$7,529	Total Export
<i>EX as % of Output</i>	72.36%	Exports nearly three-fourth of output
<i>EX as % of Region's EX</i>	48.43%	A significant player in the region
Imports (IM)		
<i>IM 2006 (Million \$)</i>	\$1,349	Total Imports
Industry Mix Effect on Employment Growth	-14%	A relatively slow growing cluster
Regional Effect on Employment Growth	-2%	Slightly negative locational advantage
Technology Sectors (%)	31.69%	Contains technology sectors

*LQ=1, Non-basic (average concentration of cluster in the region compared to the same cluster in the reference region (U.S.))

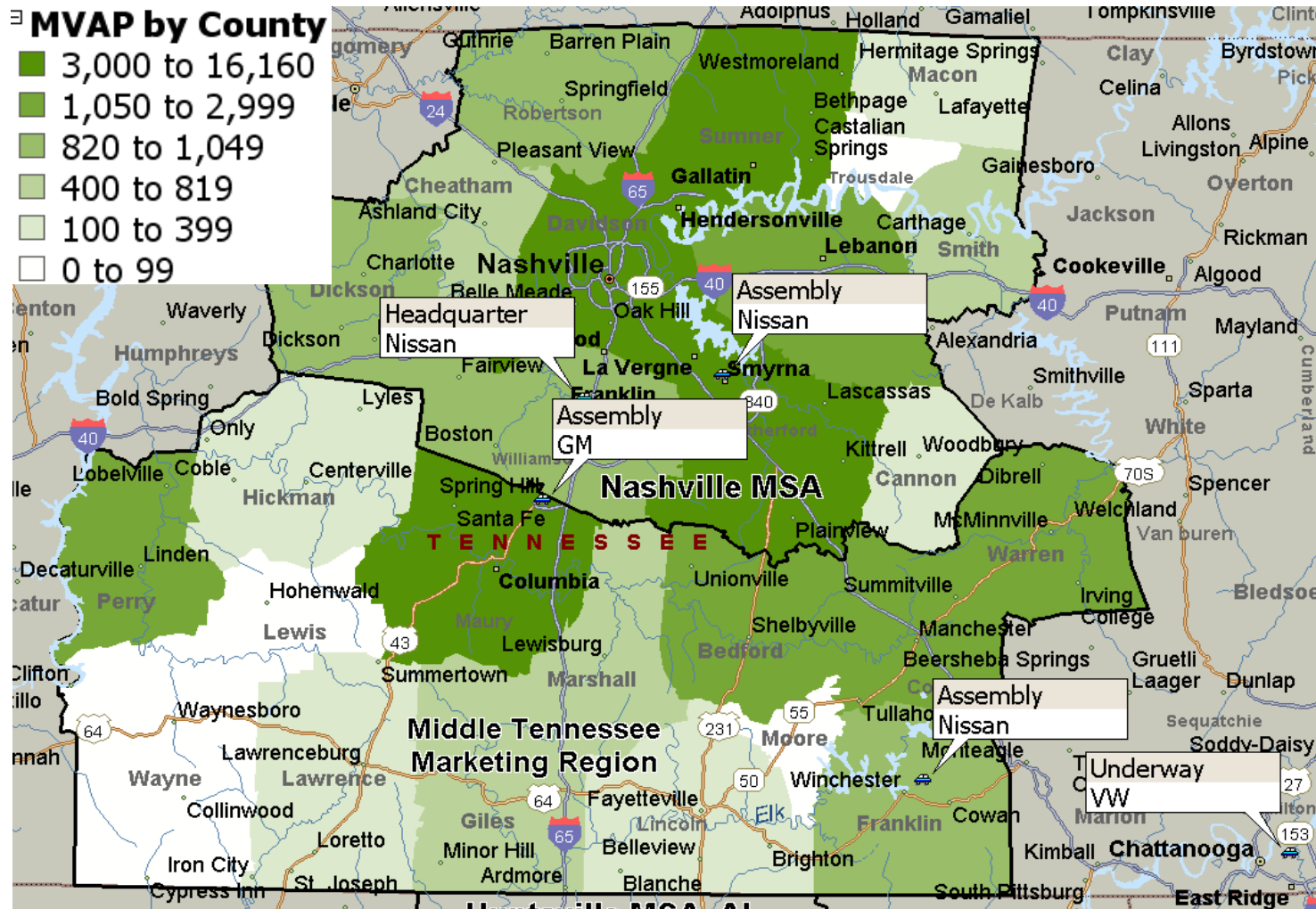
LQ<1, Non-basic (less concentration of cluster in the region compared to the same cluster in the reference region (U.S.))

LQ>1, Basic (high concentration of cluster in the region compared to the same cluster in the reference region (U.S.))

Although this group of clusters experienced employment decline over the years, it is still very strong and accounts for nearly half of the MTM region's exports

VII. What is Next? I. Cluster Specific Recommendations

EMPLOYMENT DISTRIBUTION OF MOTOR VEHICLE & ASSOCIATED PRODUCTS (C13, C55 & C56)



•Next slides will show the specifics of each aggregated cluster

- A** = Recent snapshot of the cluster in the region
- B** = Major sectors selling goods and services to the cluster
- C** = Major industries in the cluster
- D** = Major sectors buying goods and services from the cluster
- E** = Major commodities imported by the cluster in the region.
- F** = Includes industries that are members of the given cluster at the national level but absent from the region's cluster defined in block **C**
- G** = Major occupations employed by the cluster in the region.

TARGET INDUSTRY CLUSTER PROFILE: MOTOR VEHICLE AND ASSOCIATED PRODUCTS (C13, C55, C56)

CLUSTER PROFILE: A

Cluster number: C13, C55, C56
Cluster Name: Motor Vehicle and Associated Products
Cluster Status: MATURE (High concentration with slight decrease)
Technology Content: Semi-Technology Intensive

Establishments: 95 (2007 Q1)
Average Wage: \$53,984 (2007 Q1)
 Higher than the region's average wage of \$33,192
Total Employment: 16,070 (2007 Q1)

SYNERGIES BETWEEN CLUSTER AND EXISTING REGIONAL INDUSTRIES: BUYING-SELLING RELATIONSHIP

TOP INDUSTRIES SELLING TO CLUSTER: B

Motor Vehicle Parts Manufacturing
 Wholesale Trade
Automotive Repair & Maintenance
Truck Transportation
 Glass and Glass Products
 Automobile & Light Truck Manufacturing
Other Basic Inorganic Chemical Manufact.
Textile and Fabric Finishing Mills
 Architectural and Engineering Services
 Power Generation and Supply
Plastics Packaging Materials, Film & Sheet
Pesticide & Other Agricultural Chemical
 Plastic Material & Resin Manufacturing
 Plastics Plumbing Fixtures
Custom Compounding of Purchased Resin



CORE CLUSTER INDUSTRIES IN THE REGION: C

Automobile & Light Truck Manufacturing
 Motor Vehicle Body Manufacturing
Travel Trailer & Camper Manufacturing
Motor Vehicle Parts Manufacturing
 Other Aircraft Parts and Equipment
 Tire Manufacturing
Rubber & Plastics Hose and Belting Man.
Sporting and Athletic Goods Manufact.
 Gasket-Packing-and Sealing Device Man.
 Bottons-Pins-and All Other Miscellaneous
Custom Compounding of Purchased Resin
Plastics Pipe-Fittings-and Profile
 Resilient Floor Covering Manufacturing
 Plastics Plumbing Fixtures and All Other
Foam Product Manufacturing



TOP INDUSTRIES BUYING FROM CLUSTER: D

Automobile & Light Truck Manufacturing
 Motor Vehicle Parts Manufacturing
Tire Manufacturing
Automotive Repair & Maintenance
 Truck Transportation
 Waste Management & Remediation Services
Lawn & Garden Equipment Manufacturing
Glass & Glass Products
 AC, Refrigeration, and Forced Air Heating
 Other Snack Food Manufacturing
Toilet Preparation Manufacturing
Food Services & Drinking Places
 Mattress Manufacturing
 Pesticide & Other Agricultural Chemical Manufact.

