

# Southwestern Pennsylvania Community Audit A Project of the Three Rivers WIB and Partner WIBs

## Draft Cluster Performance Report Monitoring “Bell-Weather” Industries

Prepared by:  
**Steel Valley Authority**

### Summary

---

The first section of this report reviewed information gathered through regional industry cluster studies and industry sector analyses, in order to develop a better understanding of how the industries are organized. This section proposes an ongoing “foundation clusters” methodological approach that enables the Three Rivers Workforce Investment Board, et al, and their SW Pennsylvania Community Audit Project to track key industry sector/cluster trends. A consistent cluster framework — and we are suggesting the Northeast Ohio foundational approach – needs to be used throughout the cluster initiatives of workforce development and economic development organizations in the SWPA region.

The second section of this report provides a starting point for a regional monitoring system to identify emerging trends that affect skill demands. By linking key “bellweather industry” tracking tools to an understandable set of industry clusters, the report hopes to provide an ongoing monitoring system that is easy to understand. While most industries suffer employment declines in economic downturns, it is not the case that all industry sectors bounce back once recovery has started. A regional “cluster performance” report would facilitate employment and training policy decisions to invest in regional opportunities, and better determine transition strategies for workers in declining sectors.

The Bellweather Industries Report made the following observations:

- **Cluster Studies Should Facilitate Industry/Employment Partnerships:** An industry partnership, according to the Pennsylvania Department of Labor and Industry, is a multi-employer collaborative effort that brings together management and labor or employee representatives around the common purpose of improving the competitiveness of a cluster of companies/organizations that share similar products or services, critical human resource needs and/or retention/recruitment problems. The purpose of supporting existing partnerships or organizing new ones is to concentrate attention and resources on particular clusters of industries that provide good wages and benefits, have the greatest potential for economic growth, and/or face the serious challenges to growth or retention. Having a cluster analysis framework that consistently and more clearly recognizes the inter-relationships among and between clusters would facilitate greatly the development of those partnerships.

- **Re-affirming the Role and Potential for Drivers:** In the Pittsburgh region, there exists the potential to link traditional companies, local “driver” firms, with emerging and faster growing sectors. These driver firms tend to spin-off more jobs than do those in the service sectors, and jobs with driver firms pay better wages and provide more benefits. Additionally, re-focusing the relationship between manufacturing and emerging industries could generate great benefits, such as making the region a leader in the environmental industries that are becoming more prominent due to the energy crises: renewable energy areas such as fuel cells, wind power turbine manufacture, solar cell manufacture, and mass transit strategies such as high speed rail and maglev transit, etc. Achieving these integrated approaches requires a greater level of support for traditional manufacturing firms, their labor unions, and their workers, and the improvement of relationships between firms.
- **Supporting Supplier Networks:** In many regions of the country, supplier networks are being formed around OEMs (original equipment manufacturers). States and local WIBs can support the development of strong supply networks by providing affordable, customized training to the OEM suppliers, as well as other economic development supports. As there is new interest in Pennsylvania in developing and supporting supply chains, cluster studies need to be sub-industry specific in order to provide critical data needs to developing networks.
- **Confusing and Contradictory Research:** Michael Porter’s cluster analysis of the region resulted in his criticism that the region had generated too many regional economic analyses and studies over the years. The eight clusters studies reviewed in this report indicate that there is no consistency among the studies. It is difficult for industry, labor, workforce, education and economic development leaders, along with policy leaders in general, to develop consistent and forward-looking implementation strategies to address regional action plans if the plans themselves change every year.
- **Assigning Proper Weight and Value to Educating/Training Existing Workers:** When the biomedical and technology sector and its employment, sometimes estimated at no more than 800 in the region, is assigned the same weight and value as other sectors with tens of thousands of working families in the region, the approach skews the reality. There is, acknowledged by most, tremendous potential in the bio sector. However, incumbent worker training, educational and vocational upgrading, and new worker recruiting strategies would be better targeted at the workforce bases in those larger clusters, especially those that are foundational sectors. As Porter explained, there are many workers who work in the driver/foundation industries who could be trained to work in emerging industries. It is also important, as a training regime, to focus on improving the work skills, knowledge and talents of workers in existing industries so as to make those existing sectors more productive. The continuing regional focus on importing workers might be better placed on “transitioning” workers from declining or stagnant industry clusters to faster growing ones.
- **Synergy with the Transition to NAICS:** The Northeast Ohio approach feeds into suggestions made to the Three Rivers Workforce Investment Board by the Pennsylvania Department of

