



# CLOSING THE GAP

An Examination and Analysis of  
Per Capita Personal Income in Arkansas



# Closing the Gap:

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# Executive Summary

## Findings, Conclusions, and Recommendations

Recent changes in social, cultural, technological, and economic forces have created a New Economy that is much more reliant on knowledge-based activities and creative processes. These changes require new strategic responses for continued competitive survival of communities and enterprises. Accelerate Arkansas is a statewide organization of volunteers whose mission is to foster economic growth in Arkansas by using the building blocks of a knowledge-based economy. The overarching goal of Accelerate Arkansas is to increase per capita personal income in Arkansas to the national level by 2020. That is, to close Arkansas' per capita personal income gap by 2020.

From the beginning of 1969 to 2004, the Per Capita Personal Income (PCPI) gap between Arkansas and the U.S. narrowed by a total of 10% or by about 0.003% per year on average, moving from 67.8% in 1969 to 77.9% in 2004.

In 2000, PCPI of the MSAs in Arkansas ranged from 94.2% of the U. S. average (in the Memphis MSA) to 71.4% of the U. S. (in the Pine Bluff MSA). With the exception of the Memphis and Little Rock-North Little Rock MSAs, they lag behind 20 of the 22 high growth MSAs identified in the U. S.

A convergence process (of per capita personal income) is happening throughout the U. S., but at a very slow rate. There are several dynamic processes capable of retarding the rate of convergence. These

dynamics can be (1) the possibility of excessive heterogeneous states/regions with the possibility of multiple growth clubs; (2) structural breaks in the convergence process that widen state/regional inequalities; and (3) the existence of regional spillover effects among regions that reduce rates of convergence.

If Arkansas relies upon the current rate of technical progress and the flows of labor and capital between states, only 30 percent of the gap between the U. S. and Arkansas will be closed by 2020.

As of 2004, per capita personal income in the metropolitan portion of Arkansas stood at 85% of the U. S. level, while the average in the nonmetropolitan portion of the state was only 68% of the U.S. level. Thus, the lowest levels of per capita personal income relative to the U. S. are found in rural areas of the state.

Among the fastest growing of the high-growth MSAs (Movers and Shakers) and Arkansas MSAs, per capita personal income is positively correlated with total population, percent urban population, percent of adults with at least a bachelor's degree, and percent of the total population in the labor force. It is negatively correlated with the percent of adults without a high school diploma. It stands to reason that as the education level of Arkansans increases, the per capita personal income can be expected to increase as well.

Movers and Shakers were found to have 16 industries which contributed more to personal income than in the nation as a whole, and seven which contributed less. In contrast to the Movers and Shakers, 12 of the Arkansas industries had Location Quotients (LQs) larger than 1.0, while 11 were below the national level. Only five industry sectors in rural areas contributed more than their U. S. counterparts to total personal income, while 18 industries had LQs below one. It is apparent from the data that many of the more labor-intensive industries, and those which may require more highly educated employees, contribute very little to the total personal income in rural Arkansas.

If Arkansas' PCPI gap is to be closed, it is critical that Arkansas' economy be based on innovative processes. In this new innovative economy, Arkansas' industrial structure must pay employees wages above national averages, and occupation earnings must also exceed the national counterparts. Arkansas occupational and industrial mixes must therefore shift toward activities that are conducive to the innovative environment.

In Arkansas, industries that paid average wages above the national average included mining; utilities; construction; wholesale trade; finance and insurance; professional and technical services; and management of companies and enterprises. These are the industries in Arkansas that contributed to closing the PCPI gap in 2004.

In general, median earnings are less in Arkansas than the U. S. across occupations. The only exception for this list of occupation groups is that of farming, fishing, and forestry. Occupational groups that pay high wages relative to the U. S. median wage for all occupations include management occupations; business and financial occupations; computer and mathematical occupations; architecture and engineering occupations; life, physical, and social science occupations; legal occupations; and healthcare practitioners and technical occupations. Growth in the number of workers in these occupations at the prevailing median annual wage would contribute to closing the state's PCPI gap.

To make the transition to the New Economy, many communities find a basis for success in the adoption of an "entrepreneurial" attitude: one in which the community is ready to face change and challenges as they

occur, unafraid of the risk of the unknown. These communities are successful because they adopt a vision of themselves in the future, and chart and follow a path to reach the desired state.

Recommended statewide strategies for economic development in the New Economy that are reliant on knowledge-based activities and processes focus on improving the labor force through investment in education, including early childhood programs, primary and secondary education, higher education, and workforce training. Other recommendations include improving the research and development presence at universities; expanding the telecommunications infrastructure, assisting entrepreneurs by helping provide capital investment and technical assistance; realigning the state tax structure to recognize changes in industry; structure; assuring a regulatory environment that does not distort markets; attending to quality of life issues; and assuring that the government systems are clearly defined and responsive to the needs of the communities. In short, government in the New Economy may be viewed more as an investment and a partner than an adversary and a drain on the private sector.