STRENGTHENING CLUSTER SUPPLY-CHAIN, INCREASING DIVERSITY WITHIN THE CLUSTER, AND ADDRESSING WORKFORCE ISSUES

TOP COMMODITIES IMPORTED (Million \$): E

Motor Vehicle Parts Manufacturing	\$3,441
Wholesale Trade	\$304
Iron & Steel Mills	\$193
Semiconductor & Related Device	\$154
Other Engine Equipment Manufacturing	\$134
Management of Companies & Enterprises	\$125
Audio & Video Equipment Manufacturing	\$113
All Other Misc. Professional and Technical	\$106
Automotive Repair and Maintenance	\$87
Tire Manufacturing	\$69
Lessors of Nonfinancial Intangible Assets	\$67
Motor Vehicle Body Manufacturing	\$59
Ferrous Metal Foundries	\$46
Paint and Coating Manufacturing	\$46
Turned Product & Screw-Nut-&Bolt Manu.	\$45

MISSING CLUSTER INDUSTRIES (GAP) FROM MTM: F

Audio & Video Equipment Manufacturing
 Electric Lamp Bulb & Part Manufacturing
Truck Trailer Manufacturing
Motorcycle, Bicycle & Parts Manufacturing
 All Other Transport Equipment Manufacturing
 Photographic Film & Chemical Manufacturing
Ammunition Manufacturing
Storage Battery Manufacturing
 Primary Battery Manufacturing
 Dental Equipment & Supplies Manufacturing
Synthetic Rubber Manufacturing
Cellulosic Organic Fiber Manufacturing
 Noncellulosic Organic Fiber Manufacturing
 Plastics Bottle Manufacturing

MAJOR CLUSTER OCCUPATIONS EMPLOYED IN MTM: G

General & Operations Managers
 Computer Software Engineers, Applications
Computer: Hardware Engineers
Electrical Engineers
 Electronics Engineers, Except Computers
 Engineers, All Other
First-Line Supervisors/Managers of Production & Operat.
Electrical and Electronic Equipment Assemblers
 Computer-Controlled Machine Tool Operators
 Numerical Tool and Process Control Programmers
Machinists
Art and Design Workers, All Other
 Paper Goods Machine Setters, Operators, & Tenders
 Life, Physical, and Social Science Technicians, All Other
Printing Machine Operators

VII. What is Next? I. Cluster Specific Recommendations

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- Aggregate details for each group of clusters

- Advanced Metal Manufacturing

- Machine Tools Cluster

- Nondurable Industry Machinery

- Metalworking and Fabricated Metal Products

VII. What is Next? I. Cluster Specific Recommendations

Cluster Vital Signs (Cluster Number)		
Advanced Metal Manufacturing (C22, C32, C41)		
Data Categories	Indicators	Explanation
Employment (E)		
<i>E2006</i>	7,436	Cluster employment
<i>E Change 2002-06</i>	-29.48%	Employment change
Specialization (LQ) (relative to U.S.)*		
<i>LQ2006</i>	2.75	High concentration
<i>LQ2006-2002</i>	-1.2	Decrease in relative concentration
Employee Compensation (C)		
<i>Average C (2006)</i>	\$46,534	Compensation per employment
<i>Region's C as % of U.S.</i>	86.19%	Lower than U.S.
<i>Change in C 2006-2002 (%)</i>	4.50%	Positive Growth
Productivity (PRO)		
<i>PRO 2006</i>	\$244,176	Productivity
<i>Change in PRO 2006-2002 (%)</i>	39.77%	Strong positive trend
<i>Region's PRO as % of U.S.</i>	118.64%	Significantly higher than U.S.
Export (EX)		
<i>EX 2006 (Million \$)</i>	\$1,575	Total Export
<i>EX as % of Output</i>	86.71%	Exports a large portion of output
<i>EX as % of Region's EX</i>	10.13%	A significant player in the region
Imports (IM)		
<i>IM 2006 (Million \$)</i>	\$1,005	Total Imports
Industry Mix Effect on Employment Growth	-12%	A relatively slow growing cluster
Regional Effect on Employment Growth	-26%	Negative locational advantage
Technology Sectors (%)	7.20%	Contains a few technology sectors

*LQ=1, Non-basic (average concentration of cluster in the region compared to the same cluster in the reference region (U.S.))