Labor and Industry's Center for Workforce Information and Analysis. As the North American Industry Classification System (NAICS) replaces the Standard Industry Classification (SIC) system, a stronger tool will be available for analyzing industries and trends. Under SIC, manufacturing support employment such as human resources, shipping, etc., was included in manufacturing employment. Under NAICS, the support employment is categorized outside of the primary manufacturing function. Therefore, a more accurate picture of job growth and decline of production work, particularly with regards to the outsourcing of a support function. The NAICS is production-based and reflects today's economy, including the emergence and growth of the service sector in new and advanced technologies. However, there will be a major problem with a lack of ability to track many industrial sectors due to the change, a negative impact that may not be well understood as of yet.

- **Suggestions for Maintaining a Cluster Monitoring System:** The region should establish a Cluster Monitoring System that tracks development in various clusters that are important to the local economy. Suggested report formats and sources are provided in the second section of this report. The report maintains that many of the tracking tools could be provided by the WIB(s), with some of the information that is more sensitive in nature provided by outside consultants. A number of key industry sector tracking sources are public and easily tracked; others can be purchased relatively inexpensively.

## "Driver" Industry Cluster Methodology

---

Cluster studies utilize various approaches. It is important to follow traditional "best practices" in cluster and industry analysis: focusing on traded industries, input-output measures, location quotients, local competitiveness factors, and other ways of analyzing industries that are not only useful, but are also meaningful in drawing comparisons. This section will examine a regional cluster methodology in Northeast Ohio that provides a broader framework of understanding.

Northeastern Ohio took an integrated approach in studying the needs of its competitive clusters of industries. Developed by the Northeast Ohio Regional Economic Development Strategies Initiative, a partnership of the region's four leading economic development organizations, the research for the project was developed by Collaborative Economics of San Jose, CA; the Urban Center, Levin College of Urban Affairs, at Cleveland State University; and Economic Development Research Division of the Greater Cleveland Growth Association. The clusters project was launched in 1996. The clusters were defined as **driver industries – foundational and capstone industries; emerging industries; and local-serving industries.**

The project was "initiated on the premise that the region's economic performance, in terms of the quality of jobs, quantity of out-of-region exports, and generation of wealth and income, is based on a portfolio of industries whose competitive strength is reinforced by a network of customers, suppliers and resources."<sup>1</sup> While Phase I in 1997 began identifying the driver and emerging clusters, Phase II in 1998 began building broad cluster membership bases and implementing a strategic plan to address six "challenges" faced by all the clusters:

---

<sup>1</sup> Northeast Ohio Regional Economic Development Strategies Initiative, "Accelerating Regional Growth", Clusters Project June 1998 and 2000-2001 Update.

- Access to capital
- Image of region
- Collaboration/networking
- Infrastructure/government support
- Technology access/transfer
- Workforce quality/quantity

### **What are driver industries, etc.?**

**Driver** industries are those that fuel the regional economy and its growth due to the quantity of exports out of the region, employment concentration, and other factors. Drivers are further defined as:

- **Foundation Drivers**, because they supply materials to a broad range of the region's economy, and
- **Capstone Drivers**, clusters that are close to the end-user, or consumer.

**Emerging** industries offer substantial growth opportunities based on the existing companies and resources in the region, as well as global industry growth; and

**Local-serving** industries meet the local demand for products and services of the companies and general population of the region.

The project conducted cluster scans, similar to those in the Pittsburgh region, reviewing cluster sizes in employment and payrolls, employment specialization (share, etc.), relative productivity, industry knowledge, etc. They importantly described a continuum of intra-cluster relationships, including:

- Final markets;
- Export products and services components;
- Support and supplier components; and,
- Specialized community infrastructure.

Driver industries were identified as:

- Metalworking
- Plastic products/polymers
- Chemicals
- Motor vehicles and equipment
- Insurance

Metalworking, and Plastic products and chemicals (PPC) were further identified as foundation clusters because they supply materials to a broad range of the region's economy.

Motor vehicles and equipment, and Insurance were designated as capstone clusters—industries that are close to the end-user, or consumer. In addition, PPC is a capstone cluster as well because it embraces materials suppliers along with end-product industries.