For metropolitan areas, recommendations include taking a regional approach to both community and economic development issues; providing assistance and leadership for regional partnerships; investing in assets that will drive economic development, including education, infrastructure, and amenities sought by knowledge-based firms; promoting cluster-based development; reinvesting in downtown areas and blighted neighborhoods; and using incentives to provide an adequate labor market throughout a region.

Within rural areas of Arkansas, the need for a new approach is particularly great if per capita personal income is to grow to parity by 2020. There are three essential recommendations that apply to rural area development, as follows:

1. Encourage the development of industry clusters to include both public and private resources for related industries, such as using colleges and universities as training centers to provide workforce development opportunities.
2. Facilitate rural entrepreneurship by providing access to capital, using budget appropriations or venture capital fund intermediaries; by creating training programs that develop the local leadership capacity to identify and encourage local entrepreneurs; and by using technology such as online networks to allow rural entrepreneurs to connect to information and financial resources.
3. Diversify and add value to agriculture through product development, to allow farmers and local entrepreneurs to retain value added activities rather than selling agricultural commodities at low margins, by providing financing mechanisms and by providing infrastructure and technical support for new marketing activities and product development.

## A Final Note

The findings of this report can provide a base for future action on the part of Accelerate Arkansas in several ways. Additional study can be performed to refine some of the findings and gain detailed knowledge about the particular issues constraining growth in per capita personal income within specific geographic areas, industries, or occupations. Strategies for action can be adopted and prioritized based upon their perceived impacts upon the state's economy. Finally, leadership can engender in the public an awareness of opportunities and challenges facing the state in the New Economy, a vision of Arkansas' future, and an



# Introduction

## A Vision for Arkansas

Accelerate Arkansas is a statewide organization of volunteers from business, science and engineering, education, and government who are working under the auspices of the Capital Resource Corporation to guide policy formation with respect to innovation, entrepreneurship, and capital formation in Arkansas. The members of this organization can envision an Arkansas encompassing the high growth firms of the 21st Century: high technology and knowledge-based firms, and the knowledge workers who accompany them. As they view it, their mission is as follows:

*“To foster economic growth in Arkansas by using the essential building blocks of the knowledge-based economy -- knowledge creation through research and development, intellectual property development, commercialization of new technologies, growth of entrepreneurial knowledge-based firms, knowledge workforce and evolution of clusters of such firms (i.e., critical mass); to create an environment supporting entrepreneurship and continuous innovation.”*

The overarching goal of their organization is to increase per capita personal income in Arkansas to match the national average by the year 2020. To achieve this goal, the growth rate of personal income in Arkansas must substantially exceed that of the U. S. as a whole.

## Definitions of Personal Income (PI) and Per Capita Personal Income (PCPI)

Personal income is the income received by all persons from all sources. Personal income is the sum of net earnings by place of residence, rental income of persons, personal dividend income, personal interest income, and personal current transfer receipts. Net earnings is earnings by place of work (the sum of wage and salary disbursements (payrolls), supplements to wages and salaries, and proprietors' income) less contributions for government social insurance, plus an adjustment to convert earnings by place of work to a place-of-residence basis. Personal income is measured before the deduction of personal income taxes and other personal taxes and is reported in current dollars (no adjustment is made for price changes).

Per capita personal income is total personal income of a given area divided by the total midyear resident population of the area. Thus, the 2006 per capita personal income of Arkansans is equal to the total personal income in Arkansas during 2006 divided by the total population of Arkansas as of July 1, 2006.

Due to the mathematical relationships between personal income, its components, and population, a positive change in PCPI will be achieved whenever there is an increase in net earnings by place of residence, rental income of persons, personal dividend income, personal interest income, or personal current transfer receipts while population is held constant. (Conversely, if the population increases while personal income is held constant, PCPI will decrease.) Since a net increase in PCPI may result from changes in a variety of variables, there are many alternative strategies to effect such change. Strategies will have different consequences and their choice can impact the lifestyles of the population, as well as the increase in PCPI differently.

## Core Strategies of Accelerate Arkansas

According to Accelerate Arkansas, the group's core strategies that accompany the goal of increasing per capita personal income to parity with the U. S. PCPI are the following:

### **1A. *Increase achievement in science, technology, engineering, and math education (STEM)***

Objectives for this strategy include beginning STEM education in early grades; including science, technology, pre-engineering, and math content in the curriculum frameworks for all appropriate grades; and creating accelerated learning programs for students with an aptitude for STEM.

### **1B. *Increase achievement in science, technology, engineering, and math education in higher education.***

Objectives include creating scholarships for science, technology, and engineering that are hard to get, but easy to keep; enhancing teacher training at colleges and universities to improve overall subject matter mastery and teaching techniques; and connecting the K-12 STEM curriculum to the higher education curriculum.

### **2. *Increase job-creating research.***

Objectives are to encourage faculty/staff to collaborate in the development of commercially viable ideas and to partner with the business community; develop best practices and reduce impediments for how higher education and industry work together and reduce impediments to university-industry collaborations; create a pool of funds for seed research funding for aspiring researchers; and seek a greater portion of federal funding to come to Arkansas for research.

