

**New Learnings on State and Regional Competitiveness:
What Does it Mean for Tennessee?**

**Dr. Christian Ketels
Harvard Business School**

***19. October 2011
Nashville, Tennessee***

The Economic Challenge in 2011



What is Competitiveness?

- Competitiveness is the **productivity** of the economy mobilizing the working age population and of employees to create value
- Productivity determines **wages, jobs**, and the **standard of living**
- It is not **what** fields a state competes in that determines its prosperity, but **how productively** it competes
- Productivity is strongly driven by the **specific conditions** in a particular field, not just economy-wide factors

Tennessee Performance Scorecard

Current Position

Trend

Change in Rank

Prosperity

GDP per Capita, 1999-2009

38

42

-8

Wages

Average Private Wage, 1998-2009

28

33

-1

Job Creation

*Private Employment Growth,
2007-2009 and vs. 1998-2000*

40

39

-5

Labor Mobilization

*Proportion of Working Age Population
in the Workforce, 1999-2010*

40

36

-3

Labor Productivity

GDP per Worker, 1999-2009

34

34

-8

New Business Formation

*Traded Cluster Establishment Growth,
2007-2009 and vs. 1998-2000*

45

26

-1

Innovation

Patents per Employee, 1999-2009

39

37

-4

Cluster Strength

Employment in Strong Clusters, 1998-2009

44

39

-7

Leading Clusters

*by employment size, 2009
(national rank)*

- Automotive (4)
- Chemical Products (2)
- Motor Driven Products (1)
- Building Fixtures, Equipment and Services (12)
- Furniture (7)

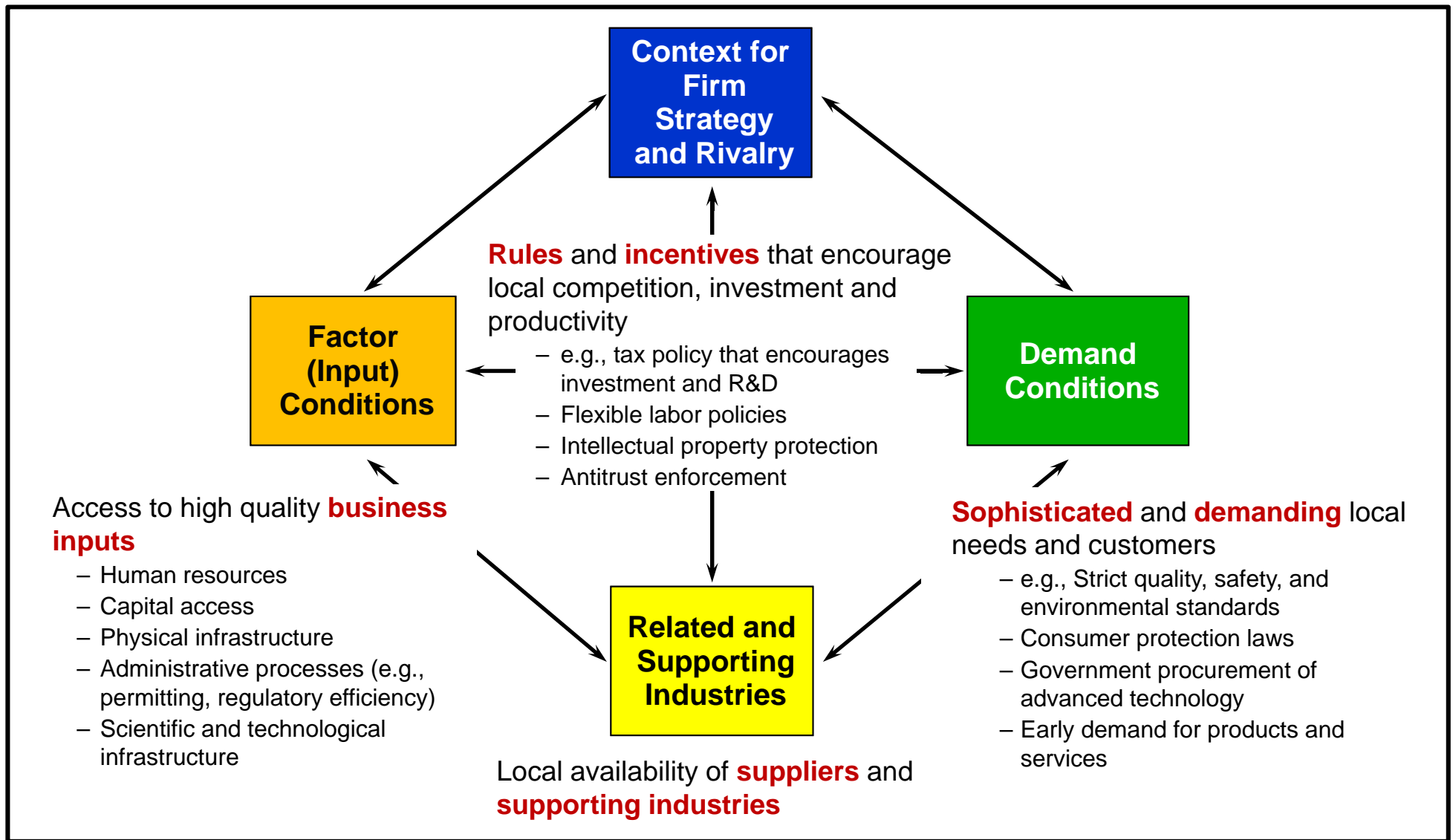


What Drives State Productivity?

**1. Quality of the
Overall Business
Environment**

**2. Cluster
Development**

Quality of the Overall Business Environment



- **Many things matter** for competitiveness
- Economic development is the process of improving the business environment to enable companies **to compete in increasingly sophisticated ways**

Indicative Qualities of the Tennessee Business Environment

- Low costs
- Attractive quality of life
- Central location
- Significant number of institutions for higher education
- ...

Leading Patentees from Tennessee

Rank	Institution	Number of Patents
1	EASTMAN CHEMICAL COMPANY	204
2	UT-BATTELLE, LLC	180
3	BLACK & DECKER INC.	142
4	THOMAS & BETTS INTERNATIONAL, INC.	119
5	WARSAW ORTHOPEDIC, INC.	117
6	VANDERBILT UNIVERSITY	76
7	SDGI HOLDINGS, INC.	58
8	HUNTER FAN COMPANY	53
9	MAYTAG CORPORATION	48
10	MARS INCORPORATED	44
11	U OF TENNESSEE RESEARCH FOUNDATION	42
12	SIEMENS ENERGY & AUTOMATION, INC.	40

What is a Cluster?

A geographically concentrated group of interconnected companies and associated institutions in a field of several related industries



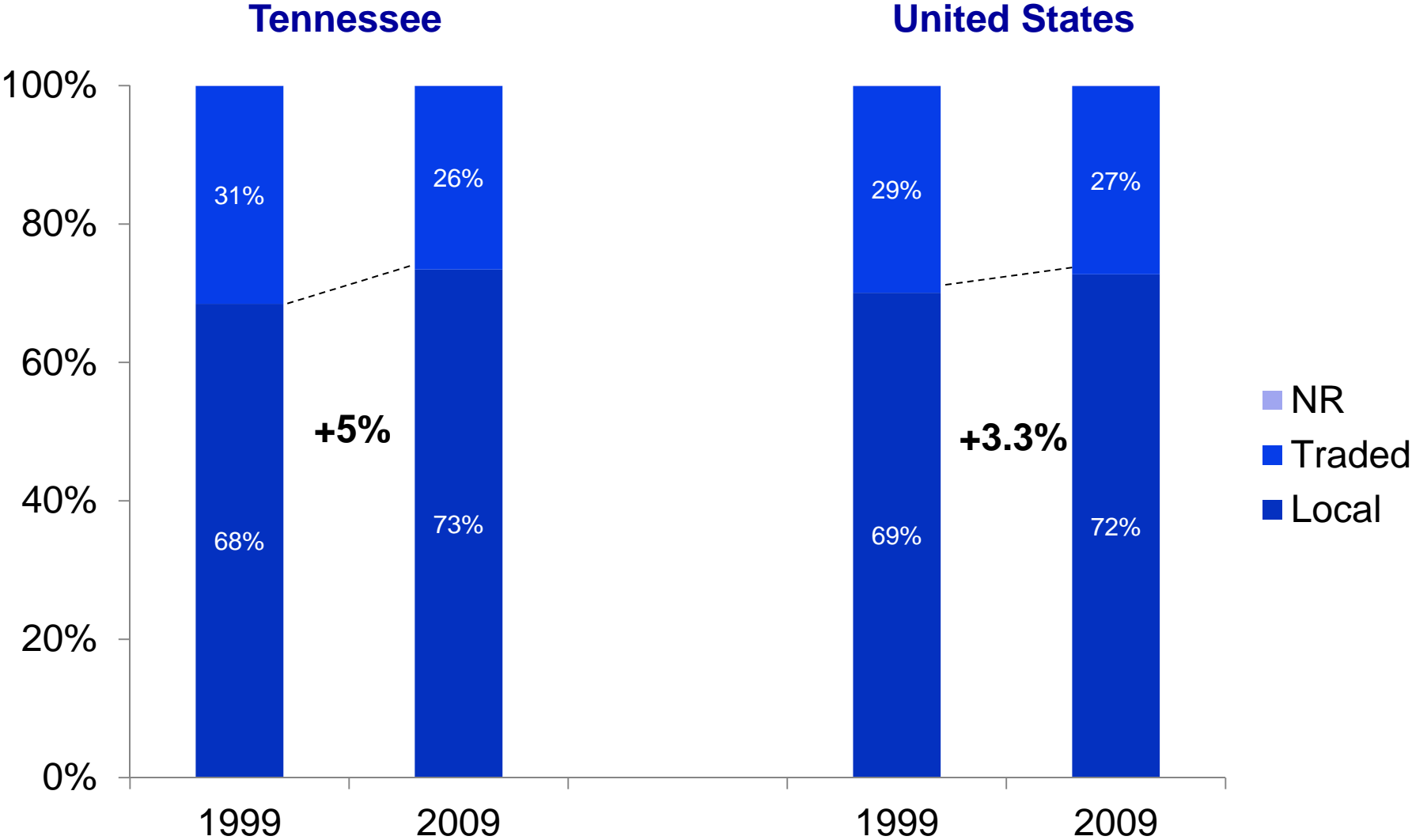
Traded Clusters

- Compete to serve **national** and **international** markets
- Can locate anywhere
- 30% of employment
- 90% of patenting

