**National Report**

**The 2011 Manufacturing and Logistics Report**

Grades the U.S.’s 50 states in several areas of the economy that underlie the success of manufacturing and logistics.

These specific measures include: manufacturing and logistics health, human capital, the cost of benefits, the global reach and diversification of the industries, state-level productivity and innovation, the tax climate, and venture capital activities.

---

**About Conexus Indiana**

Conexus Indiana is a private-sector-led initiative focused on the advanced manufacturing and logistics sectors—two industries that combined employ more than one of every five Hoosiers. We are focused on making Indiana a global manufacturing and logistics leader by strengthening the state’s human capital, building industry partnerships to capitalize on new opportunities and address key challenges, and promoting a better understanding of the importance of these industries to our economic future.

Conexus Indiana’s most urgent mission is building tomorrow’s manufacturing and logistics workforce, preparing Hoosiers to take advantage of high-tech careers in these exciting fields. We are also focused on developing a unified strategy to enhance our logistics capabilities, linking manufacturers with in-state suppliers to streamline supply chains and spur investment in Indiana, and undertaking other strategic projects that will help the manufacturing and logistics sectors thrive here at the Crossroads of America.

---

**About Ball State’s CBER**

The Center for Business and Economic Research (CBER) is an award-winning economic policy and forecasting research center housed within Ball State University’s Miller College of Business. CBER research encompasses health care, public finance, regional economics, transportation, and energy sector studies. The center produces the CBER Data Center—a one-stop shop for economic data, policy analysis, and regional demographics—and the Indiana Business Bulletin—a weekly newsletter with commentary on current issues and regularly updated data on housing, wages, employment, and dozens of other economic indicators. In addition to research and data delivery, the center serves as the business forecasting authority in the Muncie area—holding the annual Indiana Economic Outlook luncheon and quarterly meetings of the Ball State University Business Roundtable.
The level of international trade—both in exports and imports—is a robust measure of the region’s competitiveness in the production, movement and distribution of consumer durable and non-durable goods. Both firms and regional government focus considerable effort at improving ties with foreign firms, but for different reasons. Governments seek foreign investment in plant and equipment, while firms care about supply relationships on both commodities and finished goods. Of course manufacturers want to make goods with a global market appeal. How well this is done is an important predictor of the health of the manufacturing and logistics sectors into the future.

To measure global reach we include the export related measures of per capita exported manufacturing and the growth of manufacturing exports and the foreign direct investment measured in a state exists within one sector, the level of adaptability of the state’s exports to changing demand, as well as the reach of foreign direct investments which is simply the variance or spread of foreign direct investments from different regions of the world. These data are collected from the Department of Commerce’s International Trade Administration.

There are both risks and rewards to economic diversification. States that have a high proportion of manufacturing activity in a single sector typically suffer higher volatility in employment and incomes over a business cycle. Less diversified regions are also more likely to experience greater effects of structural changes to the economy which involve a shift in the demand for labor or investment. Single sectors may also experience a large number of investment failures in which the manufacturing employment per capita. These data are collected from the U.S. Department of the Census, the Bureau of Economic Analysis, Regional Economic Information System.

Managing Health

The production of goods holds a particular place of interest in the U.S. economy. Manufacturing firms are not necessarily reliant on local demand for goods and are therefore footloose. Their location then depends more on local factors such as the quality and availability of the labor force, transportation infrastructure, non-wage labor costs, and access to innovative technologies and the cost of doing business. Manufacturing is the production of both consumer durable goods such as automobiles, electronics and home appliances, and consumer non- durables goods such as clothing, processed foods, and other goods that are consumed after use.

To measure manufacturing we include three variables, the share of total income earned by manufacturing employees in each state, the wage premium paid to manufacturing workers relative to the other states’ employees and the share of manufacturing employment per capita. These data are collected from the U.S. Department of the Census, and the Bureau of Economic Analysis, Regional Economic Information System.

Logistics Health

The movement of goods is of central importance to the production of goods. Without a robust logistics industry, manufacturing and commodity production will not occur. Logistics comprises not merely the capacity to move goods, but to store inventory and manage the distribution and processing of manufactured goods. Logistics firms depend upon many of the same factors as manufacturing firms in their location decision, but there is a more complex interplay between local conditions and the existing or planned transportation networks of roads, rail, waterborne traffic and air.