### Emerging industries were identified as:

- Biomedical
- Instruments and controls
- Information and technology

The project focused on two emerging industry clusters—Biomedical, and Instruments and Controls—where, with encouragement and leadership, Northeast Ohio can develop a competitive advantage. These two clusters also have strong links with the foundation and capstone clusters. By leveraging these linkages and their regional assets, these two emerging clusters could become drivers in the (regional) economy.

An intense level of integration between clusters through a shared core competency—materials processing—is a key finding of the research. Companies in the metalworking cluster, along with firms in plastic products and chemicals cluster, center their operations on the region’s core competency. And, the other clusters and an array of local-servicing industries are integrated through this common core competency as well. While the skills, technology and output resident in these core competency industries will continue to evolve over time, the materials processing base likely will not. Therefore, success in this region depends on the strength of the businesses within its core competency and their ability to respond to dynamic forces in the global economy.

## Considering the Driver Methodology for the Pittsburgh Region

---

The Northeast Ohio cluster study provides a more consistent approach in defining the clusters and showing the various relationships both among clusters and within clusters. The Northeast Ohio cluster studies do a better job of providing a historical context for the evolution of base industries, and the emergence of new industries from those foundations. The Pittsburgh area might greatly benefit from a similar approach.

Thus, while recent Pittsburgh cluster researchers have “allowed” manufacturing industries to regain their prominence in strategic industry studies, policy leaders in the region wrongly declared it “dead” in the 1980s. It is clear from a review of the Northeast Ohio Industry Clusters Studies that policy makers have consistently posited the manufacturing base at a foundational level in their regional economy. It is also clear that manufacturing and metalworking in particular are viewed (and are) a critical component in the value chain for such emerging industries as biotechnology and instruments and controls, for example.

A review of the Pittsburgh region cluster assessments provides a few points toward further clarity:

- The current amalgamation of all manufacturing into one cluster makes the ability to specialize cluster implementation strategies more difficult.
- It might be more useful to focus on the drivers within manufacturing rather than “silo”-ing in on high performance manufacturing or advanced manufacturing.
- To the degree that emerging industries are viable due to regional service bases, it would be helpful to more consistently identify those foundations.

The five existing Pittsburgh clusters might be better understood after dis-aggregating the driver, emerging and local serving cluster sectors. Further breakdowns into foundation and capstone drivers, emerging and local-serving clusters would better distinguish, to some degree, the value and supply chains and servicing and other relationships among clusters. It would also clarify the development of newer industries from those with a strong historic base. If the health/hospitals sector should be viewed as a foundation capstone, bio-medical is best viewed as an emerging sector that feeds off of health care/hospitals and the advanced materials clusters alike.

The following page provides a “re-shuffling” of several years of clusters studies in the region, as an approach that more resembles the Northeast Ohio driver-foundation-emerging clusters model. Below, the term “**mega-foundation**” is utilized as a device to signify the industry and economic clusters in the Pittsburgh region that are viewed as the most significant. These are then separated into foundation driver and capstone, emerging and local-serving clusters.

There is not a unitary boilerplate approach to clusters studies. Some may argue with our inclination to separate the universities/research centers from the rest of education (K-12, etc.), for example. The point is not for this particular approach to get all the details right, for there will be surely a plethora of strategic industry/cluster research projects to follow. Future studies should, however, provide a consistent framework that highlights the relationships among/between clusters.

## Utilizing Foundation Driver Clusters Framework for SWPA Industries

---

### Mega-Foundations:

- Manufacturing
- Health care
- Financial services
- Universities/research centers
- Government services
- Interstate/international transportation

### Foundation Drivers:

- Metalworking and aluminum
- Advanced materials (chemicals, plastics and allied products)
- Education and training

### Capstone Drivers:

- Health care
- Financial services
- Transportation equipment (including aerospace)
- Industrial machinery, computers and equipment
- Electrical and electronic equipment
- Food processing
- Energy production and distribution/utilities
- Interstate/international/local transportation

### Emerging Clusters:

- Information technology and communications
- Biomedical/biotechnology
- Instruments and control devices
- Environmental/energy technology
- Other advanced and high performing sub-clusters

### Local-Serving Clusters:

- Business services
- Education/knowledge
- Hospitality, tourism and retail trade
- Trade, distribution and logistics
- Construction and construction products
- Printing and publishing
- Social services and personal care (non-medical)

## **Cluster Performance Monitoring System**

---

Prescriptions for economic and workforce development that were developed in the boom years of the 1990s may no longer apply. The region needs to re-think its long-term economic plans since the “new economy” sector, where so many hopes were pinned, collapsed. While many of the new economy sectors may rebound, many forecasters are now predicting slower growth overall for the next several years. Instead of “smokestack-” or “chip”-chasing, the region may need place more attention to strengthening its existing economic, public works and “human capital” infrastructure, and broadening the focus that has, to date, been lavished on downtown real estate, entertainment and amenities.

