
AN ALTERNATIVE TO CLUSTERS: ILLINOIS COMPARATIVE ADVANTAGES ¹

Each day in Illinois, thousands of economic transactions take place: Raw materials are transformed into goods and services by employees who contribute their labor and intellect for income. Customers all over the world value these products and pay for them. Regions prosper when they have resources like labor, production skills, or technology (with advantages of price, quality or availability) and can use those resources to create products or services efficiently at reasonable costs.

An increasingly common way to categorize the economic base of a region is to look at the clusters of industrial organizations and industrial networks. The definition of a cluster is sector-dependent. In one traditional view, an industry cluster may be defined as a geographic concentration of establishments, encompassing both large and small firms, producing similar products and competing in similar markets. The term cluster is also used to describe complementary or interdependent firms including suppliers, service providers, and final product manufacturers: one industry produces another industry's key components. A cluster also may reflect industries that derive their stability from the comparative advantage of the region: a specialized labor pool; access to capital or technology resources; readily available suppliers and support services; or ease of transportation or communications. Clusters are an important tool for understanding the economic base of a region since cross-cutting issues can be addressed more effectively by working with groups of related firms.

***What Is Unique About
the New, Innovation Driven
Economy?***

In the 'new' economy, knowledge and innovation -- both of which can be created by ... institutions -- are the ingredients driving the competitive advantage of regions, states and nations. Economic success is no longer dependent on the natural resource base of raw materials, nor the capital base of fixed capital and equipment, though both are still important. (NGA)

While economic development and growth are due to a number of elements, two of the more important elements to a region are its resource base and the comparative advantage of those assets. Regions prosper depending on the nature of their endowments; the advantages in price, quality or availability of resources; and the ability to transform these inputs into products or services in demand. Resource

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advantages of a region do change over time because of improvements in transport and storage, production technologies, changing consumer tastes, and the rise of competitors, among other factors. Illinois is a good case study of the changing importance of resources (natural, capital and intellectual) to a vibrant, healthy economy.

THE RESOURCE-BASED ECONOMY

In the beginning of the last century, Illinois was predominantly an agriculture-oriented state. At that time, there were nearly a quarter-million farmers in Illinois, making it the most common occupation. In that resource-based economy, extractive industries such as minerals and mining and agricultural industries such as fishing, forestry or farming were the economic drivers providing a regional competitive advantage. Today, while several rural areas are still dominated by agriculture (with over 25 percent of local income dependent on that sector), the state as a whole is more properly characterized as having an agriculture “cluster” of farmers, agricultural services, farm and garden equipment manufacturers, food processing, lumber processing and grocery stores, which employ over one-third of a million people.

Agriculture. Illinois is blessed with fertile soils, well-timed rainfall, level topography, and other abundant natural attributes for the production of grain crops. These advantages resulted in \$7.3 billion in cash crop receipts (corn, soybeans, wheat, sorghum and others) in 1997, placing Illinois second nationally behind California at \$19 billion. These statistics demonstrate what has always been true: agriculture is a vital part of the lives of Illinois citizens and the economy of the state. Marketplace demand from consumers and processors -- both domestic and foreign -- for value-enhanced commodities and value-added products indicates potential new markets for specialty crops.

Energy/Environment. Illinois is the largest producer of ethanol in the United States, which produces over 5,000 jobs for Illinoisans. On August 15, an announcement was made that an ethanol plant would be constructed in Lena, Illinois. The 35 million gallon plant will be twice as large as the typical dry milling plant and will create 35 to 40 new jobs. Many state and federal officials are working to assure that the markets for biofuels are maintained and expanded.

Coal. Coal not only plays a vital role as an energy source, but the industries involved in the mining, transportation and utilization of coal provide thousands of jobs for Illinoisans and economic stability to many communities across the state, particularly many mid-sized communities in the southern region. Illinois is the seventh-largest coal producing state in the nation. Over 43 million tons of Illinois coal are mined annually, accounting for nearly \$1 billion in sales.

THE INDUSTRIAL-BASED ECONOMY

By the mid-point of the century, the driving force of the national and state economies was capital intensive (heavy) industries serving reasonably large, homogeneous, domestic markets. Economic success was dependent on large business and major manufacturing and raw materials industries such as automobiles, steel, oil and chemicals. The hallmarks of this mass market economy were industries which made standardized products through long product runs and relied on achieving economies of scale with low cost sources of labor and raw materials. Companies competed by reducing costs of inputs like land, labor and raw materials, and progress was measured by the addition of large capital investments. Illinois became a manufacturing and transportation powerhouse during this period. Most Illinois workers made a good living by working in these industries, in the firms that supplied them, or the businesses that transported and distributed their products.

Illinois remains as one of the primary manufacturing states, producing about 5 percent of the total manufacturing goods in the United States. In the 1990's, Illinois manufacturing employment grew in both absolute terms and as a percentage of total national manufacturing employment. This reversed the trend of the previous two decades. A number of industries contributed to this employment growth: industrial machinery, preserved fruits and vegetables, plastics products, electric lighting and wiring, motor vehicles and equipment, metal coating and engraving and paperboard containers.