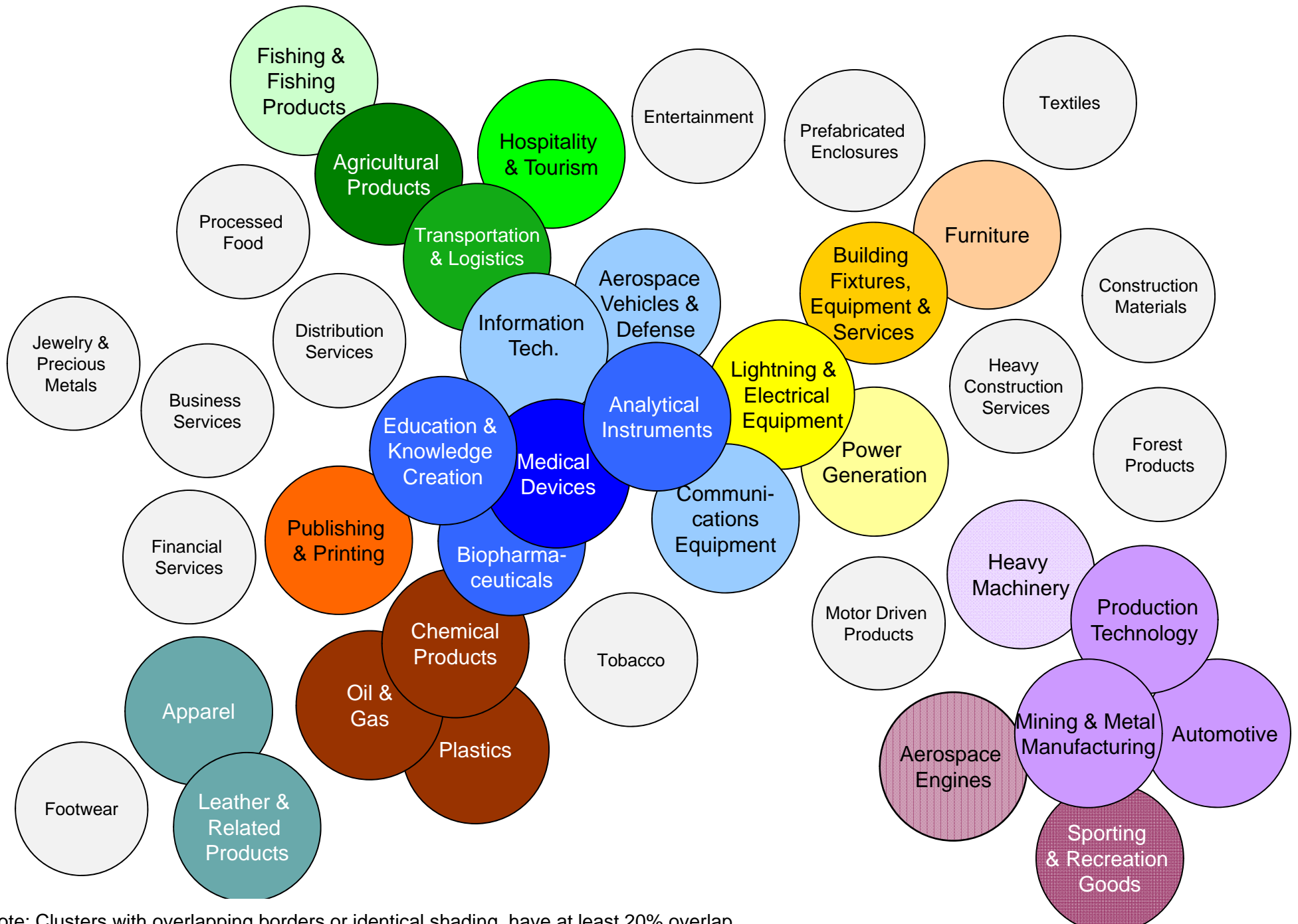
Local Clusters

- Serve almost exclusively the **local** market
- Not directly exposed to cross-regional competition
- 70% of employment
- 10% of patenting

Broad Composition of the Economy



Related Clusters and Economic Diversification

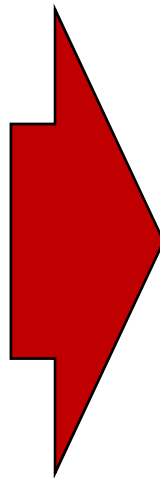


Note: Clusters with overlapping borders or identical shading have at least 20% overlap (by number of industries) in both directions.

Cluster Development

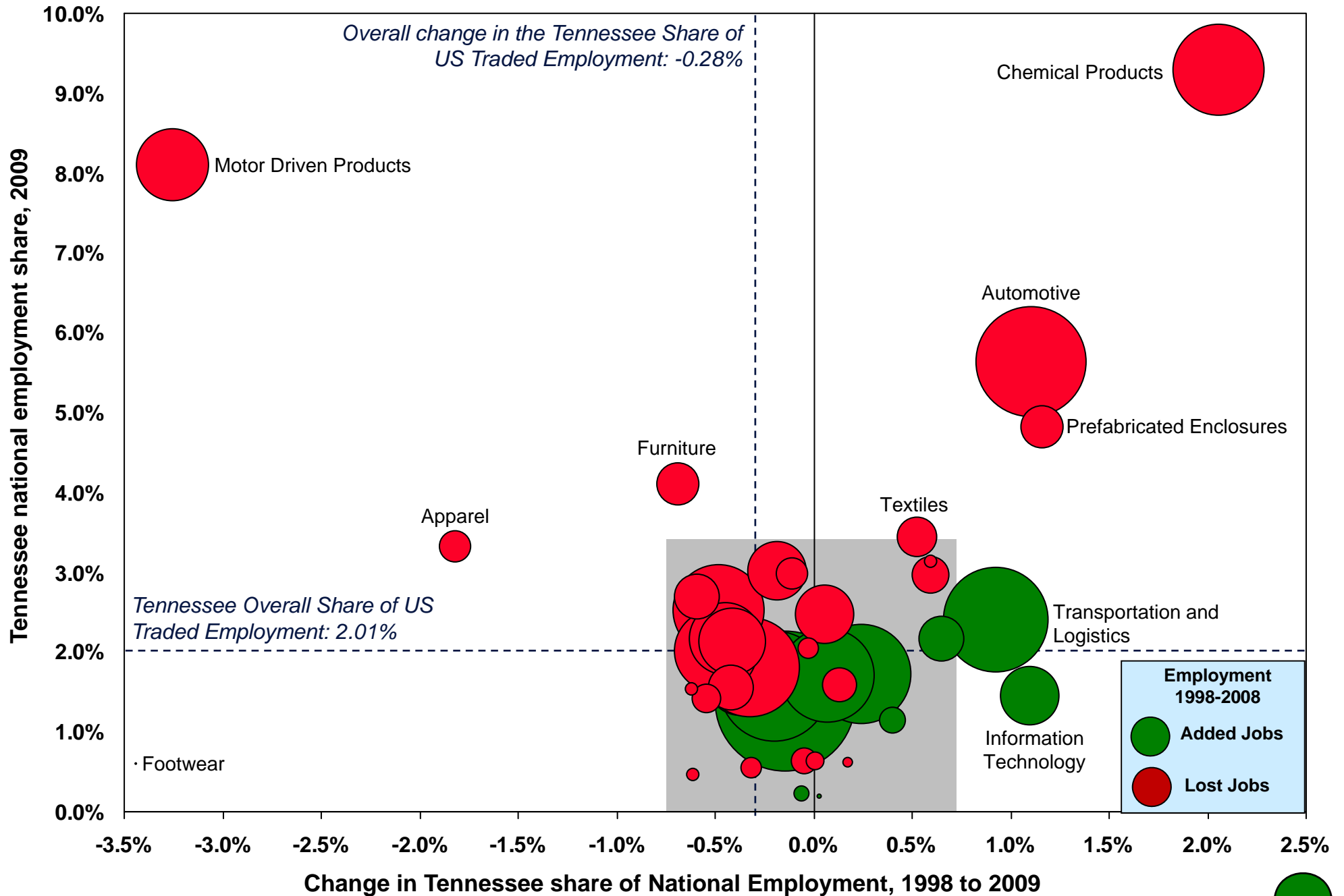
Cluster Presence and Economic Performance

- Specialization in **strong clusters**
- **Breadth** of industries within each cluster
- Strength in **related clusters**
- Presence of a region's clusters in **neighboring regions**

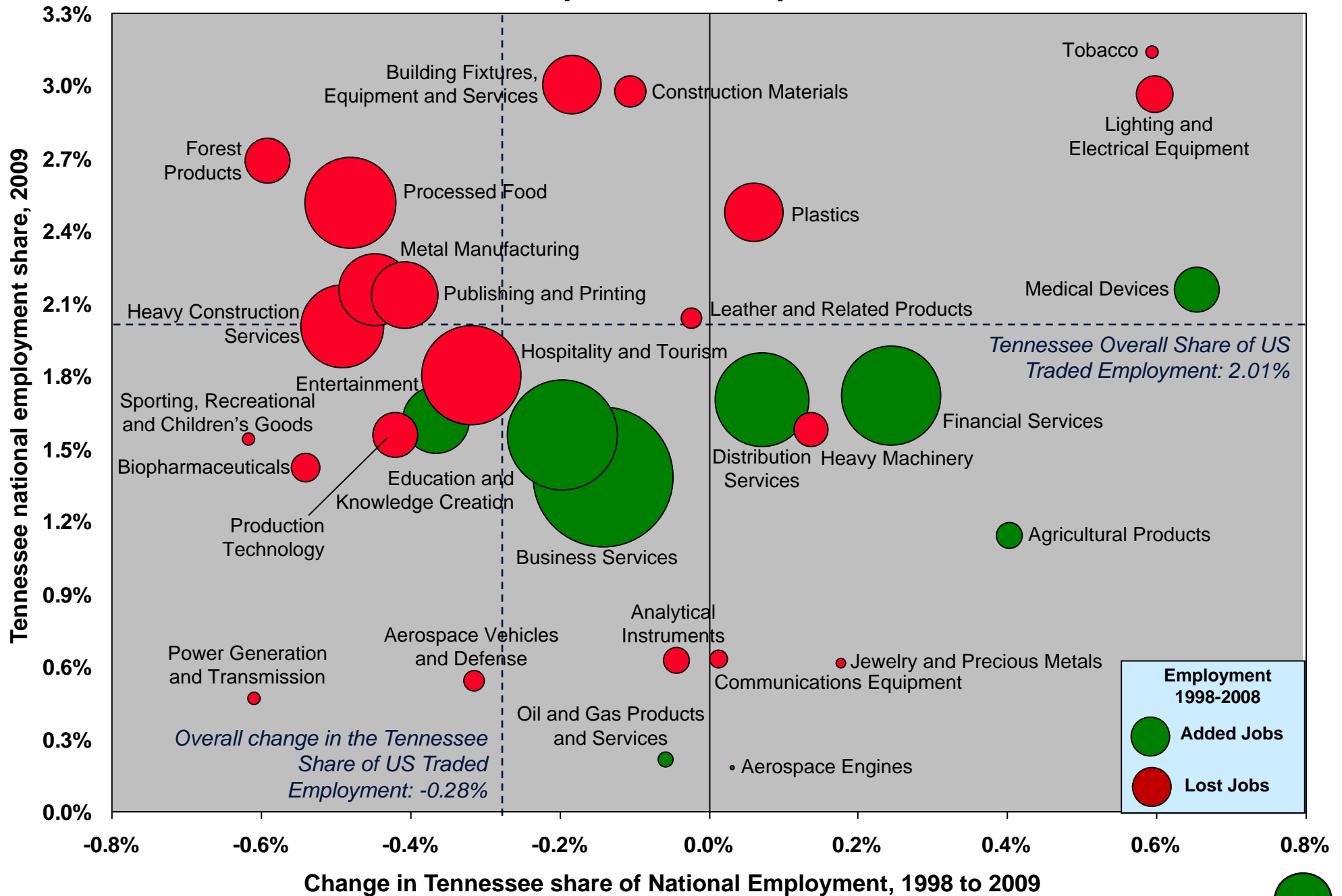


- **Job** growth
- Higher **wages**
- Higher **patenting** rates
- Greater **new business** formation, growth and survival