Businesses in the U.S. and in the region have been attempting to navigate these recent changes internationally and domestically. Nonetheless, the volatility of international conditions and the markets have made it increasingly difficult to monitor the economy. While industry sectors nationally are recovering profitability-wise, their employment growth projections look bleak. It is a fair question to ask if there will be a normal jobs recovery in the foreseeable future.

This section will begin to point towards a useful and constructive industry cluster/firm monitoring system that might be developed in the region. This report will not provide substantive “content” to the suggested system, so much as to propose outlines for a system that could be maintained by the Three Rivers Workforce Investment Board, et al, or supplemented with outside assistance. For workforce and economic development policymakers, it will be important to be able to “drill down” in order to obtain and maintain a more accurate picture of sector and cluster performance.

This section of the report will:

- Determine what signals are most important for indicating potential changes in labor demands, and provide a brief explanation as to why they are important.
- Develop a “hands-on” system to monitor those signals, with access to key data sources and relevant Internet sites.

- Provide the ability to verify and obtain additional information when the monitoring system indicates that positive or negative changes may be on the horizon for specific firm/industry.
- Indicate where the ongoing Community Audit Project would have to obtain appropriate access protocols from institutions.
- Propose a series of “industry” alerts, positive and negative, that would allow interventions in local industries in a way that is proactive and that mitigates economic harm.

## Tracking Existing Economic and Employment Information and Resources

---

Besides local sources for economic research cited above, there are a number of important existing industry tracking sources that are in the public domain or that can be purchased easily and inexpensively. Links to these resources are provided below.

### Monitoring the Economy:

#### [Economy.com](#)

A wide variety of economic news is always available at Economy.com, including regular scans of industry sectors and regional outlooks. Their Data & Tools section displays leading indicators. There is a regularly updated economic profile for Pittsburgh, including labor markets, demographics, income and real estate. There is a modest fee.

#### [Bureau of Economic Analysis](#)

Bureau of Economic Analysis in the U.S. Department of Commerce has national and regional economic figures available.

#### [Bureau of Labor Statistics](#)

DOL's BLS is a federal institute that collects and analyzes a broad range of information related to labor markets, GDP, inflation, average hourly earnings, worker safety and health, productivity, and economic analysis.

#### [Center for Workforce Information and Analysis](#)

The Center for Workforce Information and Analysis of the Pennsylvania Department of Labor and Industry provides monthly updates for employment and unemployment figures by region and local area.

#### [Federal Reserve Bank of Cleveland Economic Research & Data](#)

The Research Department models complex economic systems, analyzes data, and evaluates economic information to support the Federal Reserve Bank of Cleveland's monetary policy, supervisory, and payments system responsibilities. The department produces academically respected economic research and monitors regional and national economic trends.

#### [Dun and Bradstreet](#)

D&B is the leading provider of business information for credit, marketing, purchasing, and receivables management decisions worldwide. A fee-based service, D&B can provide information on the conditions on businesses in specific sectors and regions, including "stress tests", which identify potential firms with financial problems.

[www.keystoneresearch.org](http://www.keystoneresearch.org) A leading source of independent analysis of the state's economy and public policy.

### Monitoring Employment/Unemployment Changes:

#### [Allegheny County Unemployment/Employment \(annual statistics\)](#)

#### [Pennsylvania Department of Labor & Industry \(PDLI\)](#)

#### [Employment/Unemployment statistics for Pittsburgh Metro Region \(PDLI\)](#)

#### [United States Department of Labor \(USDOL\)](#)

#### [Civilian labor force and unemployment by state and metropolitan area \(USDOL\)](#)

#### [United States Department of Labor \(USDOL\)-customizable data](#)

#### [Pittsburgh Metropolitan Region](#)



## Scan of National and Regional Cluster Indicators

---

The scan could indicate leading economic/employment news of the month, and cite employment and unemployment figures and changes from month, quarter and year prior. The review could provide one-two key graphs in this section. The scan could then review key indicators of national and regional growth and employment. Where regional indicators are available, they could be displayed in a chart across from national numbers. The report should explain the impact on the economy and employment, and should provide specific references to significant changes. For example, if there has been a change in trade numbers, and a key national or international policy decision affected the change, note the decision. If vehicle sales decline dramatically, note the changes to auto firms or the motor vehicle sector.