### **3. *Coordinate and enhance entrepreneurship.***

Objectives are to provide tax incentives for entrepreneurs; to promote, coordinate, inspire, and grow commercialization (entrepreneurship); and to mentor and support entrepreneurs by identifying and supporting resources/infrastructure to reduce the need for capital investment.

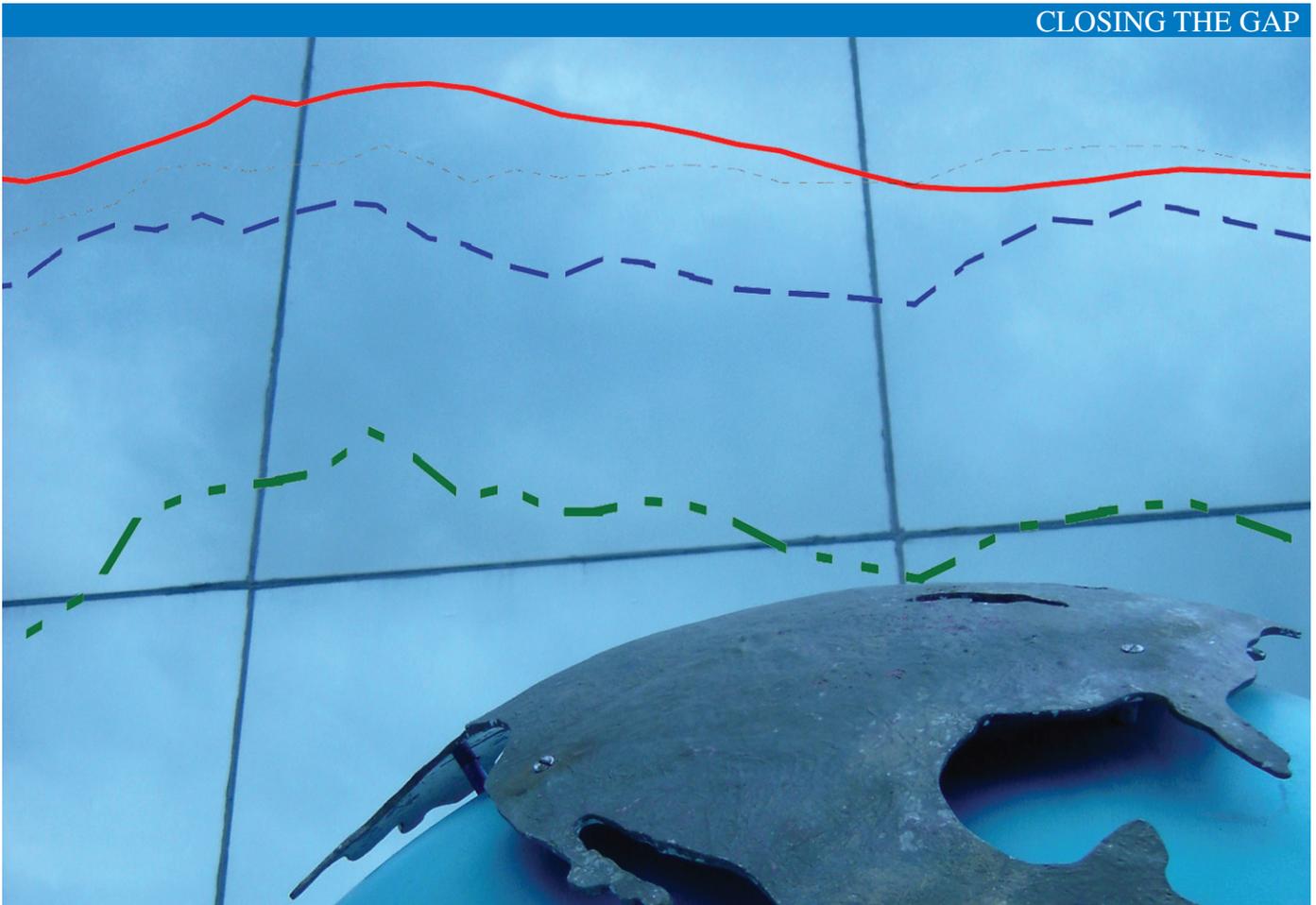
### **4. *Develop risk capital for all stages of the business cycle.***

Objectives here are to create incentives for private investors to invest in early stage knowledge-based companies; to link investors to new businesses; and to create a pool of funds that could be used for capital investments or matches consistent with other core strategies involving education, research, and entrepreneurship.

### **5. *Sustain successful industry.***

Objectives are to create economic incentives for existing knowledge-based companies to expand within the state; develop incentives for universities to do targeted research for existing/emerging industries; improve and enhance K-16 education to keep up with evolving technology; and to develop statewide R&D networks and promote university-industry collaborations.

An ambitious goal such as raising statewide PCPI to approach convergence with national statistics requires highly focused and effective strategies to foster economic development in the state. This study is intended to provide direction to the members of Accelerate Arkansas as they develop their strategic plan by reviewing recent trends influencing economic development, summarizing innovative development strategies that have been successful elsewhere throughout the country, and examining the current distribution of industries and occupations in Arkansas. It includes a detailed look at the industrial and occupational composition of each of Arkansas' Metropolitan Statistical Areas (MSAs) and contrasts these to the rural area of the state and to other high- and rapid-growth MSAs in the U. S.