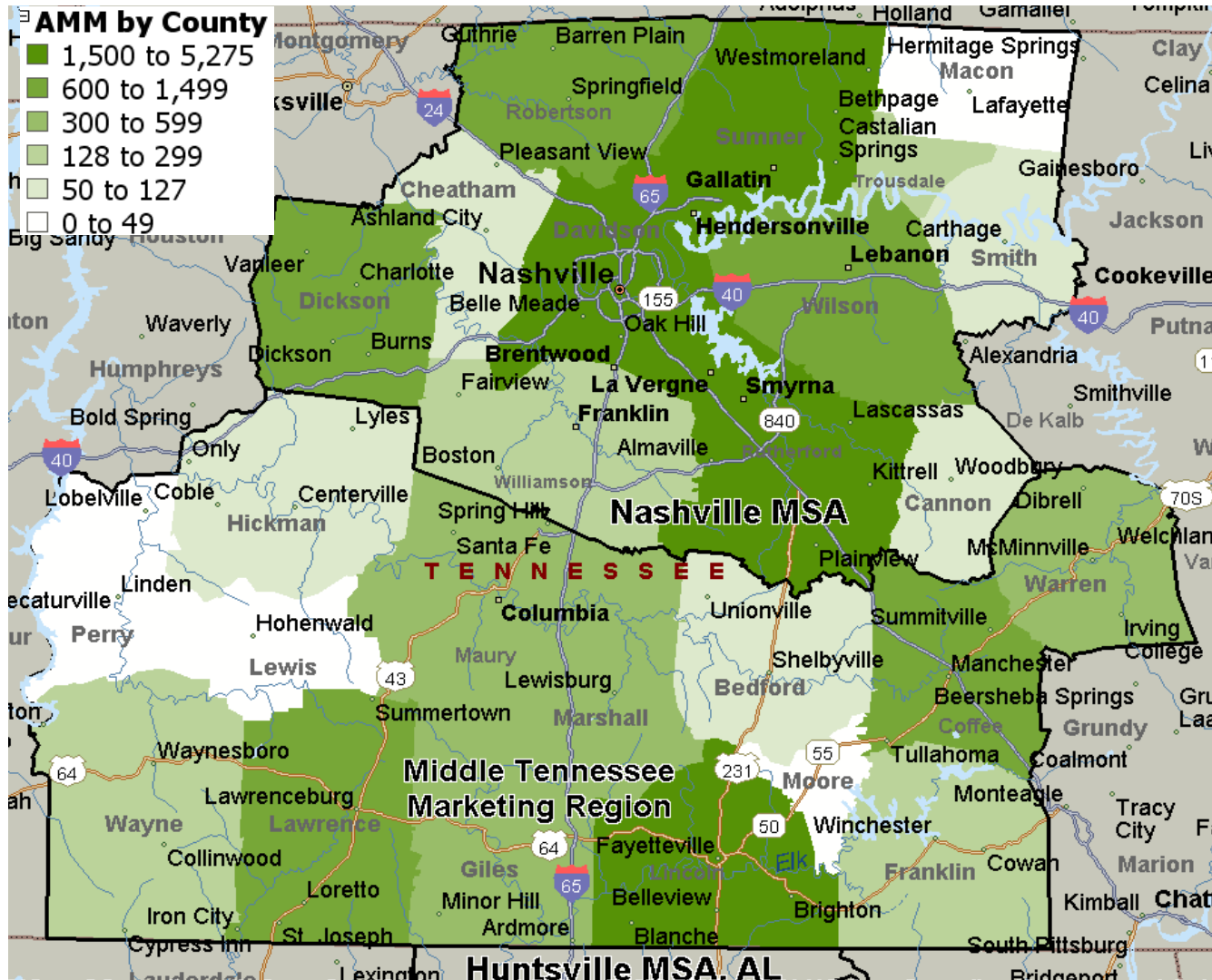
LQ<1, Non-basic (less concentration of cluster in the region compared to the same cluster in the reference region (U.S.))

LQ>1, Basic (high concentration of cluster in the region compared to the same cluster in the reference region (U.S.))

Significant employment loss due to the relocation of customer industries but it is still strong in the region

VII. What is Next? I. Cluster Specific Recommendations

EMPLOYMENT DISTRIBUTION OF ADVANCED METAL MANUFACTURING (C22, C32 & C41)



TARGET INDUSTRY CLUSTER PROFILE: ADVANCED METAL MANUFACTURING (C22, C32, C41)

CLUSTER PROFILE: A

Cluster number: C22, C32, C41
Cluster Name: Advanced Metal Manufacturing
Cluster Status: MATURE (High concentration with decrease)
Technology Content: 7.20%

Establishments: 197 (2007 Q1)
Average Wage: \$37,824 (2007 Q1)
 Higher than the region's average wage of \$33,192
Total Employment: 5,707 (2007 Q1)

SYNERGIES BETWEEN CLUSTER AND EXISTING REGIONAL INDUSTRIES: BUYING-SELLING RELATIONSHIP

TOP INDUSTRIES SELLING TO CLUSTER: B

Motor Vehicle Parts Manufacturing
 Wholesale Trade
Motor and Generator Manufacturing
Truck Transportation
 Telecommunications
 Machine Tools
Maintenance & Repair of Nonresidential B.
Sawmills
 Burial Casket Manufacturing
 Ball and Roller Bearing Manufacturing
Special Tool, Die, Jig & Fixture Manufact.
Power Generation & Supply
 Real Estate
 Plastics Plumbing Fixtures
Other State & Local Gov. Enterprises



CORE CLUSTER INDUSTRIES IN THE REGION: C

Sawmill & Woodworking Machinery
 Plastics & Rubber Industry Machinery
Printing Machinery & Equipment Manufact.
All Other Industrial Machinery Manufact.
 Other Commercial & Service Industry Man.
 Iron & Steel Forging
Hand & Edge Tool Manufacturing
Hardware Manufacturing
 Spring & Wire Product Manufacturing
 Machine Shops
Steel Wire Drawing
All Other Forging & Stamping
 Fabricated Structural Metal Manufacturing
 Plate Work Manufacturing
Metal Window & Door Manufacturing



TOP INDUSTRIES BUYING FROM CLUSTER: D

Automobile & Light Truck Manufacturing
 Motor Vehicle Parts Manufacturing
Scientific Research & Development Services
Motor & Generator Manufacturing
 Commercial Printing
 Waste Management & Remediation Services
Sawmills
Burial Casket Manufacturing
 AC, Refrigeration, and Forced Air Heating
 Machine Shops
Metal Tank, Heavy Gauge, Manufacturing
Aluminum Foundries
 Soft Drink & Ice Manufacturing
 Wholesale Trade
Mattress Manufacturing

STRENGTHENING CLUSTER SUPPLY-CHAIN, INCREASING DIVERSITY WITHIN THE CLUSTER, AND ADDRESSING WORKFORCE ISSUES

TOP COMMODITIES IMPORTED (Million \$): E

Iron & Steel Mills	\$121
AC-Refrigeration-& Forced Air Heating	\$105
Wholesale Trade	\$78
Copper Rolling-Drawing-& Extruding	\$68
Motor & Generator Manufacturing	\$55
Management of Companies & Enterprises	\$47
All Other Misc. Professional and Technical	\$23
Automatic Environmental Control Manu.	\$21
Aluminum Sheet-Plate-& Foil Manufact.	\$20
Ferrous Metal Foundries	\$18
Semiconductors & Related Device	\$17
Fabricated Structural Metal Manufacturing	\$7
Hardware Manufacturing	\$6
Steel Wire Drawing	\$6
Machine Shops	\$5

MISSING CLUSTER INDUSTRIES (GAP) FROM MTM: F

Food Product Machinery Manufacturing
 Pump & Pumping Equipment Manufacturing
Other Engine Equipment Manufacturing
Scales, Balances & Misc. General Purpose Mach
 Measuring & Dispensing Pump Manufacturing
 Saw Blade & Handsaw Manufacturing
Small Arms Manufacturing
Industrial Pattern Manufacturing
 Air Purification Equipment Manufacturing
 Industrial & Commercial Fan & Blower Manu.
Custom Roll Forming
Prefabricated Metal Buildings & Components
 Power Boiler & Heat Exchanger Manufacturing
 Conveyor & Conveying Equipment Manufact.
Military Armored Vehicles & Tank Parts Man.