Traded Cluster Composition of the Tennessee Economy

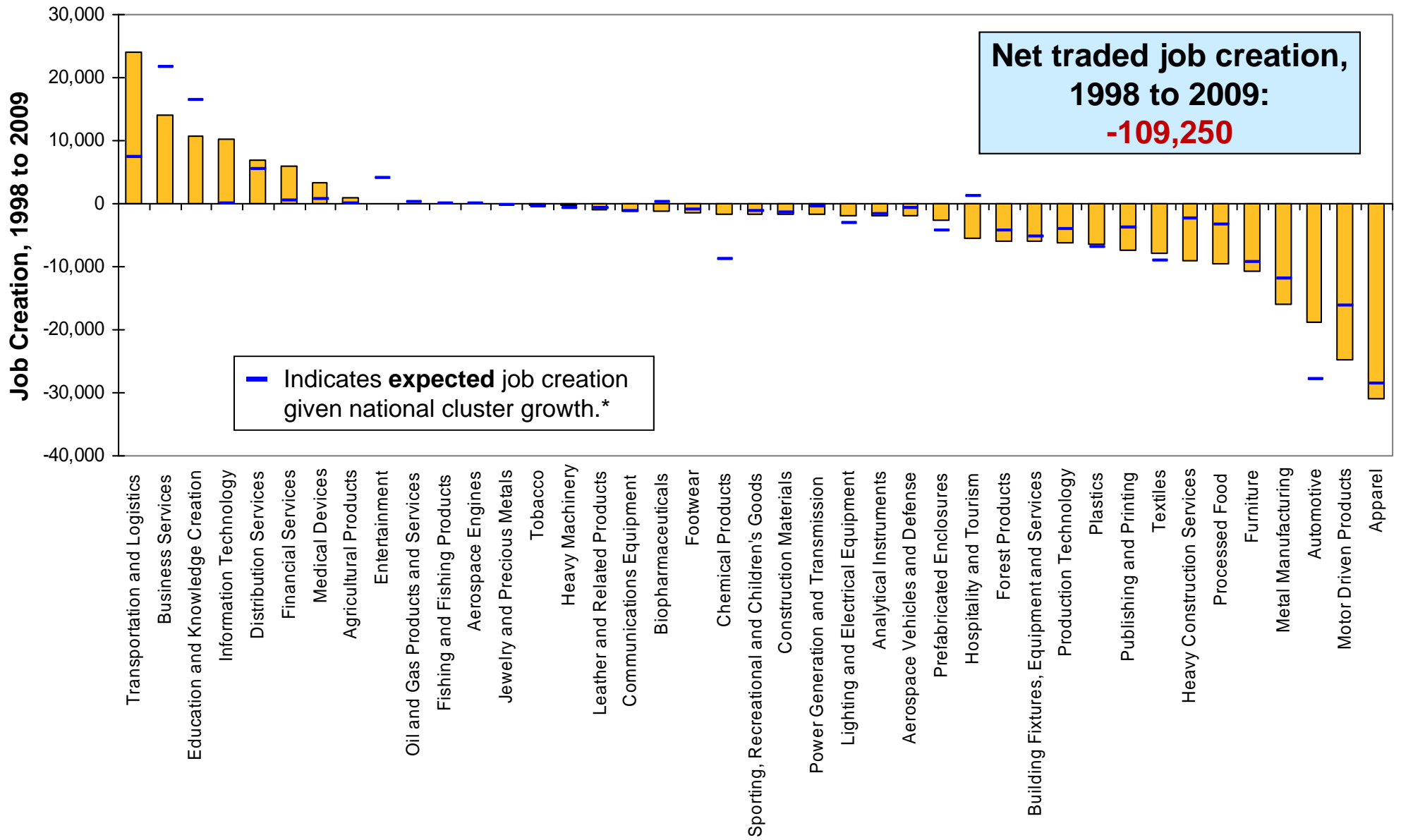


Traded Cluster Composition of the Tennessee Economy (continued)



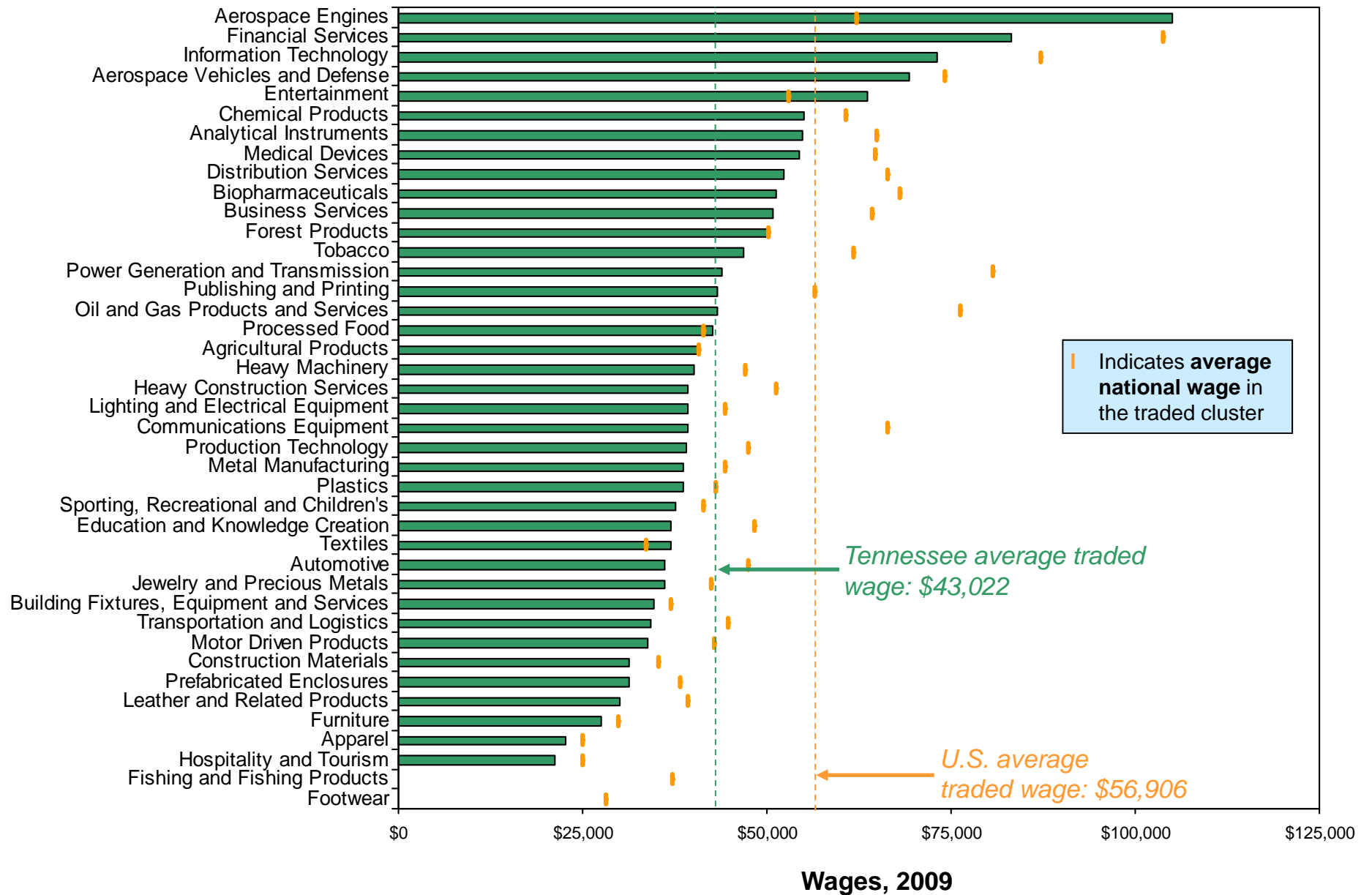
Tennessee Job Creation in Traded Clusters

1998 to 2009



* Percent change in national benchmark times starting regional employment. Overall traded job creation in the state, if it matched national benchmarks, would be -101,659
 Source: Prof. Michael E. Porter, Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School; Richard Bayden, Project Director