# Economic Development in the New Economy

## Trends Affecting Economic Development

Over the past few decades, significant changes have occurred in the ways business is conducted around the world. A variety of authors have described seven major social and economic trends that currently impact economic development in the U. S. They have all created new opportunities for businesses and individuals, but they have brought about new threats as well. The major trends are described below.

### *1. Globalization.*

For the past quarter of a century, people around the world have been brought closer together than ever before. Technological advances in telecommunications, data processing, and transportation have, in the words of Thomas Friedman, “flattened the playing field,” so that companies that use to compete regionally or nationally now may compete globally.<sup>1</sup> New markets have opened up to American firms, and many American production jobs have moved overseas. Recently jobs which previously were considered to be “untouchable,” such as engineering or accounting, have also moved offshore. The number and power of global businesses increase each day.

<sup>1</sup> Friedman, Thomas L. *The World Is Flat: A Brief History of the Twenty-First Century*. (New York: Farrar, Straus, and Giroux, 2005).

## **2. *Information Technology.***

Both a cause and an effect of increased globalization, improved information technology is opening up new industries and occupations, and doing away with others. The vast quantities of data that can be stored and the stunning speed at which it can be communicated and manipulated have changed the way most, if not all, businesses work. Information technology has changed the way businesses communicate with their customers, obtain raw materials and supplies, and produce and deliver finished products and services. New industries have been created, while others have been made extinct. In some ways it has opened new avenues of efficiency in production, but in other ways it has added to its cost and complexity. Information technology use has created a new set of demands upon employees for skills that were not imagined even twenty years ago.

## **3. *Workforce Development Issues.***

Both the skills of individual workers and the ways in which workers interact with one another have changed in recent years, partly because of the impacts of increasing information technology. While fifty years ago it was common for a worker to be employed by one company for a lifetime, it is now more common for workers to move from one job to another, and even from one career to another, several times during his working life. Although a worker may remain in the workforce longer today than what used to be the norm, thanks to increasing healthy life spans, entry level workers may find that entry into the workforce may be delayed longer than in the past for them to obtain the skills necessary for even an entry level position. In the 1970s and 1980s, increased production and increased per capita personal income (PCPI) were partially made possible by the wholesale entry of females into the workforce. Production jobs, once the “meat and potatoes” of America’s middle class, now are among the jobs most vulnerable to moving offshore.

## **4. *Acceptability of public-private partnerships.***

Years ago, it was unthinkable that governments would actively partner with the private or nonprofit sector to achieve a goal. In today’s business development environment, goals are often impossible to meet without partnerships involving many levels of government, nonprofit organizations, and business entities. Sometimes cumbersome due to bureaucratic restrictions, these partnerships have nevertheless proven successful in developing infrastructure, creating new firms, and increasing employment among existing businesses.

## **5. *Lifestyle preferences.***

The higher growth industries of today are heavily peopled by a higher educated workforce than Twentieth Century traditional manufacturing industries were. This new workforce is compensated with higher wages, and has higher expectations for their quality of life than did the production workers of previous generations. Scarcity of jobs and consumer products is but a dim memory for some older workers, and has never been experienced by many middle-aged or younger workers. Increased communications bombard the public with visions of wealth and “the good life,” and further raise expectations. The increased role of knowledge in today’s growth industries requires a great deal more interaction among the higher educated workers, to encourage knowledge and technology transfer from one industry to another. Today’s more educated workforce demands goods, services, and personal interactions traditionally found in large, cosmopolitan communities, accompanied by the safety, security, and more natural environment traditionally found in more rural

areas. These expectations place heavy demands on smaller communities, and have contributed to a movement of people toward urban areas and away from rural America.

**6. *The urban-rural divide.***

Many of the factors mentioned above—the growing use of information technology, the new lifestyle preferences, workforce development, and globalization—put rural areas at a distinct disadvantage compared to urban areas in terms of economic development. The effects of this “inequality of place” are seen in the declining proportion of the population living in rural areas, and in the demographic characteristics of rural versus urban populations: older, less educated, and lower income. Many rural areas are ill-equipped to provide the infrastructure needed by today’s high growth firms: scarce broadband access, and a highly educated workforce. For many rural areas to survive, change is a necessity.

**7. *The accelerating rate of change.***

The old saw that “the only constant is change” is still true in today’s socioeconomic environment, but with accelerating velocity. The explosion in telecommunications technology beams knowledge of events throughout the world at a dizzying pace. Increased interpersonal communication allows exchange of ideas nearly instantaneously, and the globally competitive environment of many industries makes quick adaptation the rule, rather than the exception. Large monolithic institutions or those dependent upon consensus or majority rule (e.g., universities and governments) operate at a disadvantage in today’s quickly changing environment, placing new stress upon these systems that have been in place for centuries. Their slowness to act results in dissatisfaction in their constituencies, further damaging their ability to respond to current and predicted conditions. There is no reason to expect that the rate of change will decrease in the near future.