MAJOR CLUSTER OCCUPATIONS EMPLOYED IN MTM: G

General & Operations Managers
 Maintenance & Repair Workers, General
Assemblers & Fabricators, All Other
Forging Machine Setters, Operators, & Tenders, Metal
 Cutting, Punching, & Press Machine Setters, Operators
 Drilling & Boring Machine Tool Setters, Operators
First-Line Supervisors/Managers of Production & Operat.
Welders, Cutters, Solderers & Brazers
 Bindery workers
 Crushing, Grinding, & Polishing Machine Setters, Operators
Machinists
Truck Drivers, Heavy and Tractor-Trailer
 Industrial Truck & Tractor Operators
 Inspectors, Testers, Sorters, Samplers, & Weighers
Sewing Machine Operators

VII. What is Next? I. Cluster Specific Recommendations

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- Aggregate details of each group of clusters

- Information Technology and Precision Instrument Manufacturing
 - Optical Equipment and Instruments Cluster
 - Computer and Electronic Equipment Cluster
 - Information Services

VII. What is Next? I. Cluster Specific Recommendations

Cluster Vital Signs (Cluster Number)		
Information Technology and Precision Manufacturing (C11, C72, C132)		
Data Categories	Indicators	Explanation
Employment (E)		
<i>E2006</i>	5,845	Cluster employment
<i>E Change 2002-06</i>	3.64%	Employment change
Specialization (LQ) (relative to U.S.)*		
<i>LQ2006</i>	0.82	Low concentration
<i>LQ2006-2002</i>	0.08	Increase in relative concentration
Employee Compensation (C)		
<i>Average C (2006)</i>	\$44,686	Compensation per employment
<i>Region's C as % of U.S.</i>	74.73%	Lower than U.S.
<i>Change in C 2006-2002 (%)</i>	16.35%	Positive Growth
Productivity (PRO)		
<i>PRO 2006</i>	\$178,887	Productivity
<i>Change in PRO 2006-2002 (%)</i>	39.77%	Strong positive trend
<i>Region's PRO as % of U.S.</i>	91.44%	Slightly lower than U.S.
Export (EX)		
<i>EX 2006 (Million \$)</i>	\$602	Total Export
<i>EX as % of Output</i>	57.59%	Exports little over half of output
<i>EX as % of Region's EX</i>	3.87%	Not a significant player in the region
Imports (IM)		
<i>IM 2006 (Million \$)</i>	\$357	Total Imports
Industry Mix Effect on Employment Growth	-19%	A relatively slow growing cluster
Regional Effect on Employment Growth	14%	Positive locational advantage
Technology Sectors (%)	39.21%	Contains technology sectors

*LQ=1, Non-basic (average concentration of cluster in the region compared to the same cluster in the reference region (U.S.))

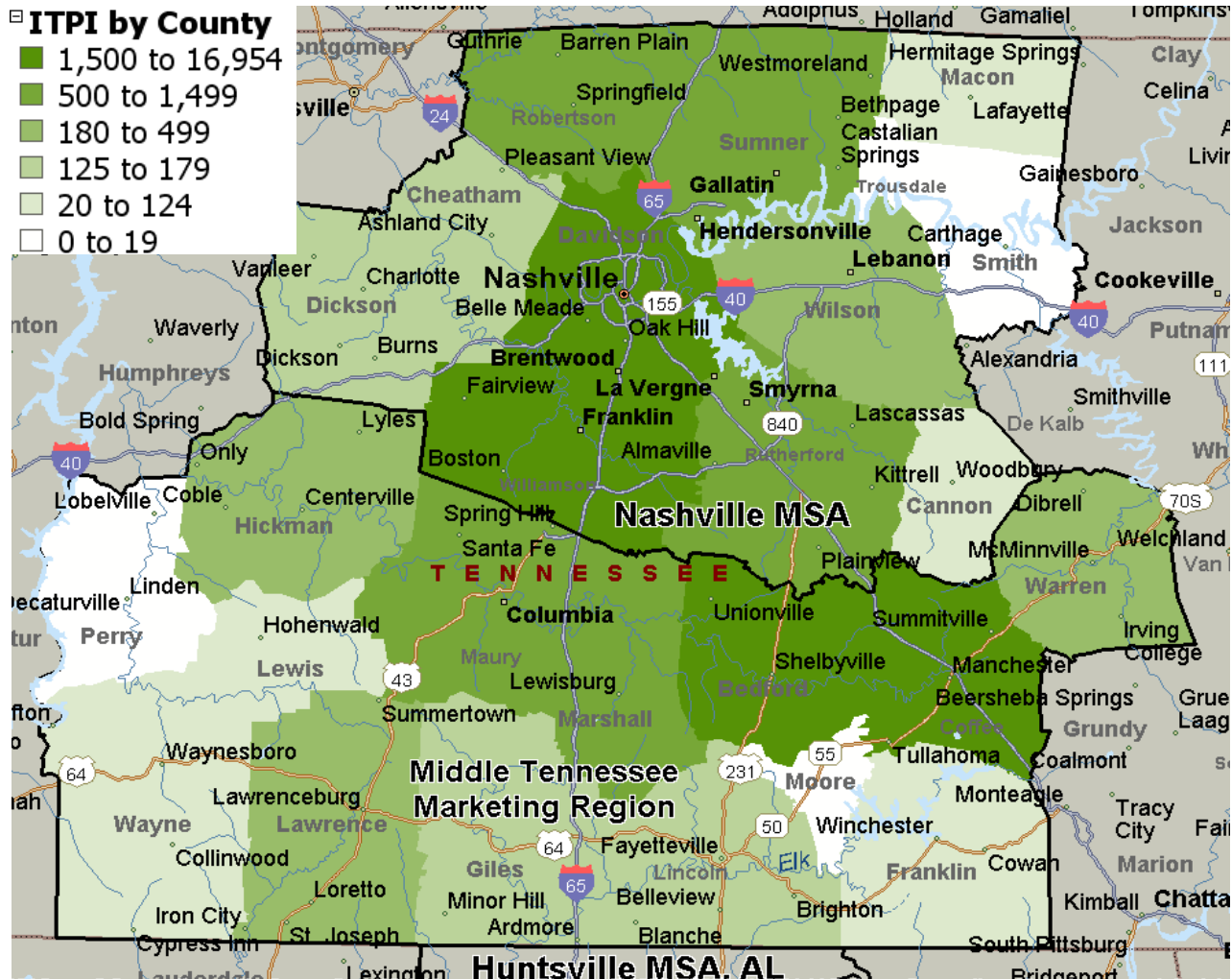
LQ<1, Non-basic (less concentration of cluster in the region compared to the same cluster in the reference region (U.S.))

LQ>1, Basic (high concentration of cluster in the region compared to the same cluster in the reference region (U.S.))