### Growth and Decline Indicators:

- Gross domestic product (GDP): Standard economic products report; expresses GDP as the total value of final goods and services produced by all production units in a country within a certain period (usually in one year period). The GDP has been fluctuating dramatically since the recession began.
- Gross national product (GNP): The sum of Gross Domestic Product and the net factor income from abroad. The net income from abroad constitutes all income of production factors (labor and capital) owned by residents and accrued from abroad minus similar payments made to nonresidents in abroad. This measure provides a clearer sense of the impact of imports, which have been rising disproportionately the past several years.
- Regional domestic product (RDP): Domestic product on a regional level.
- Price/Earnings Ratios: Current stock prices divided by trailing annual earnings per share or expected annual earnings per share. Assume XYZ Co. sells for \$25.50 per share and has earned \$2.55 per share this year;  $\$25.50 = 10 \text{ times } \$2.55$ . XYZ stock sells for ten times earnings. P/E ratios over 18-20 (for public companies) can be a sign of inflated earnings projections. Average P/E ratios for key industry sectors would be a useful monitoring tool; extremely high P/E ratios in the last half of the 1990s were a predictor and causation factor to the economic collapse.
- Capital expenditures: Amount used during a particular period to acquire or improve long-term assets such as property, plant, or equipment. Key indicator of economic growth. CapEx declined significantly during the recession and its aftermath.
- Producer price index: Index measuring changes in wholesale prices, published by the US Bureau of Labor Statistics every month.
- Consumer price index: The CPI, as it is called, measures the prices of consumer goods and services and is a measure of the pace of US inflation, also published by US DOL. Recent price trends were falling, as the Federal Reserve expressed fears of deflation.
- Productivity trends: The amount of output per unit of input, such as the quantity of a product produced per hour of capital employed. Productivity has been increasing sharply recently, as companies have produced more product, but unfortunately with fewer workers. Earlier, productivity had declined due to the recession.
- Industrial production: Measures the change in U.S. manufacturing, mining and electric and gas utilities. Output refers to physical quantity of items produced.
- Purchasing managers index and factory orders: Includes the dollar volume of new orders, shipments, unfilled orders and inventories reported by domestic manufacturers.
- Business Inventories: Comparative trends of sales and inventories, reflected in the inventory-to-sales ratio (two month lag).
- Senior Loan Officers Opinion Survey: Survey of approximately sixty large banks and 24 U.S. branches and agencies of foreign banks. The survey covers changes in the standards and terms of the bank's lending and the state of business and household demand for loans (quarterly).

- Exports and imports: The measure of trade in goods and services. This measure should include current account balance, the net flow of goods, services, and unilateral transactions (gifts) between countries. A chronically high negative current account balance is a negative drain on the U.S. economy over time.
- Bankruptcy trends, business and personal: Inability to pay debts. In the bankruptcy of a publicly owned entity, the ownership of the firm's assets is transferred from the stockholders to the bondholders. There have been recent increases to historic highs in personal bankruptcies, but drop in business defaults.

### More Regionally:

- Steel shipments: The total tonnage/prices of steel shipped. If steel shipments are stagnating in relative terms (to steel imports), this is a good indicator of a key sector to the region.
- Vehicle sales: Regional information available from automotive associations. Trend in sales has large impact on a number of sectors and firms.
- Housing starts: Reports available from census bureau and local permit agencies. Trends in housing starts will have impact on a number of other sectors, including construction materials. Comments on types of units and impacts of interest rates on mortgages, etc.
- Residential and nonresidential construction activity: construction contracts in millions.
- Retail sales: Comment on sales by key sectors, and relationship to underlying factors.
- Shipments by air/rail/waterways: Important trend indicator for regional business activity.
- Pittsburgh International Airport activity: millions of passengers, also shown by destination termination
- Health care expenditures: in millions.