## Economic Development Paradigms in the New Economy

The trends discussed above have resulted in what has been called a “New Economy:” one built less upon traditional agriculture and manufacturing, and more upon technology-based and knowledge-based industries. New Economy industries employ high levels of technology and an educated workforce. They are highly adaptable to quickly changing market conditions, and may simultaneously compete in geographic markets in their immediate vicinity and across the globe. Even the organization of large traditional firms has changed in response to the New Economy: those that are most successful have been able to throw off the large bureaucratic centralized organization that slows down their response to change. They have redefined markets in new ways that cut across industry categories; e.g., a food products manufacturer may address consumer lifestyles in defining its market segments. Distribution channels have shortened; a small, specialized business may compete successfully with large firms; traditional place-based services may no longer be constrained to operating strictly in their immediate vicinity. Friedman cites accounting firms that utilize accountants in India to prepare tax returns for clients in the United States.

The response of communities to these trends has been varied, but three paradigms appear to be emerging among successful communities: a redefinition of “community,” a convergence of community and economic development activities, and a conscious focus upon industry clusters.

### Community Redefined

Historically, developers and residents have thought of “community” in terms of the legal boundaries surrounding them: city, county, and state. This definition worked well in the manufacturing-based economy. The New Economy is one in which the growth industries are technology-driven, knowledge based, and may range in size from a few to thousands of employees with higher-developed skill sets than traditional production workers. In this environment, the definition of community becomes much more fluid and may change for different purposes. Kujath has identified three types of regional and community specializations or clusters in the new economy.<sup>2</sup> These include:

1. Communities engaged in globalized knowledge-exchange where transnational and national businesses locate to obtain knowledge about national and international market conditions, competition, consumer demand, regulations, and cultural particulars. As service centers these communities are coordinating points between service and production networks with different geographical extensions and formalities, and support such activities preformed by market research facilities, legal consulting, accountancy, advertising agencies, etc.
2. Communities participating in production-related research and development where information and knowledge providers, universities, and research facilities unite in development of new products and technologies.

<sup>2</sup> Kujath, Han J. *Knowledge-Intensive Services As Key For Process Of Regional Innovation: Leapfrogging and Path Dependency*. In *Rethinking Regional Innovation and Change Path. Dependency or Regional Breakthrough*, Fuchs, G and P. Shapira (editors), Springer, 2005, pp. 85-106.

3. Communities where information and communication technologies make possible the transition of knowledge services to knowledge commodities. These are centers where personal skills, creativity, experiences, scientific knowledge, and organizations develop new knowledge services that become tradable commodities globally.

Economic developers, government officials, and residents themselves may view their community as their immediate neighborhood or their geographic section of a city, or even a multicounty region of a state, depending on the circumstances. To respond to the requirements of the New Economy, many economic development and government organizations are developing new partnerships that are better suited to the tasks at hand. A large manufacturing plant may view its community in terms of a multicounty labor market, while a small software development firm or a retailer might look more at the central city of an urban area as its home. Economic development strategies may be simultaneously built upon many varied definitions of community, all of which encompass overlapping geographic areas. Cooperation among development and government organizations is imperative to build a “New Economy.”

## **Convergence of Economic and Community Development**

As the economy moves away from manufacturing and more into industries that rely on more highly-skilled, specialized workers, the goals of the workforce become more integrated with the goals of the firm. This results in a convergence of economic development and community development goals, in which the traditional “quality of life” variables tend to become more important in attracting, creating, expanding, and retaining businesses than was the case in previous decades. Quality of life has been itself further delineated by some who refer to a “quality of place,” as well. To these scholars, quality of life variables consist of those characteristics of a community that address basic needs of residents (e.g., housing, medical care, education), while quality of place variables go beyond the basics to address lifestyle choices (e.g., cultural and recreational opportunities, population diversity). A successful economic development strategy today must address not only site selection variables such as utility availability, but also the residential selection variables desired by the firm’s employees. As the edges of these disciplines blur, so do the strategies employed and activities engaged in by governments and other organizations and individuals involved in community and economic development.

## **Focus Shifts from Industry Clusters to Knowledge-Based Clusters**

In some ways, the focus upon industry clusters has always existed in many communities, but on a less conscious basis than is currently the case. Clusters traditionally arose around large manufacturers and interconnected firms in an area that developed to supply or purchase their products (Porter, M.E. *The Competitive Advantage of Nations*. Macmillan, London, 1990). Firms cluster because clustering encourages specialization, the close contract between firms facilitates research and innovation in an industry, and clustering reduces risk for both workers and employers.

There are a few differences between traditional cluster development and the new focus upon knowledge-based clusters. In the latter, knowledge creation and spillover are critical, and the innovative capability of

the organizations in the cluster determines its success or failure. A knowledge-based cluster may develop that is just as likely to be based more upon the skill sets of workers or some other factor as the end product.

Another difference is the involvement of other institutions with the private firms in the cluster. Often public sector institutions, such as higher education institutions, and nonprofit sector organizations such as industry or knowledge associations, consciously interact with the private sector, by providing customized training, acting as a broker or intermediary among firms, or acting as an agent of technology and knowledge transfer among the workforce. The effect of this focus can be to speed up the process of technology transfer and diffusion enhancing firms competitiveness in the marketplace.