It is an emerging cluster with strong potential in the region due to this cluster's nature: enabling, technology intensive and basic

VII. What is Next? I. Cluster Specific Recommendations

EMPLOYMENT DISTRIBUTION OF INFORMATION TECH. & PRECISION MANUFACTURING (C11, C72 & C132)



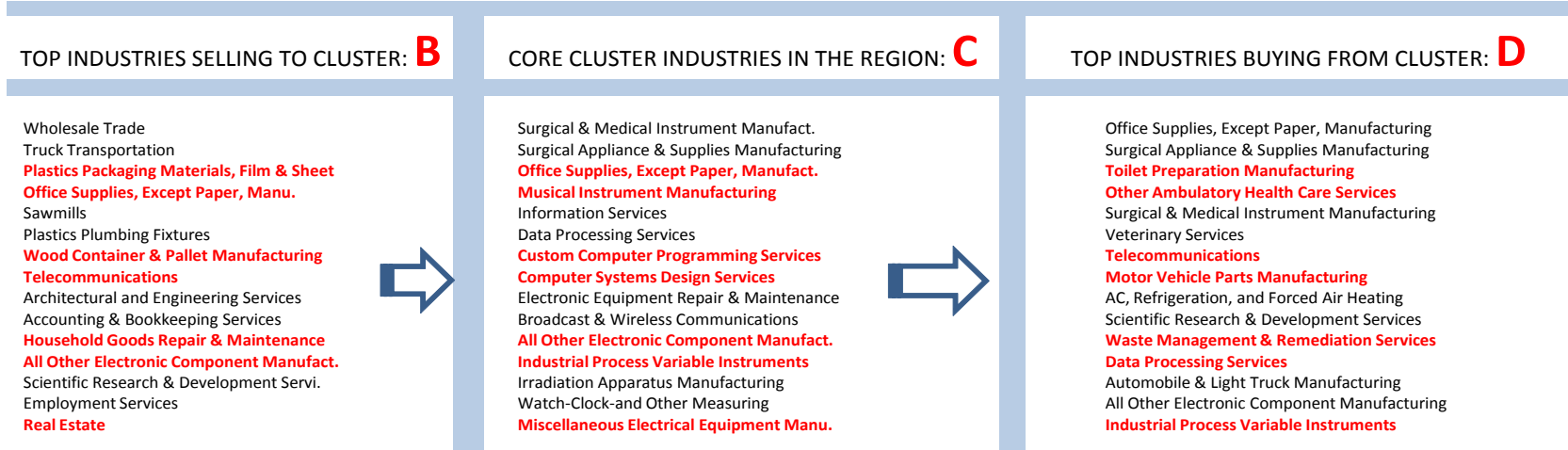
TARGET INDUSTRY CLUSTER PROFILE: INFORMATION TECHNOLOGY AND PRECISION INSTRUMENT MANUFACTURING (C11, C72, C132)

CLUSTER PROFILE: A

Cluster number: C11, C72, C132
Cluster Name: Information Tech. & Precision Instrument Manufacturing
Cluster Status: EMERGING (Low concentration with increase)
Technology Content: Semi-Technology Intensive

Establishments: 197 (2007 Q1)
Average Wage: \$39,774 (2007 Q1)
Higher than the region's average wage of \$33,192
Total Employment: 6,692 (2007 Q1)

SYNERGIES BETWEEN CLUSTER AND EXISTING REGIONAL INDUSTRIES: BUYING-SELLING RELATIONSHIP



STRENGTHENING CLUSTER SUPPLY-CHAIN, INCREASING DIVERSITY WITHIN THE CLUSTER, AND ADDRESSING WORKFORCE ISSUES



VII. What is Next? I. Cluster Specific Recommendations

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- Aggregate details of each group of clusters

- Agribusiness

- Breweries and Distilleries

- Packaged Goods Products

VII. What is Next? I. Cluster Specific Recommendations

Cluster Vital Signs (Cluster Number)

Agribusiness (C92, C151)		
Data Categories	Indicators	Explanation
Employment (E)		
<i>E2006</i>	3,704	Cluster employment
<i>E Change 2002-06</i>	-6.28%	Employment change
Specialization (LQ) (relative to U.S.)*		
<i>LQ2006</i>	2.55	High concentration
<i>LQ2006-2002</i>	-0.26	Slight decrease in relative concentration
Employee Compensation (C)		
<i>Average C (2006)</i>	\$47,171	Compensation per employment
<i>Region's C as % of U.S.</i>	104.28%	Significantly higher than U.S.
<i>Change in C 2006-2002 (%)</i>	16.69%	Positive Growth
Productivity (PRO)		
<i>PRO 2006</i>	\$466,225	Productivity
<i>Change in PRO 2006-2002 (%)</i>	72.94%	Strong positive trend
<i>Region's PRO as % of U.S.</i>	126.30%	Significantly higher than U.S.
Export (EX)		
<i>EX 2006 (Million \$)</i>	\$1,528	Total Export
<i>EX as % of Output</i>	88.55%	Exports nearly all of output
<i>EX as % of Region's EX</i>	9.83%	A significant player in the region
Imports (IM)		
<i>IM 2006 (Million \$)</i>	\$618	Total Imports
Industry Mix Effect on Employment Growth	-10%	A relatively slow growing cluster
Regional Effect on Employment Growth	-5%	Negative locational advantage
Technology Sectors (%)	1.00%	Contains a few technology sectors

*LQ=1, Non-basic (average concentration of cluster in the region compared to the same cluster in the reference region (U.S.))

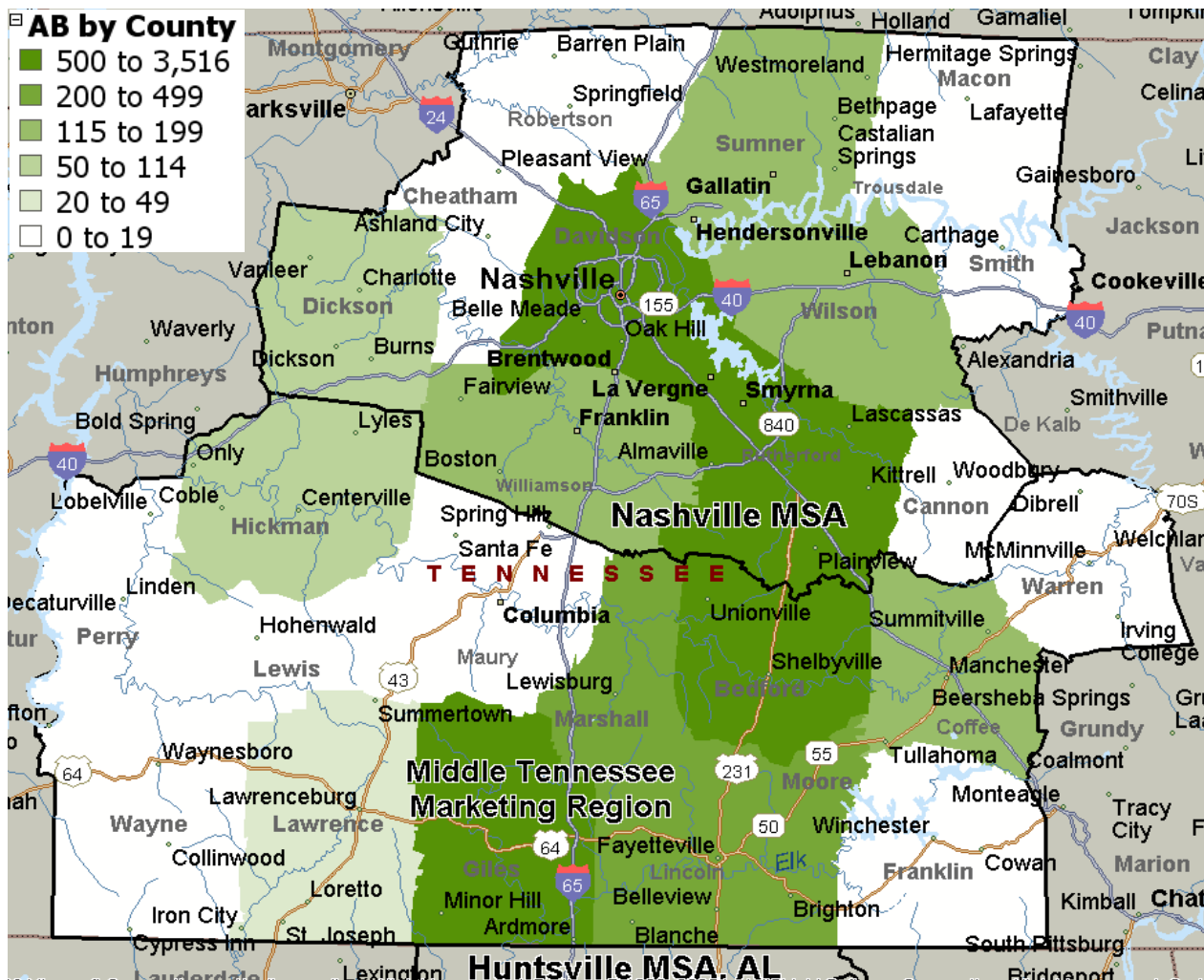
LQ<1, Non-basic (less concentration of cluster in the region compared to the same cluster in the reference region (U.S.))