Tennessee Wages in Traded Clusters vs. National Benchmarks



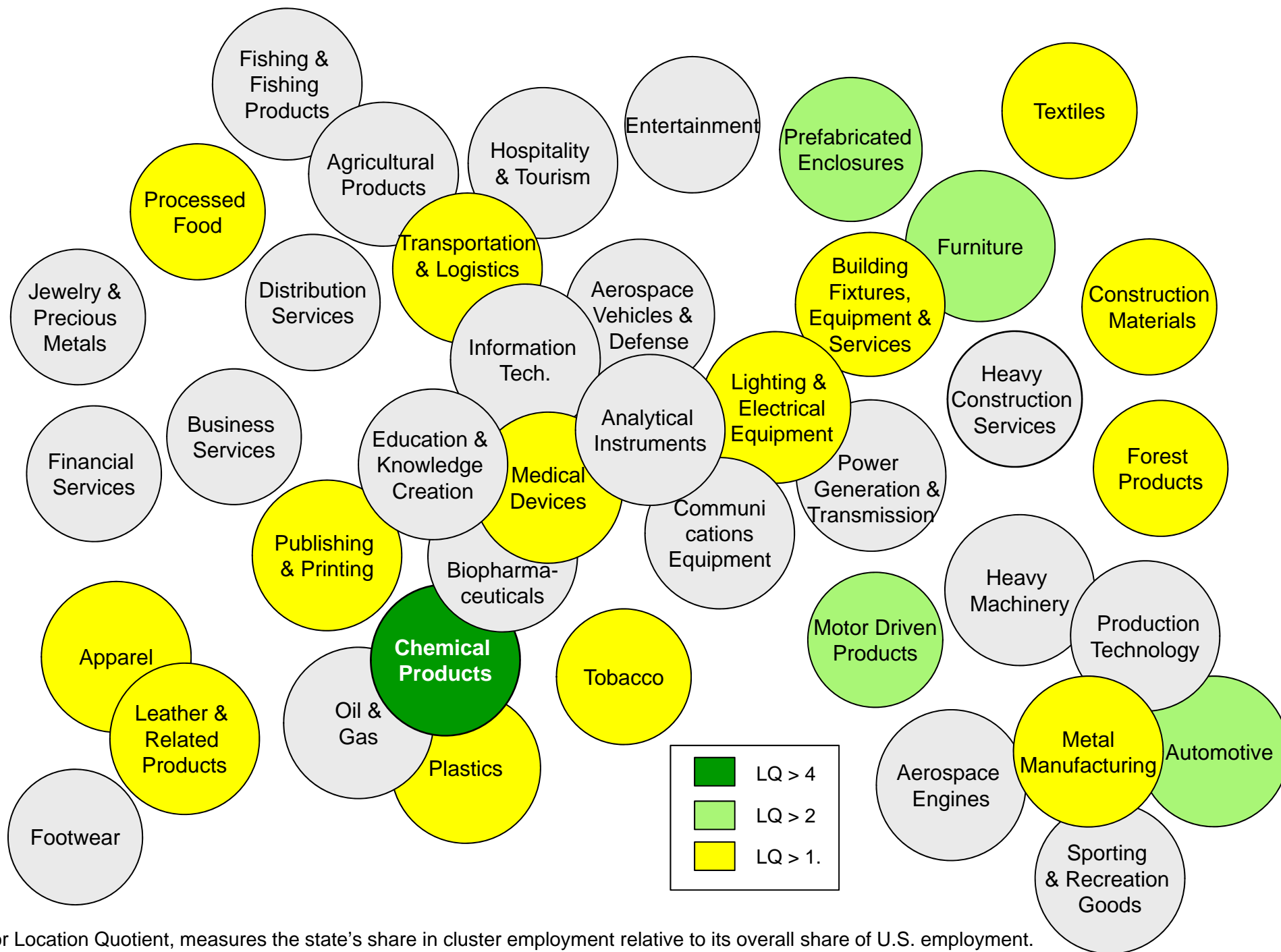
Productivity Depends on How a State Competes, Not What Industries It Competes In

State	State Traded Wage versus National Average	Cluster Mix Effect	Relative Cluster Wage Effect
Connecticut	+27,171	7,028	20,142
New York	+24,102	3,628	20,474
Massachusetts	+16,169	4,391	11,778
New Jersey	+13,535	3,761	9,774
California	+9,573	349	9,224
Maryland	+6,651	2,496	4,155
Washington	+5,652	2,692	2,960
Virginia	+5,319	1,617	3,702
Illinois	+2,658	16	2,642
Colorado	+1,662	2,416	-754
Texas	+352	2,494	-2,142
Delaware	+164	11,060	-10,896
Alaska	-930	-2,417	1,487
Pennsylvania	-3,970	-995	-2,975
Louisiana	-4,280	95	-4,375
Georgia	-5,322	-1,102	-4,220
Minnesota	-5,576	-425	-5,150
New Hampshire	-6,387	374	-6,761
Arizona	-7,021	1,149	-8,169
Kansas	-7,705	2,241	-9,946
Wyoming	-8,057	1,040	-9,097
Michigan	-8,176	-2,544	-5,633
North Carolina	-9,245	-4,330	-4,915
Ohio	-9,284	-2,495	-6,788
Rhode Island	-9,791	-2,290	-7,501

State	State Traded Wage versus National Average	Cluster Mix Effect	Relative Cluster Wage Effect
Oregon	-10,359	-1,304	-9,056
Missouri	-10,427	-1,425	-9,002
Alabama	-10,934	-3,563	-7,371
Florida	-11,007	-1,559	-9,448
Wisconsin	-11,722	-3,516	-8,206
Nebraska	-11,777	241	-12,018
Utah	-11,992	2,072	-14,064
Tennessee	-12,172	-3,156	-9,016
Indiana	-12,554	-4,840	-7,714
Vermont	-13,368	-1,572	-11,796
Oklahoma	-13,572	497	-14,069
Nevada	-14,277	-2,365	-11,911
North Dakota	-14,394	1,004	-15,397
South Carolina	-15,276	-5,067	-10,209
Arkansas	-15,378	-4,560	-10,818
Hawaii	-16,043	-12,555	-3,487
New Mexico	-16,123	-288	-15,835
Kentucky	-16,215	-5,024	-11,191
Maine	-16,379	-968	-15,412
Iowa	-16,606	-2,721	-13,885
West Virginia	-16,645	-3,894	-12,751
Idaho	-18,671	-787	-17,884
Mississippi	-19,942	-5,291	-14,651
Montana	-20,073	-2,259	-17,815
South Dakota	-20,968	289	-21,257

On average, cluster strength is much more important (78.1%) than cluster mix (21.9%) in driving regional performance in the U.S.

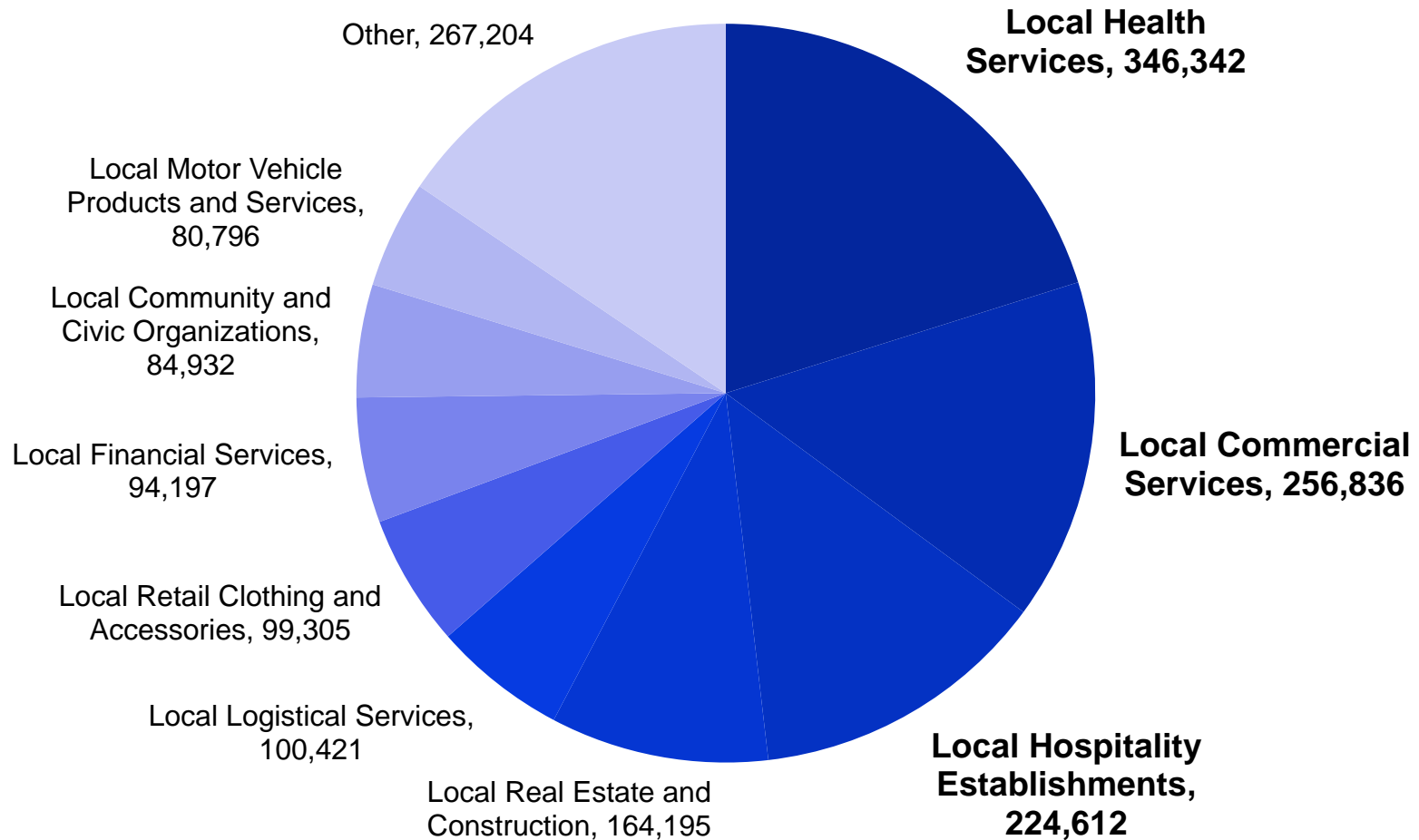
Tennessee Cluster Portfolio, 2009



LQ, or Location Quotient, measures the state's share in cluster employment relative to its overall share of U.S. employment. An LQ > 1 indicates an above average employment share in a cluster.

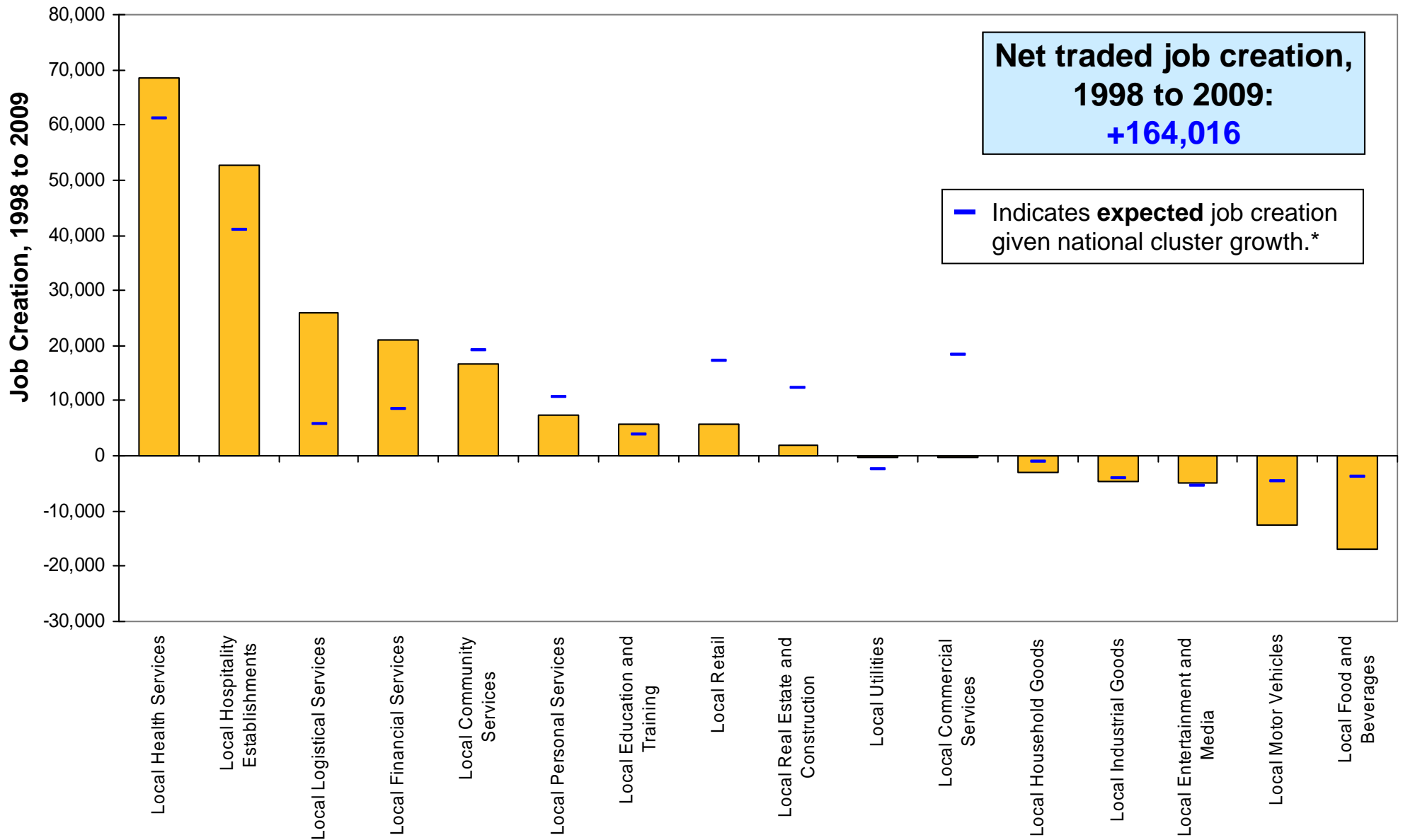
Local Cluster Composition of the Tennessee Economy