Munnich, Lee, Schrock, and Cook (2002) found that in rural areas, knowledge clusters can be effective economic development tools and suggested three principles of creating and enhancing knowledge clusters: understanding the local knowledge base, fostering linkages between firms and local institutions that support them, and developing strategies for promoting innovation around local knowledge clusters.

## Indicators of New Economy Success

Beginning in 1998, the Progressive Policy Institute performed a series of studies about the New Economy.<sup>3</sup> They identified a number of variables useful in judging a community's potential for success in the New Economy. The indicators have been organized into five categories, as follows:

1. Knowledge jobs, measuring educational attainment of the workforce and jobs held by managers, professionals, and technicians.
2. Globalization, measuring the export orientation of manufacturing in the community.
3. Economic dynamism and competition, measuring the number of fast growing companies, the number of new business start-ups and existing business failures, and the number of initial public stock offerings by companies in the metro area.
4. Transformation to a digital economy, measuring the percent of adults online, the number of domain name registrations, the percent of students using computers in schools, Internet backbone capacity, and the number of providers of broadband telecommunications services.
5. Technological innovation capacity, measuring the number of high-technology jobs; the number of science and engineering graduates from area colleges and universities; the number of patents issued; expenditures on research and development at colleges and universities; and venture capital investments.

There are sixteen separate indicators used in constructing the index, weighted so closely correlated indicators do not bias the results for overall scores. The study authors used the indicators to analyze the states and the fifty largest metropolitan areas in the country, ranked them on each category and also created an overall ranking of the areas. Other studies have replicated the methodology for additional metropolitan areas and regions within states, to compare their readiness with that of other metropolitan areas.

Table 1 shows the Arkansas scores and rankings (out of all the states) from the two state studies published in 1999 and 2002, along with the comparable values for the U. S. as a whole. According to the authors, because of differences in methodology between the two studies, the changes in the state's rankings cannot be entirely attributed to real changes in the state's economy. The values of the indicators may be helpful in determining the state's overall readiness for the New Economy, however. It may also be helpful to look at Arkansas' scores relative to the U. S. The gaps between Arkansas' scores and the U. S. scores may provide guidance in prioritizing goals for increasing the chances of economic success in the New Economy.

As mentioned above, this study has been replicated in other areas and used in crafting economic development strategies. It may be useful to conduct this type of study in metropolitan and rural areas of Arkansas, to help prioritize objectives and create development strategies that will maximize their effects on the economies of these areas.

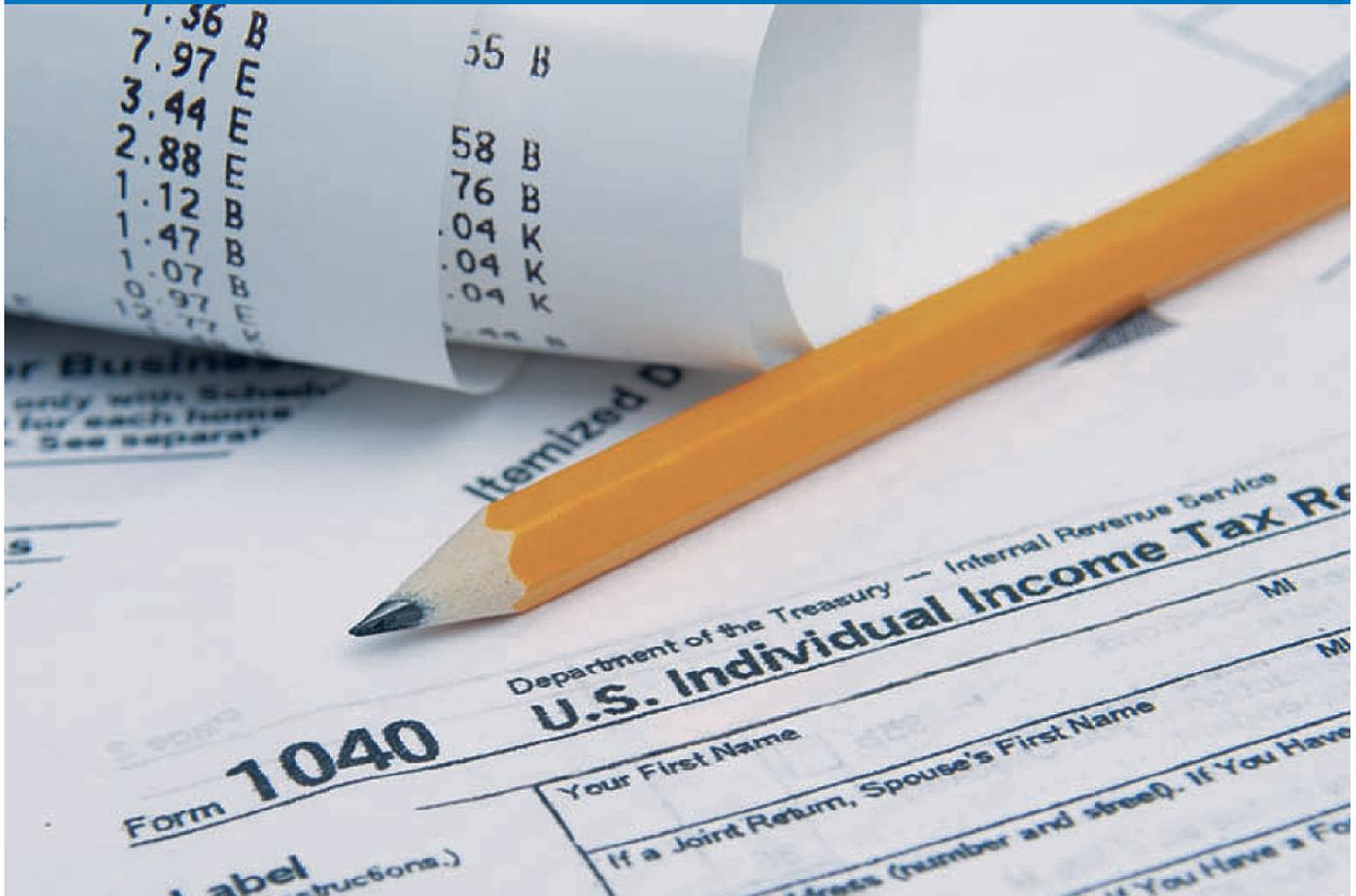
<sup>3</sup> Progressive Policy Institute. [The New Economy Project](http://www.ppionline.org/) [Online]. Available: <http://www.ppionline.org/>