To measure the logistics industry we include the share of total logistics industry income as a share of total state income, and the employment per capita. We also include commodity flows data by both rail and road. To this we measure infrastructure spending as per capita expenditure on highway construction. These data are collected from the U.S. Department of the Census, the Bureau of Economic Analysis, Regional Economic Information System and the Center for Transportation Statistics, U.S. Department of Transportation.

Venture Capital per Capita

Access to venture capital is a key step for nascent businesses to expand efforts. This seed money is offered by a small segment of financial service providers interested in high yield activities, typically involving high risk or high-end intellectual property. Venture capital activities rely on deep industry research and analysis as well as a bridge of expertise in potential markets. This understanding of potential markets, the commercialization process and the core management assistance to new companies distinguishes venture capital (VC) from other investment tools. Public activities like Indiana’s 21st Century Fund and private firms engage in venture capital efforts. The presence of available venture capital is widely felt to be a key indicator of the maturity of the regions commercialization networks and is a widely used indicator of the health of innovation and creativity.

We rank states by total per capita venture capital expenditures as reported by the State Science and Technology Institute, then assign a grade.

Productivity and Innovation

The value of manufactured goods per worker—productivity—as well as firm access to inventions and innovations is critical to the long-term performance of a firm and the industry as a whole. Though innovations and inventions are aggressively sought from across the globe, the presence of local talent in these areas through access to universities, technology laboratories and non-profit research activities plays an important role in location decisions by manufacturers.

To measure productivity and innovation we use manufacturing productivity growth, industry research and development expenditures on a per capita basis, the per capita number of patents issued annually. These data are collected from the Census of Manufacturers, the National Science Foundation, the Patent Office and a study by PriceWaterhouseCoopers/National for the Venture Capital Association.

Global Reach

GRADING SCALE

A methodology for grade calculation and a glossary of terms can be found on the back page, along with the 2011 National Scorecard. View the interactive version of this report online: www.bsiu.edu/cber + “Current Studies and Publications”.

Tax Climate

Few factors garner as much policy interest as state and local tax policies. For firms, which may operate virtually anywhere, tax rates—along with the quality of local public goods—mater a great deal in location decisions. Taxes on the business, individual income taxes (both on workers and small business), sales, unemployment insurance, and property taxes all play in a role in assessing regions for a potential employer location.

To measure the tax climate we use data on corporate taxes, incomes and sales and use taxes, property and unemployment insurance tax data collected by the Tax Foundation.

Benefit Costs

Non-wage labor costs represent an increasingly important part of total business costs. These are affected by local and state public policy as well as worker demographics, health, and industry and firm performance. Benefits range from the cost of health care to workers, to liability and workers compensation and other costs such as relocation and other fringe benefits.

To measure benefit costs, we include data on health care premiums and long term health care costs, workers’ compensation costs per worker and fringe benefits of all kinds as a share of worker costs. These data are collected from the American Association of Retired Persons, Bureau of Economic Analysis, Regional Economic Information System and author’s calculations from data produced from the national input-output model.

Human Capital

No factor matters more to businesses than the quality and availability of labor. Workers represent the largest single cost of doing business, but more importantly they are the source of most innovation and process improvements that differentiate successful firms from those that are not successful. Because produced goods have a high degree of value dependent on each individual worker in a production line or transportation lag or hub, a uniformly high quality of workers is required. These workers must possess the ability to understand increasingly complex production processes which are today managed by computers with specialized software. The factories, rail yards, distribution facilities and machine shops of today are complex, highly automated and are dependent on workers who can work successfully in this environment. Human capital is the most important factor in firm location decisions, which, in the United States, is almost entirely made up of the quality of educational background.

Our human capital measurements include rankings of educational attainment at the high school and college level, the first-year retention rate of adults in community and technical colleges, the number of associates degrees awarded annually on a per capita basis and the share of adults enrolled in adult basic education. These data are from the National Center for Educational Statistics.