Employment



Tennessee Job Creation in Local Clusters

1998 to 2009

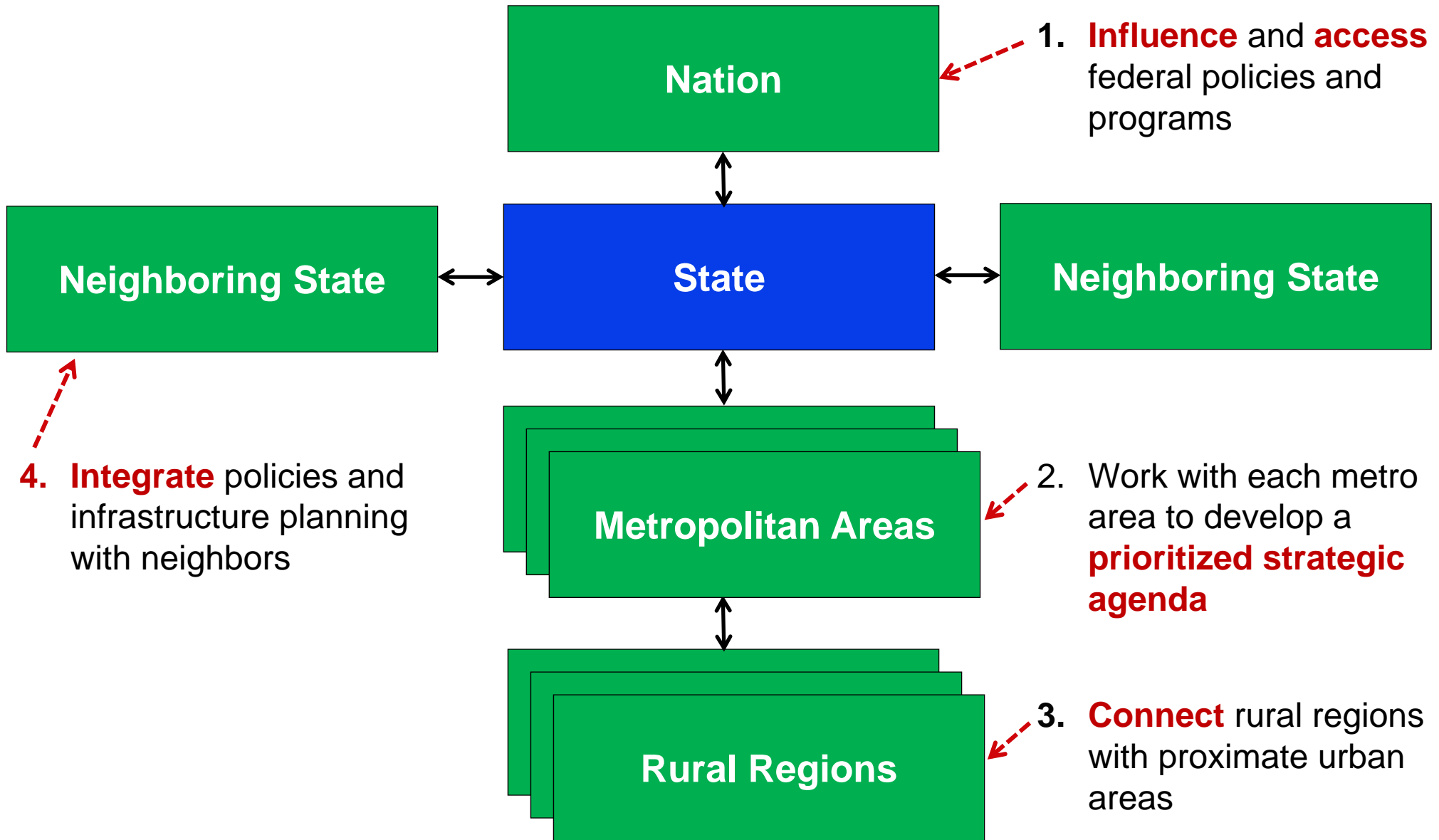


* Percent change in national benchmark times starting regional employment. Overall traded job creation in the state, if it matched national benchmarks, would be -101,659
 Source: Prof. Michael E. Porter, Cluster Mapping Project, Institute for Strategy and Competitiveness, Harvard Business School; Richard Bryden, Project Director.

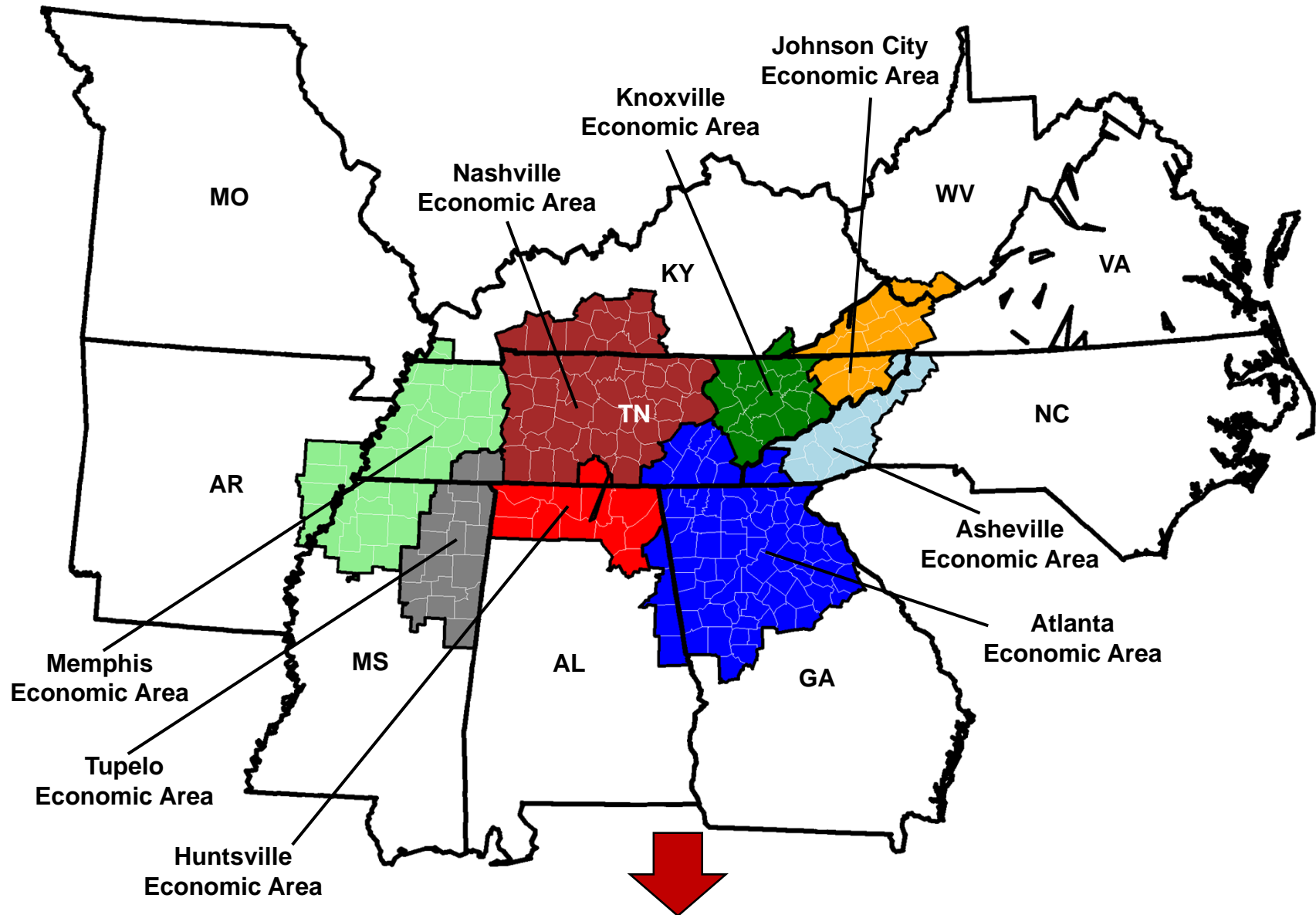
Tennessee Cluster Portfolio Observations

- Few clusters with strong specialization
- Strong position in some clusters that are contracting nationally
- Areas of cluster strength not connected
- Cluster portfolio changing