**Table 1**  
**The New Economy Index Rankings and Scores for Arkansas and U.S., 1999 and 2002**

INDICATOR	1999			2002		
	RANK	SCORE	U.S. SCORE	RANK	SCORE	U.S. SCORE
<b>Overall*</b>	<b>49</b>	<b>26.22</b>	<b>48.1</b>	<b>48</b>	<b>41.68</b>	<b>57.5</b>
<b>Aggregated Knowledge Jobs</b>	49	2.7	6	49	5.9	10
Information Technology Jobs: Employment in IT occupations in non-IT industries as a share of total jobs.	42	15.00%	19.60%	49	0.50%	1.70%
Managerial, Professional & Tech Jobs: Managers, professionals, and technicians as a share of the total workforce.	43	20.90%	24.90%	49	21.30%	26.50%
Workforce Education: A weighted measure of the educational attainment (advanced degrees, bachelor's degrees, associate degrees, or some college course work) of the workforce.	48	42.65	58.5	41	44.6	49.2
Education Level of the Manufacturing Workforce: A weighted measure of the educational attainment of the manufacturing workforce.	N/A	N/A		50	0.01	1
<b>Aggregated Globalization Score</b>	<b>40</b>	<b>4.95</b>	<b>6</b>	<b>45</b>	<b>8.14</b>	<b>10</b>
Export Focus Of Manufacturing: Manufacturing export sales per manufacturing worker.	41	14.70%	1831%	48	\$11,110	\$42,913
Foreign Direct Investment: The percentage of each state's workforce employed by foreign companies.	37	3.00%	3.90%	41	3.30%	4.70%
<b>Aggregated Economic Dynamism Scores</b>	<b>24</b>	<b>6.1</b>	<b>6</b>	<b>35</b>	<b>8.38</b>	<b>10</b>
Gazelle Jobs: Jobs in gazelle companies (companies with annual sales revenue that has grown 20 percent or more for four straight years) as a share of total employment.	16	14.60%	14.30%	41	11.80%	13.80%
Job Churning: The number of new start-ups and business failures, combined, as a share of all establishments in each state.	14	2.80%	2.70%	12	20.80%	19.80%
Initial Public Offerings: A weighted measure of the value and number of initial public stock offerings of companies as a share of gross state product.	45	0.04%	0.42%	34	3.55	5.00
<b>Aggregated Digital Economy Scores</b>	<b>49</b>	<b>0.71</b>	<b>6.00%</b>	<b>47</b>	<b>6.06</b>	<b>10.00</b>
Online Population: The percentage of adults with Internet access in each state.	49	19.00%	31.00%	48	44.30%	54.00%
Commercial Internet Domain Names: The number of commercial Internet domain names (.com) per firm.	48	0.11	0.26	47	0.32	0.95
Technology in Schools: A weighted measure of five factors measuring computer and internet use in schools.	31	1.67	2.00	30	1.66	2.00
Digital Government: A measure of the utilization of digital technologies in state governments.	49	41.2	60.40	24	3.14	3.00
Online Agriculture: A measure of the percentage of farmers with Internet access and who use computers for business.	N/A	N/A		42	1.9	3.00
Online Manufacturers: The percentage of manufacturing establishments with Internet access.	N/A	N/A		25	86.00%	84.50%
Broadband Telecommunications: A measure of the use and deployment of broadband telecommunications infrastructure over telephone lines.	N/A	N/A		42	1.88	3.00
<b>Aggregated Innovation Capacity</b>	<b>50</b>	<b>1.9</b>	<b>6</b>	<b>49</b>	<b>6.07</b>	<b>10.00</b>
High-Tech Jobs: Jobs in electronics manufacturing, software and computer-related services, telecommunications, and biomedical as a share of total employment.	40	2.00%	4.50%	43	2.40%	5.30%
Scientists and Engineers: Civilian scientists and engineers as a percentage of the workforce.	50	0.20%	0.43%	48	0.27%	0.49%
Patents: The number of patents issued to companies or individuals per 1,000 workers.	50	0.1	0.48%	49	0.21	0.80
Industry Investment in R&D: Industry investment in research and development as a percentage of Gross State Product (GSP).	42	0.30%	1.80%	43	0.40%	1.91%
Venture Capital: Venture capital invested as a percentage of GSP.	47	0.00%	0.17%	45	0.01%	1.10%