LQ>1, Basic (high concentration of cluster in the region compared to the same cluster in the reference region (U.S.))

Region has unique assets to leverage to promote these clusters

VII. What is Next? I. Cluster Specific Recommendations

EMPLOYMENT DISTRIBUTION OF AGRIBUSINESS (C92 & C151)



TARGET INDUSTRY CLUSTER PROFILE: AGRIBUSINESS (C92, C151)

CLUSTER PROFILE: A

Cluster number: C92, C151
Cluster Name: Agribusiness
Cluster Status: MATURE (High concentration with slight decrease)
Technology Content: Small

Establishments: 36 (2007 Q1)
Average Wage: \$35,533 (2007 Q1)
 Higher than the region's average wage of \$33,192
Total Employment: 4,041 (2007 Q1)

SYNERGIES BETWEEN CLUSTER AND EXISTING REGIONAL INDUSTRIES: BUYING-SELLING RELATIONSHIP

TOP INDUSTRIES SELLING TO CLUSTER: B

Poultry and Egg Production
 Poultry Production
Cattle Ranching and Farming
Wholesale Trade
 Truck Transportation
 Animal Production, Except Cattle & Poultry
Plastics Packaging Materials, Film & Sheet
Toilet Preparation Manufacturing
 Plastics Plumbing Fixtures
 Scientific Research and Development Serv.
Wood Container and Pallet Manufacturing
Distilleries
 Commercial Printing
 Advertising and Related Services
Other State and Local Government Enter.



CORE CLUSTER INDUSTRIES IN THE REGION: C

Fruit and Vegetable Canning and Drying
 Soft Drink and Ice Manufacturing
Wineries
Distilleries
 Toilet Preparation Manufacturing
 Confectionery Manufacturing From Purchased
Animal-Except Poultry-Slaughtering
Meat Processed from Carcasses
 Poultry Processing
 Bread and Bakery Product-Except Frozen
Other Snack Food Manufacturing
Mayonnaise-Dressing-and Sauce Manufact.
 All Other Food Manufacturing



TOP INDUSTRIES BUYING FROM CLUSTER: D

Poultry Processing
 Leather & Hide Tanning and Finishing
Animal-Except Poultry-Slaughtering
Other Snack Food Manufacturing
 Toilet Preparation Manufacturing
 Distilleries
Personal Care Services
Soft Drink and Ice Manufacturing
 Services to Building and Dwellings
 Scientific Research and Development Services

STRENGTHENING CLUSTER SUPPLY-CHAIN, INCREASING DIVERSITY WITHIN THE CLUSTER, AND ADDRESSING WORKFORCE ISSUES

TOP COMMODITIES IMPORTED (Million \$): E

Wholesale Trade	\$91
Management of Companies & Enterprises	\$77
Distilleries	\$39
Paperboard Container Manufacturing	\$30
Plastics Bottle Manufacturing	\$21
Glass Container Manufacturing	\$19
All Other Misc. Professional & Technical	\$19
Poultry & Egg Production	\$17
Metal Can-Box-and Other Container Man.	\$17
Petroleum Refineries	\$17
Fats & Oils Refining and Blending	\$11
Grain Farming	\$9
Plastics Pipe-Fittings-and Profile Shapes	\$9
Flour Milling	\$9
Flavoring Syrup & Concentrate Manufact.	\$8

MISSING CLUSTER INDUSTRIES (GAP) FROM MTM: F

Breakfast Cereal Manufacturing
 Coffee and Tea Manufacturing
Confectionery Manufact. from Cacao Beans
Cookie & Cracker Manufacturing
 Dry Pasta Manufacturing
 Fats & Oils Refining and Blending
Flavoring Syrup & Concentrate Manufacturing
Frozen Cakes & Other Pastries Manufacturing
 Frozen Food Manufacturing
 Mixes & Dough Made from Purchased Flour
Nonchocolate Confectionery Manufacturing
Roasted Nuts & Peanut Butter Manufacturing
 Breweries
 Spice and Extract Manufacturing
Seafood Product Preparation & Packaging

MAJOR CLUSTER OCCUPATIONS EMPLOYED IN MTM: G

Maintenance Workers, Machinery
 Packaging & Filling Machine Operators and Tenders
First-Line Supervisors/Managers of Production & Operat. Bakers
 Food Preparation Workers
 Industrial Truck and Tractor Operators
Inspectors, Testers, Sorters, Samplers, and Weighers
Janitors & Cleaners, Except Maids and Housekeeping
 Laborers & Freight, Stock, and Material Movers, Hand
 Multiple Machine Tool Setters, Operators, & Tenders
General and Operations Managers
Packers & Packagers, Hand
 Paper Goods Machine Setters, Operators, and Tenders
 Truck Drivers, Heavy and Tractor-Trailer

VII. What is Next? Study Recommendations

I. Cluster Specific Recommendations

II. What is Next? Recommendations for Region

1. Regional Level Marketing

2. Regional Level Workforce Analysis
3. In-Depth Cluster Needs Assessment
4. Emerging Clusters/Areas: High-Tech
5. Emerging Clusters/Areas: Tourism
6. Specific Policy Priorities

VII. What is Next? Recommendations: 1. Regional Level Marketing

- Develop a list of target industries based on the cluster analysis
 - ▣ Rural community leaders should work together to market the region as a “region” rather than individual counties
 - This requires a strong commitment on the part of leadership to work together to promote region using multiple venues
 - Marketing Materials
 - Business Expos and Trade Shows
 - ▣ Community leaders should communicate with existing businesses to market their products and brand names
 - This will further promote successful business recruitment to the region

VII. What is Next? Study Recommendations

I. Cluster Specific Recommendations

II. What is Next? Recommendations for Region

1. Regional Level Marketing
- 2. *Regional Level Workforce Analysis***
3. In-Depth Cluster Needs Assessment
4. Emerging Clusters/Areas: High-Tech
5. Emerging Clusters/Areas: Tourism
6. Specific Policy Priorities