Geographic and Governmental Influences on Productivity

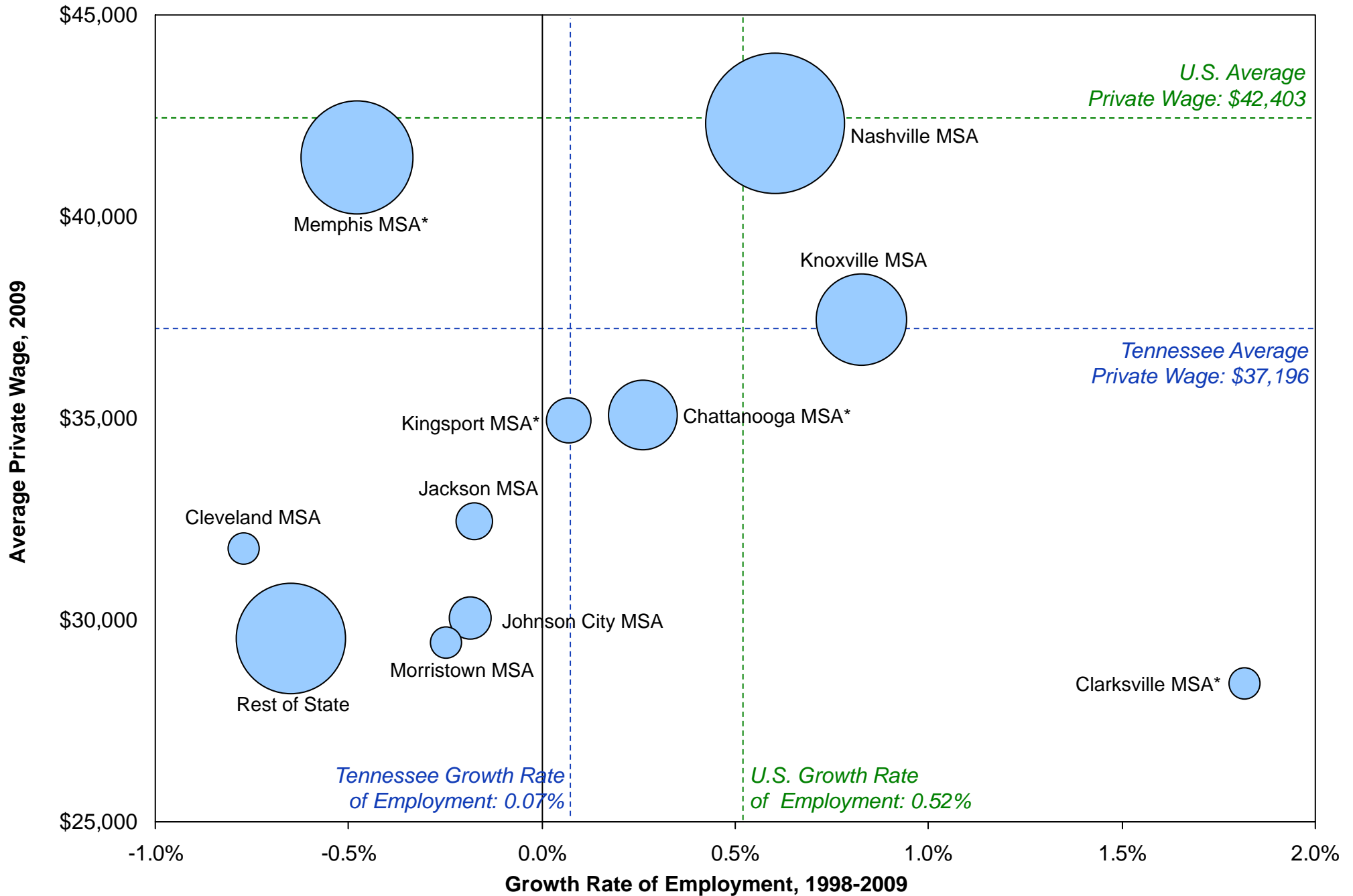


Defining the Appropriate Economic Regions



The economies of states are often an aggregation of distinct economic areas with differing circumstances

Employment Performance in Tennessee Metropolitan Areas



*Tennessee portion only

Source: Census CBP, authors' analysis. Note: "Bubble" size in chart is proportional to employment in 2009.

Effect of Urban and Rural Areas on Average State Wages

U.S. States, 2008

State	Average Overall Wage Difference to U.S.	Metro-Rural Mix	Relative Metro Wage	Relative Rural Wage
New York	15,412	982	14,078	353
Connecticut	10,919	1,013	9,592	315
Massachusetts	10,197	1,674	8,333	190
New Jersey	8,488	1,631	6,765	92
Alaska	6,538	-1,438	5,158	2,818
California	5,584	1,476	3,844	265
Illinois	3,427	411	3,277	-261
Washington	3,013	832	2,122	58
Delaware	2,664	-191	2,895	-40
Maryland	2,201	1,159	775	267
Virginia	1,182	509	709	-36
Minnesota	1,024	-903	2,130	-202
Colorado	539	-110	-66	714
Texas	325	350	-234	209
New Hampshire	-504	-2,856	924	1,428
Pennsylvania	-1,184	262	-1,480	34
Michigan	-1,785	-165	-1,576	-44
Rhode Island	-2,143	1,720	-3,846	-17
Wyoming	-2,478	-6,929	-2,304	6,755
Georgia	-3,136	-120	-2,542	-475
Ohio	-3,925	-224	-3,799	98
Arizona	-3,962	937	-4,897	-2
Oregon	-4,116	-359	-3,505	-251
Wisconsin	-4,336	-910	-3,419	-7
Missouri	-4,540	-573	-3,103	-865

State	Average Overall Wage Difference to U.S.	Metro-Rural Mix	Relative Metro Wage	Relative Rural Wage
Nevada	-4,560	815	-5,752	377
Louisiana	-4,739	-630	-4,764	655
Kansas	-5,371	-2,175	-2,535	-661
North Carolina	-5,505	-1,262	-3,796	-446
Tennessee	-5,992	-538	-4,973	-481
Florida	-6,132	-128	-6,074	70
Indiana	-6,225	-630	-5,665	70
Oklahoma	-6,501	-2,030	-4,496	25
Hawaii	-6,583	-1,892	-4,871	179
Utah	-7,054	169	-7,273	50
Vermont	-7,280	-6,080	-968	-232
Nebraska	-7,419	-2,652	-3,621	-1,146
Alabama	-7,544	-1,206	-5,701	-636
Maine	-7,697	-2,479	-5,243	24
Kentucky	-7,978	-2,179	-5,285	-515
Iowa	-8,096	-3,123	-4,509	-464
New Mexico	-8,531	-1,843	-6,548	-140
South Carolina	-9,137	-609	-8,203	-325
Arkansas	-9,482	-2,207	-6,283	-992
Idaho	-9,766	-1,928	-6,872	-966
North Dakota	-9,973	-2,963	-6,607	-403
West Virginia	-10,074	-3,104	-7,013	43
South Dakota	-10,976	-3,811	-5,475	-1,690
Mississippi	-11,446	-4,569	-5,493	-1,383
Montana	-11,792	-5,468	-5,495	-829

Metro-rural mix: average wage impact from a state's relative proportion of metro and rural regions

Relative metro wage: average wage impact from state relative performance in metro regions

Relative rural wage: average wage impact from state relative performance in rural regions

On average 66.3% of the average wage gap in a state is due to the metro wage effect.

Note: Data are based on private, non-agricultural employment.

Getting to Action

1. Analysis

2. Strategy

**3. Organization
and Tools**

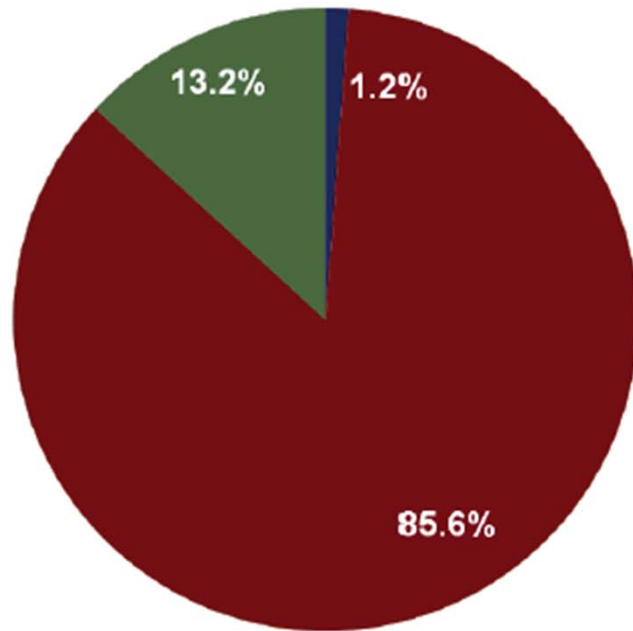
Tennessee's Jobs4TN Plan



Focusing on Existing Businesses

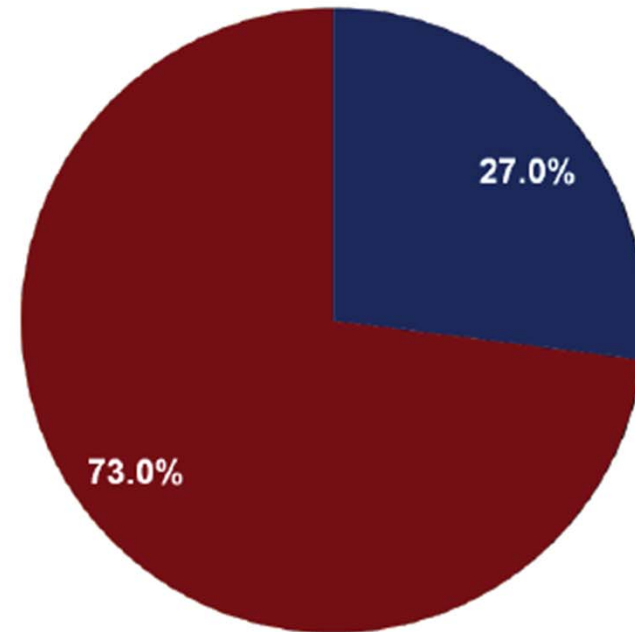
The Jobs4TN Plan

All Jobs



- Relocations to Tennessee
- Expansions of Tennessee Businesses
- Newly Created Businesses

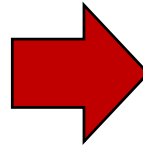
ECD Announced Jobs



- Relocations to Tennessee
- Expansions of Tennessee Businesses

How Should States Compete for Investment?