### Employment Indicators:

- Total workers: Available through Labor Department sources.
- Total employment: Available through Labor Department sources.
- Labor force participation rate: Available through Labor Department sources.
- Mix of clusters in regional economy, by employment: Extrapolated by Labor Department sources.
- Job openings by industry cluster: Career center extrapolation.
- Unemployment rate trends: Available through Labor Department sources.
- Job creation trends: Job creation overall and by cluster.
- Average wages: Payroll per person.
- Wage growth trends: Trends in income, earnings and wages will provide good assessment of the health of local economy. Wage stagnation or decline is an indication that the economy, despite much economic activity, is not creating opportunities for the region's workforce, compared to other regions that have witnessed wage growth.
- Average earnings, overall and by industry cluster
- Mix of full-time and part-time employment, overall and by industry cluster
- % of participants receiving benefits from employer
- Wait time to fill skilled positions, especially in strategic clusters
- Number of jobs unfilled for six months, by clusters
- Manufacturing activity: The Bureau of Labor Market information reports on manufacturing employment trends and total hours worked for the nation and region. The new reports utilize the North American Industry Classification System (NAICS).
- Plant closings, mass layoffs: Reports on business failure and decline, and impact on employment, are available through the Department of Labor.<sup>2</sup>

---

<sup>2</sup> Some information adapted from "Possible Economic Development Measures", Lancaster County Workforce Investment Board, Lancaster, Pa.

# Bellweather Indicators by Cluster

---

This section could have a summary of key developments within regional industry clusters. Where appropriate, national developments that affect local clusters should be noted. This review would also include a forecast of cluster trends, with a simple letter grade of A growing, B for staying even, C for declining. While the following indicators are for Mega-Foundations, the study will also include the drivers, emerging and local serving clusters.

## Mega-Foundations

All of the clusters would be book-marked by the following “boilerplate” trends, where appropriate. A few of the indicators are more specific to production.

- Gross regional product, by cluster
- Gross regional product by employee, by cluster
- Employment trends, by cluster
- Wage and fringe trends, by cluster
- Labor productivity trends, by cluster
- Capital investment trends, by cluster
- Equipment performance trends, by cluster
- Value of shipments/value added, by cluster
- Energy cost trends, by cluster
- Value added/content of sales trends, by cluster
- Number of companies locating in region, by cluster
- Business start-ups, new patents, new IPOs, etc., by cluster
- Net change in LQ/competitiveness/exports in traded industries, by cluster
- Number of companies experiencing mass layoffs, by cluster

## Manufacturing

- Regional industrial production
- Purchasing managers index and factory orders
- Manufacturing inventories
- Research-and-development expenditures
- Exports and imports
- Plant closings and mass layoffs
- Bankruptcy trends, manufacturing

## Health care

- Hospital beds utilization, vacancy and average stay
- Number and employment size trends of key medical centers: primary hospitals, teaching hospitals, trauma units, specialized care units
- National ranking trends of same
- Number of graduates of teaching hospitals, number who stay
- National and regional health insurance costs and trends
- Medicare/etc. reimbursement cost trends
- In-hospital costs to employers, employees

## Financial services

- Number of banks, employees
- Number of financial institutions, employees
- Number of insurance companies, employees
- Output-volume dollar product
- Prime rate
- Number of new mortgages
- Number of new re-financing
- Aggregate loans by small-mid-large companies
- Default rates and bankruptcies
- Number of new regional businesses, expansions
- Measures of bank liquidity, cash flow, loan coverage

- Trends in real estate
- Demographic changes, especially numbers of elderly

#### Universities/research centers

- Number of universities and research centers, employment
- Ranking of same
- Numbers of patents granted
- Number of college age students in regional area
- High school and college graduates
- Public funding trends
- Tuition growth trends
- Endowment trends
- Types of advanced degrees—college, post-graduate, etc.
- % of graduates who stay in area
- Availability of teachers
- Average teacher salary levels

#### Government services

- Number of government units, and employment
- Budget projections by county, municipality
- Revenue base projections by same: taxes, intergovern. government transfers, etc.
- Changes in real estate tax capacity by county, municipality
- Vacancy rates for retail, office and manufacturing space
- Total land under development
- Planned growth or reductions in employees, by unit
- Tax trends

#### Transportation

- Air passengers, transit and destination
- Air freight shipments
- Number of freight facilities
- Barge shipments
- Rail shipments
- Tonnage of steel/metals/manufacturing shipments
- New business growth
- Business closures and mass layoffs
- Fuel costs, availability, spikes and trends
- Regulatory changes
- Insurance prices and trends
- Quality of infrastructure in region: highways, rail, port and river facilities, etc.
- Planned infrastructure projects
- Trends in mass transit usage