VII. What is Next? Recommendations:

2. Regional Level Workforce Analysis

- Availability and quality of workforce are critically important for a region to improve its economic well-being
 - ▣ Engage the State, ECD and Department of Labor and Workforce Development for more comprehensive study in region
 - Unemployed vs. Underemployed
 - Qualities of Unemployed and Underemployed
 - Type of Workers (Occupation)
 - ▣ Engage TVA, USDA, EDA to support the comprehensive review of the state of workforce in rural areas

VII. What is Next? Study Recommendations

I. Cluster Specific Recommendations

II. What is Next? Recommendations for Region

1. Regional Level Marketing
2. Regional Level Workforce Analysis
- 3. *In-Depth Cluster Needs Assessment***
4. Emerging Clusters/Areas: High-Tech
5. Emerging Clusters/Areas: Tourism
6. Specific Policy Priorities

VII. What is Next? Recommendations:

3. In-Depth Cluster Needs Assessment

- Now that we identified target clusters, the next step is to conduct an in-depth needs assessment for each of the aggregated clusters
 - ▣ This will involve but not limited to
 - Identifying a champion from industry for each of the aggregated cluster
 - Conducting several topical focus group meetings
 - Cluster workforce
 - Cluster supply-chain
 - Other issues
 - Interviewing the prominent members of cluster to identify cluster specific investment areas to increase regional competitiveness

VII. What is Next? Study Recommendations

I. Cluster Specific Recommendations

II. What is Next? Recommendations for Region

1. Regional Level Marketing
2. Regional Level Workforce Analysis
3. In-Depth Cluster Needs Assessment
- 4. *Emerging Clusters/Areas: High-Tech***
5. Emerging Clusters/Areas: Tourism
6. Specific Policy Priorities

VII. What is Next? Recommendations:

4. Emerging Clusters/Areas: High-Tech

- Interviews and surveys identified several potential/emerging clusters in the region
- One potential area is

□ Aerospace and Defense Cluster/ Alternative Energy/ High Tech

VII. What is Next? Recommendations:

4. Emerging Clusters/Areas: High-Tech

- While focusing on high-tech and synergy between defense-related establishments, the region also should pay close attention to developments in alternative energy

“Tennessee to help build biofuel plant: Switchgrass to be distilled”

Tennessean, 7/23/2008

VII. What is Next? Recommendations:

4. Emerging Clusters/Areas: High-Tech

The region has all necessary ingredients to be a “high-tech” corridor

- Region’s own Arnold Engineering and Development Center (AEDC) and existing and potential developments just south of the border (Huntsville MSA, AL) constitutes the seed of this potential corridor
 - AEDC (Engine Testing and Flight Simulation) (Coffee and Franklin Counties)
 - Missile Defense System (Huntsville MSA, AL)
 - Redstone Arsenal Expansion (Huntsville MSA, AL) as part of the Base Realignment and Closure (BRAC) Commission recommendations
- A cross border synergy is necessary to activate this corridor

VII. What is Next? Recommendations:

4. Emerging Clusters/Areas: High-Tech

A region must have a mega site to successfully attract an auto manufacturer

VII. What is Next? Recommendations:

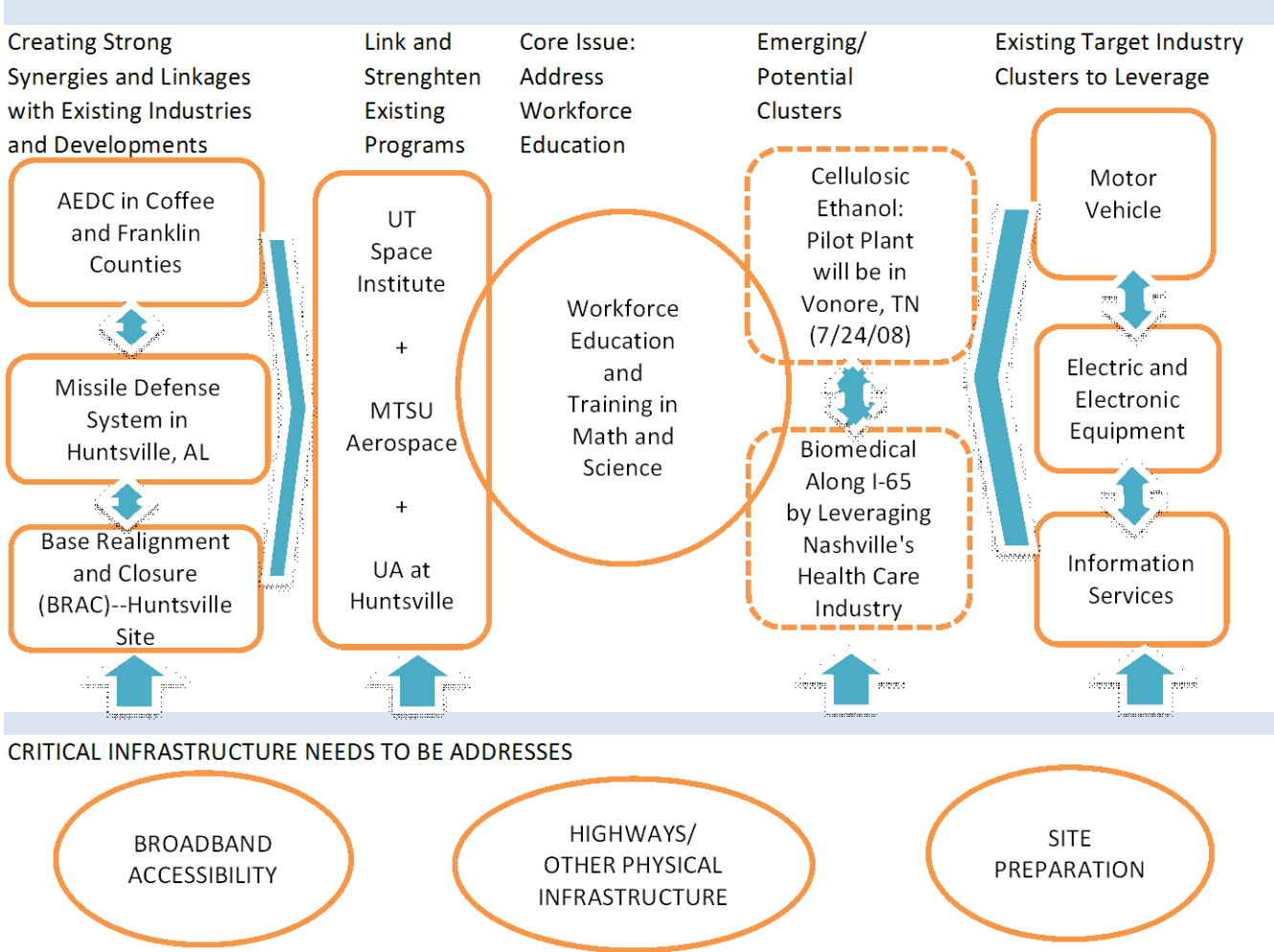
4. Emerging Clusters/Areas: High-Tech

- To use similar analogy, a region must have three foundations intact to attract high-tech & high-paying jobs
 - ▣ Educated Workforce
 - Fast-track training facilities at the regional level
 - Improving K-12 system
 - Setting up branch campuses of area universities
 - ▣ Information Technology (Broadband) Infrastructure
 - Expanding broadband access throughout the rural communities
 - ▣ Physical Infrastructure (Including Highways)
 - Site preparation
 - Aging infrastructure in rural areas
 - Highways (I-64)