Tactical (Zero Sum Competition)



Strategic (Positive Sum Competition)

- Focus on attracting **new** investments

- Compete for **every** plant

- Offer **generalized** tax breaks

- Provide **subsidies** to lower / offset business costs

- Every city and sub-region **for itself**

- **Government** drives investment attraction

- Also support greater local investment by **existing** companies

- Reinforce areas of **specialization** and emerging cluster strength

- Provide state support for training, infrastructure, and institutions with **enduring benefits**

- Improve the **efficiency of doing business**

- Harness efficiencies and coordination **across jurisdictions**, especially with neighbors

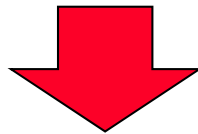
- Government and the private sector **collaborate** to build cluster strength

Prioritizing Key Clusters

The Jobs4TN Plan

Prioritized clusters

- Automotive
- Chemicals
- Transportation and Logistics, Distribution
- Business Services
- Healthcare
- Advanced Manufacturing

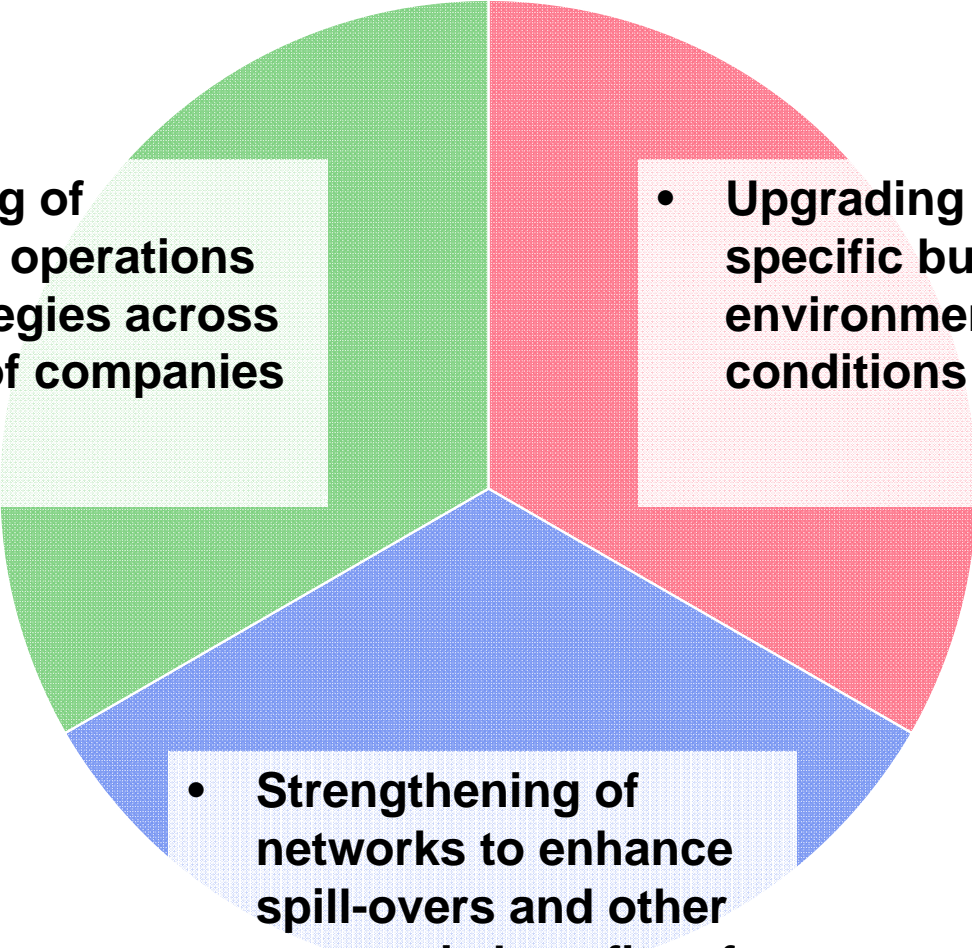


- Selection based on **revealed economic performance** and **presence of strong cluster anchors**

Tools

The Role of Cluster Initiatives

Cluster initiatives are **collaborative activities** by a **group** of companies, public sector entities, and other related institutions with the objective to improve the competitiveness of a group of **interlinked economic activities in a specific geographic region**

- 
- Upgrading of company operations and strategies across a group of companies
 - Upgrading of cluster-specific business environment conditions
 - Strengthening of networks to enhance spill-overs and other economic benefits of clusters

The Role of Government in Cluster Initiatives

Government should

- Support *all* existing and emerging clusters
- Participate
- Enable data collection and dissemination at the cluster level
- Be ready to implement recommendations

Government may

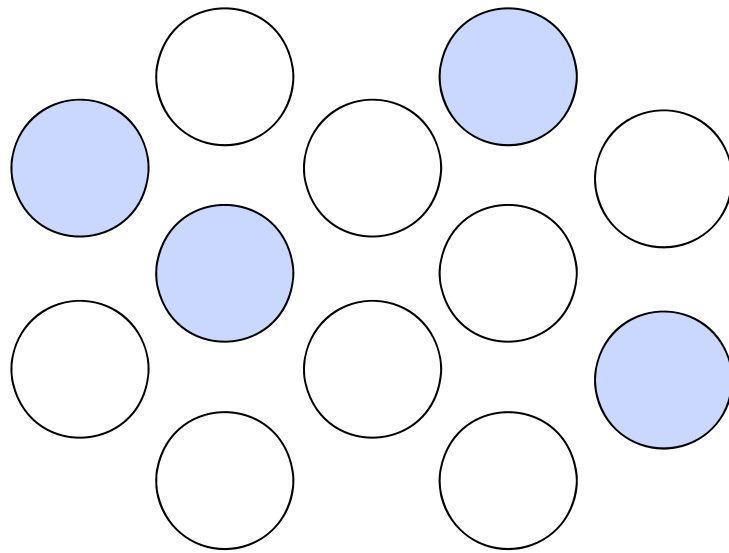
- Initiate/
Convene
- Co-Finance

Government should not

- Pick favored clusters
- Pick favored companies
- Subsidize or distort competition
- Define cluster action priorities

Cluster Policy: Breaking the Glass Ceiling

*From a few successful
cluster islands...*



*...to a more
competitive economy*

- Systematic use of clusters as a **delivery channel** for microeconomic policies
- Active management of regional **cluster portfolios** that engage many clusters and harness cross-cluster linkages
- Design of **feed-back mechanisms** from cluster efforts to general business environment upgrading

Locations will only be able to harness the full potential of cluster efforts, if they match a **bottom-up operational approach** with a **clear top-down concept** for the use of clusters in economic policy

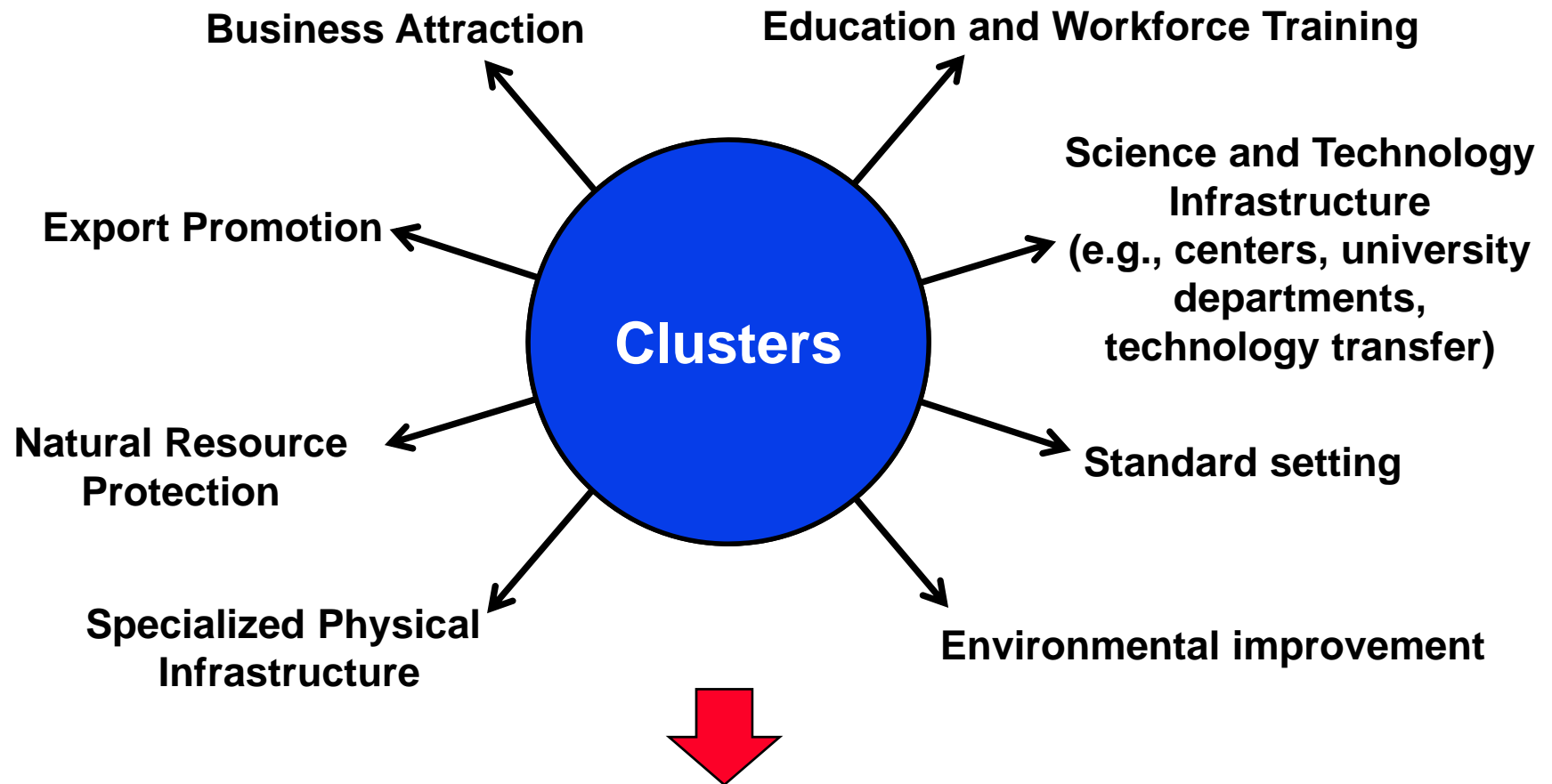
Cluster Portfolio Policy

- **Existing clusters**
 - Already meeting the market test with significant economic activity
- **Emerging clusters**
 - Becoming visible around individual companies and at borders of existing clusters
- **New clusters**
 - Start-ups and chance events create the seeds of emerging clusters