Plastics Products. In the past decade, plastic products continued to grow in importance. As a result, the miscellaneous plastics products industry in Illinois added 4,500 jobs. Over the next decade, plastics industries are expected to add almost 8,800 more new jobs in Illinois.

Metal Fabrication. Other key manufactured inputs, such as screw machine products, bolts, rivets, metal coating and engraving, and allied services grew in the 1990's, but are expected to increase productivity and either maintain or reduce employment levels in the upcoming decade.

Furniture and Fixtures. Several fixture industries that have grown over the past decade are expected to continue growth over the next decade. These include office partitions, office fixtures and furniture, and miscellaneous furniture and fixtures.

Food and Kindred Products. Food processing firms continue to grow in Illinois. In the 90's a major part of the growth was in preserved fruits and vegetables. In the next decade, meat processing, miscellaneous specialty foods and grain mill manufacturing are expected to increase employment.

Transportation and Warehousing. Illinois (particularly the Chicago metropolitan area) is well known for strengths in rail, shipping and air transportation. Transportation and warehousing will continue to provide a key source of job growth for Illinoisans in the coming decade.

THE SERVICE-BASED INDUSTRIES

Service industries created 6.4 million new jobs in the nation, more than half of all new jobs, between 1992 and 1997. Service industries are not only the biggest sector of the national and state economies, but they are also the fastest-growing sector of our economy. Business services recorded much of that 1992-1997 growth, accounting for the biggest dollar growth in receipts among firms subject to federal income tax; from \$275 billion to \$529 billion (a 92 percent growth rate).

Tourism, Travel, Recreation, Entertainment. Illinois tourism revenues have grown steadily from 1997-1999, with a record of \$22.05 billion in 1999. This number represents a 5.5 percent increase from the 1998 total of \$20.9 billion. Travel spending by domestic and international visitors to Illinois in 1999 generated receipts for a variety of businesses, income and employment for many Illinoisans and tax revenues for all levels of government. Travel spending is expected to remain strong among United States residents and experience increasing growth from international visitors. Given these projected trends, the state should continue to invest aggressively in projects aimed at boosting Illinois as a tourism destination of choice.

Health Care. The health care industry in Illinois is projected to continue its recent growth, adding over 300,000 jobs during the next ten years. Health care industries contributed substantially to the job growth over the past several years and are expected to continue to grow faster than the economy as a whole.

Business Services. Employment categories such as management, legal services, engineering, accounting and auditing, membership organizations, business consulting, and advertising grew tremendously in the 1990's and are expected to continue to grow through 2010. The growth of this cluster of industries, particularly in Chicago, parallels similar growth in many other major metropolitan areas, a large portion of which comes from international sales.

THE INNOVATION-DRIVEN ECONOMY

Today, the economic terrain is significantly changed. The driving forces of the New Economy are being dominated by ideas and knowledge. Innovation and invention have replaced costs as the watchwords of success for today's businesses and workers. At the turn of the 21st century, while Illinois' resource-based and manufacturing industries remain important, the major source of new economic growth will be in the technology and services sectors, whose products require a different mix of inputs. In Illinois' New Economy, knowledge and innovation -- also called intellectual capital -- are the ingredients driving competitive advantage. Globally-competitive firms use this knowledge and innovation to launch specialized products in an international marketplace. Today's high-performance, world-class firm relies on a quality workforce, state-of-the-market technology and processes, and better information on customers' needs to stay competitive. The types of assistance that these organizations need are influenced by the speed at which these innovations are occurring and being brought to market.

In the past 10 years, metropolitan areas and states that have experienced superior job growth have done so because of the growth of their high technology sector. Two-thirds of the total-output growth differences among metropolitan areas, and 60 percent of job growth, can be explained on the basis of concentration of technology-oriented firms. In the past 15 years, research and development (as a percent of sales) of United States industry has doubled. Two technology sectors account for a large portion of this increase: the pharmaceutical/biotechnology sector; and the information/electronics sector.

Information/Electronics. The telecommunications industries, which added over 4,500 jobs during the last seven years, are expected to lose jobs over the coming decade, potentially due to mergers and productivity. This loss may be offset by an increase in wireless communications. Preserving this past job growth makes these industries excellent retention targets.

Software Companies. Software leads Illinois industries in the creation of new establishments and leads the high-tech sector in the creation of jobs. Existing software establishments added 14,646 jobs between 1989 and 1996.

Biotechnology, Life Sciences. The biotechnology industry, while still in its infancy, is already a significant sector within the national economy. Revenues for the United States-based biotechnology industry were estimated at approximately \$11 billion in 1996. In Illinois, research and testing services will be a key industry, projected to add over 14,000 jobs. Drug manufacturing will also continue to grow, although the pace is expected to be slower than it was in the 1990's. Illinois research in structural genomics, agricultural and food genomics, medical genomics and clinical research, and bioinformatics will help propel this sector.