VII. What is Next? Recommendations:

4. Emerging Clusters/Areas: High-Tech

FUTURE OF THE REGION--AEROSPACE, DEFENSE, MOTOR VEHICLE, AND SWITCHGRASS(!):
 BUILDING A HIGH-TECHNOLOGY CORRIDOR BY CREATING SYNERGIES AMONG EXISTING RESOURCES



VII. What is Next? Study Recommendations

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I. Cluster Specific Recommendations

II. What is Next? Recommendations for Region

1. Regional Level Marketing
2. Regional Level Workforce Analysis
3. In-Depth Cluster Needs Assessment
4. Emerging Clusters/Areas: High-Tech
- 5. *Emerging Clusters/Areas: Tourism***
6. Specific Policy Priorities

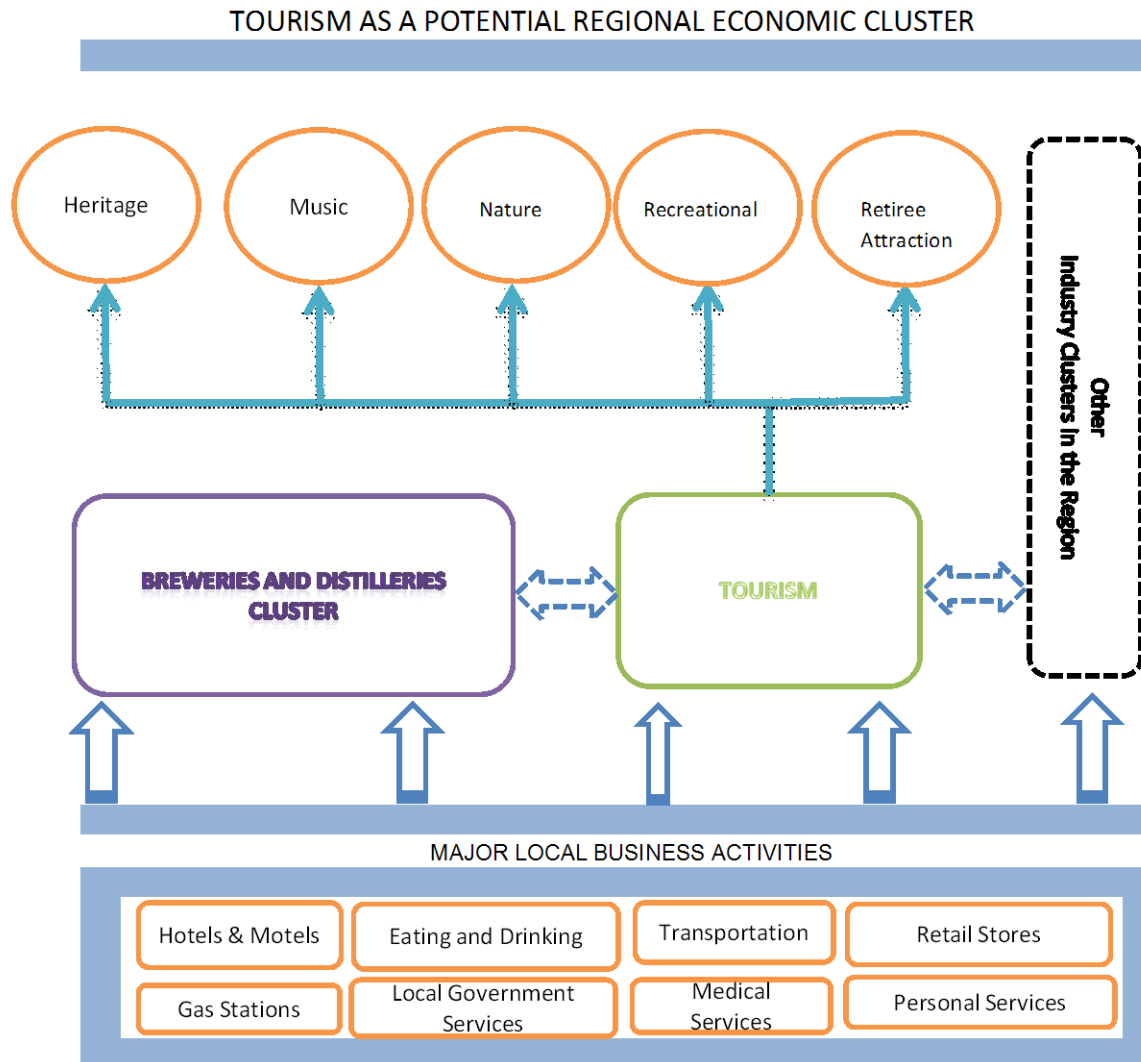
VII. What is Next? Recommendations: 5. Emerging Clusters/Areas: Tourism

- ▣ Interviews and surveys identified several potential/emerging clusters in the region
- ▣ Another potential area is

▣ Tourism/ Agribusiness

VII. What is Next? Recommendations:

5. Emerging Clusters/Areas: Tourism



The region has a full potential of developing a tourism cluster based on the existing resources

VII. What is Next? Recommendations:

5. Emerging Clusters/Areas: Tourism

Region's potential for "TOURISM"

- Region has a diverse set of "brand names" to leverage for this purpose
- In addition, regional diversity in terms of economic development also necessitates different sets of economic development strategies
 - Perry, Lewis and Wayne corridor could be successfully connected to the region using this venue
- Major world renowned brands: Jack Daniels, George Dickel and Bonnaroo
 - In addition, "elephant sanctuary" in Lewis, "farm community" in Lewis, "gospel music" in Lawrence, "Amish community" in Lawrence, "walking horse celebrations" in Bedford, "mule day" in Maury are a few other examples to cite.

VII. What is Next? Study Recommendations

I. Cluster Specific Recommendations

II. What is Next? Recommendations for Region

1. Regional Level Marketing
2. Regional Level Workforce Analysis
3. In-Depth Cluster Needs Assessment
4. Emerging Clusters/Areas: High-Tech
5. Emerging Clusters/Areas: Tourism
- 6. *Specific Policy Priorities***

VII. What is Next? Recommendations:

6. Specific Policy Priorities

- Small businesses constitute a significant percent of establishments and jobs in the region
 - ▣ A significant portion of these businesses employs 1-9 people
- Business incentives available at the state and local level often bypass these businesses
- Even if these small businesses are eligible for certain incentives, bureaucratic procedures discourage them to go through the process
- **Community leaders should work with state officials to revise existing business incentive requirements to encourage small business formation and entrepreneurship in rural communities**

Thank you!

Questions?

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