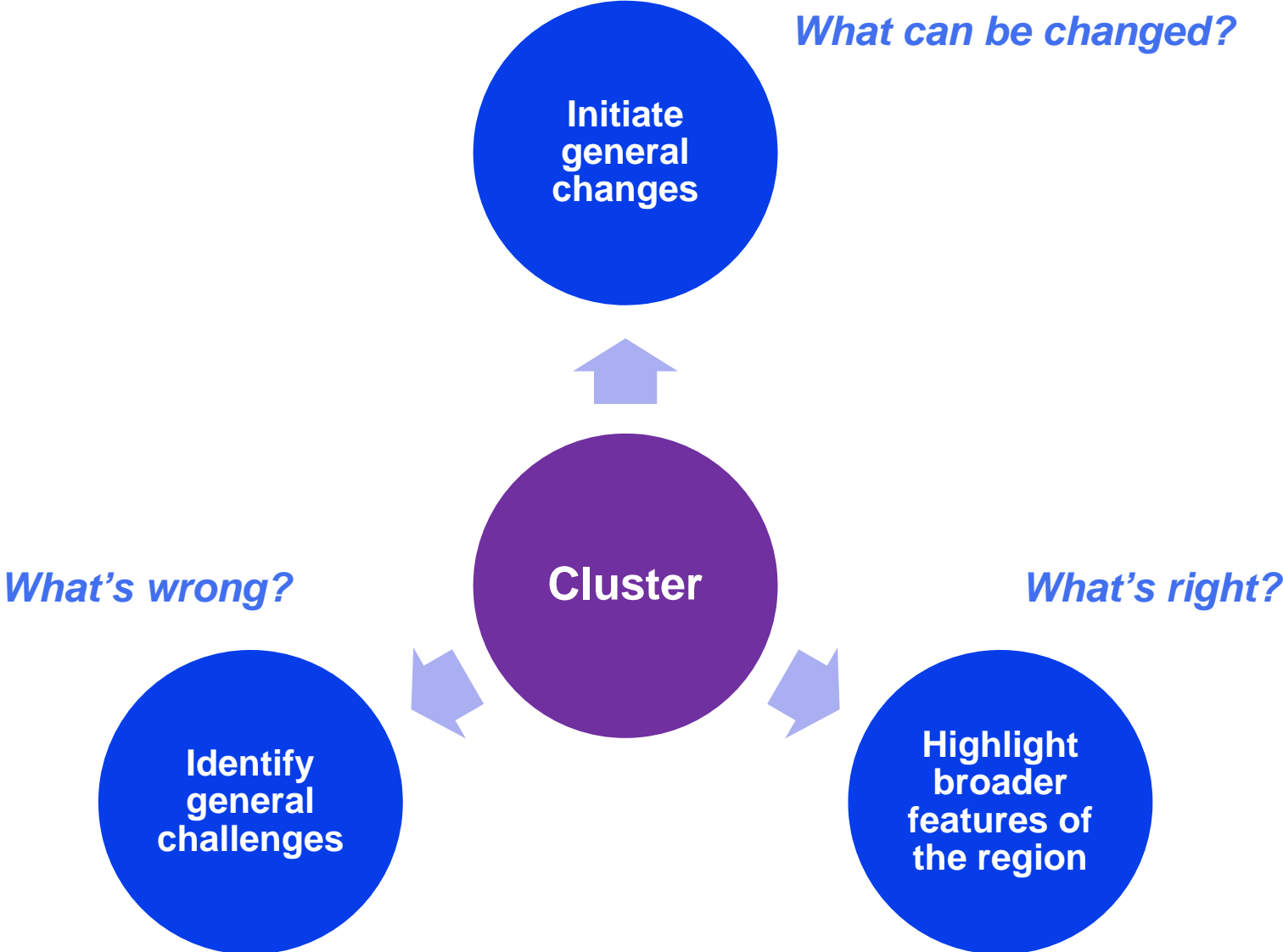
Tools

Organizing Public Policies Around Clusters

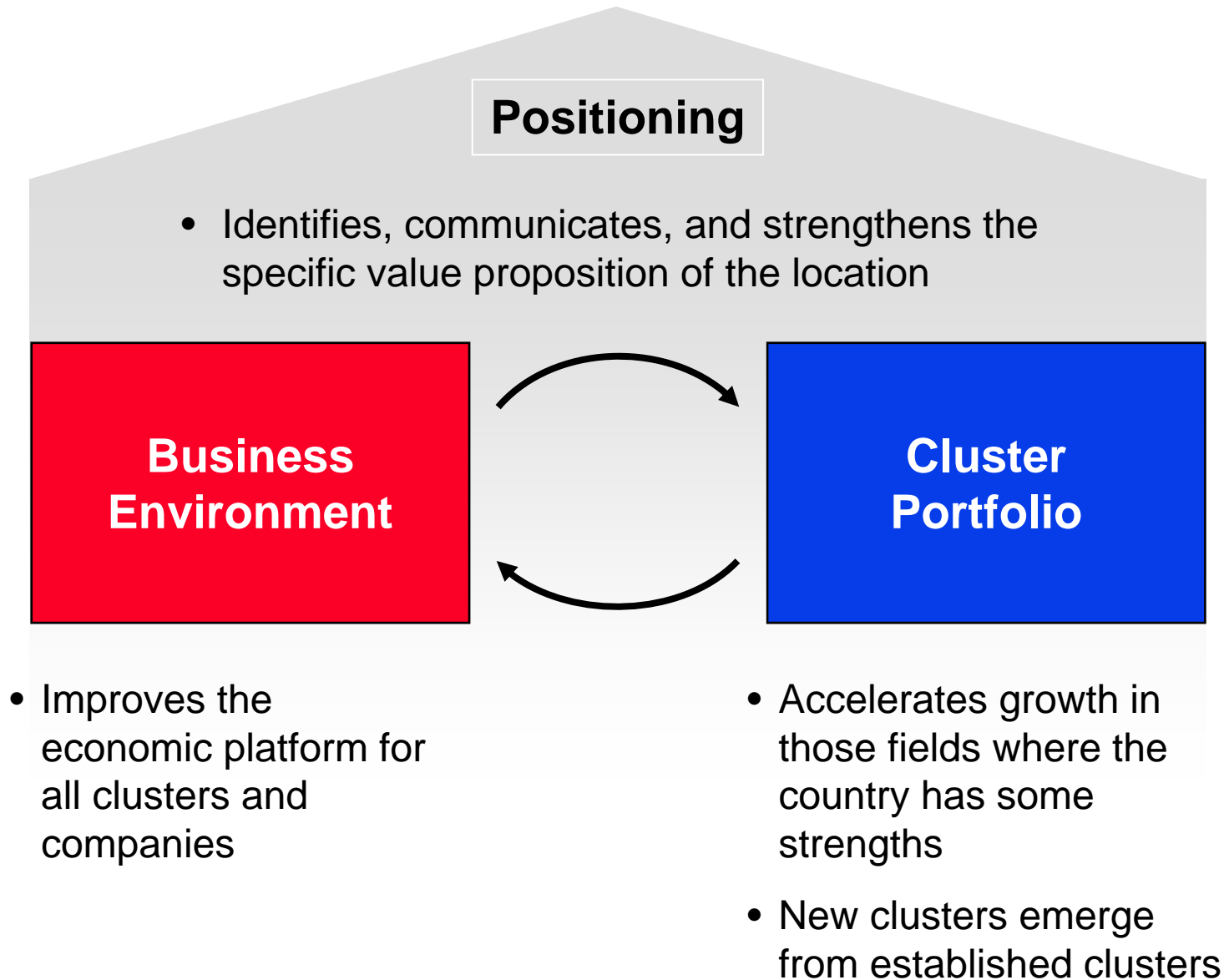


- Clusters provide a framework for **organizing the implementation** of many public policies and public investments directed at economic development to achieve greater effectiveness

Feed-back Mechanisms

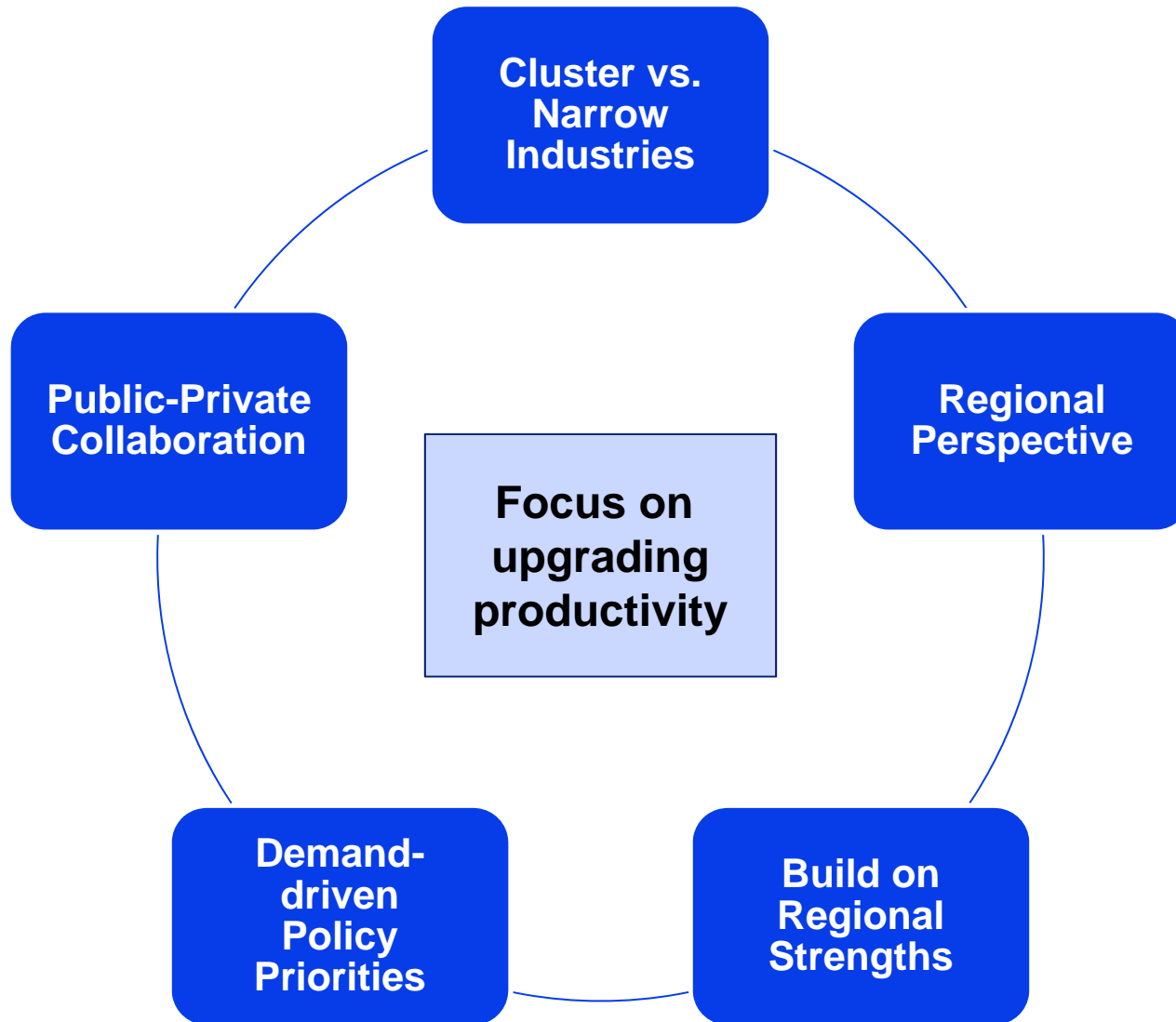


Clusters and Economic Strategy



Tools

What is Different about Cluster-Based Economic Policy?

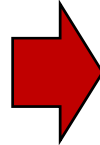


Organization

Public Private Engagement

Old Model

- **Government** drives economic development through policy decisions and incentives



New Model

- Economic development is a **collaborative process** involving government at multiple levels, companies, teaching and research institutions, and private sector organizations

- Competitiveness is the result of both **top-down** and **bottom-up processes** in which many companies and institutions take responsibility
- A **dedicated institutional structure**, like a competitiveness council, can play an important role in enhancing impact and sustainability of collaboration

Issues for Discussion

- Analysis of **business environment conditions** across the state
- Design of the **cluster engagement program**
- Framework for collaboration **within the state** and **across state borders**
- Institutional structure for **public private collaboration**
- Tracking **policy impact**