\*Because of differences in methodology, changes in ranks between 1999 and 2002 cannot all be attributed to changes in actual economic conditions in the state.

Sources: Atkinson, Robert D., PhD., assisted by Rick Coduri. THE 2002 STATE NEW ECONOMY INDEX. Progressive Policy Institute, Technology and New Economy Project. June 2002. and Atkinson, Robert D., PhD., Randolph H. Court, and Joseph M. Ward. THE STATE NEW ECONOMY INDEX. Progressive Policy Institute, Technology & New Economy Project. July 1999.



# The New Economy in Arkansas

## Sources of Personal Income and Per Capita Personal Income

As previously discussed, *personal income* (PI) is the income received by all persons from all sources. Personal income is the sum of net earnings by place of residence, rental income of persons, personal dividend income, personal interest income, and personal current transfer receipts. *Net earnings* is earnings by place of work (the sum of wage and salary disbursements (payrolls), supplements to wages and salaries, and proprietors' income) less contributions for government social insurance, plus an adjustment to convert earnings by place of work to a place-of-residence basis. Personal income is measured before the deduction of personal income taxes and other personal taxes and is reported in current dollars (no adjustment is made for price changes).

Table 2 shows Arkansas personal income in current dollars by source for the 2001-2005 period. Personal income by source has not varied significantly over this period. *Earnings by place of work* (EPOW) has remained at close to 75% of PI, and the wage and salary share of EPOW has remained in the upper 80% range. Approximately, 9% of EPOW leaks out of state as payments for social insurance and to nonresidents working in the state. Net earnings by residents is around 65% of PI of the state. The last two components of state PI are dividends, interest, and rent payments to state residents; and transfer (cash) payments to residents.

**Table 2**  
**Personal Income by Source, 2001-2005**

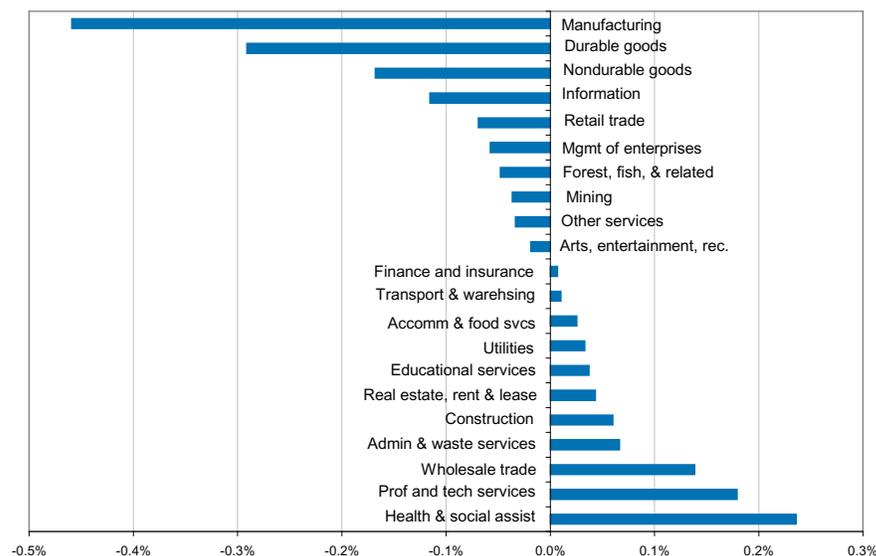
Sources of Personal Income	2001		2002		2003		2004		2005	
	Dollars	Percent								
Wage and Salary Disbursement and Supplements	39659	88%	41374	90%	42966	87%	45759	87%	48653	87%
Proprietors' income	5591	12%	4754	10%	6231	13%	7138	13%	7181	13%
<b>Earning by Place of Work</b>	<b>45250</b>	<b>73%</b>	<b>46128</b>	<b>73%</b>	<b>49197</b>	<b>74%</b>	<b>52897</b>	<b>75%</b>	<b>55834</b>	<b>75%</b>
plus: Adjustment for residence less social insurance contribution	-5646	-9%	-5835	-9%	-6034	-9%	-6353	-9%	-6697	-9%
<b>Net Earning by Place of Residence</b>	<b>39604</b>	<b>64%</b>	<b>40292</b>	<b>64%</b>	<b>43163</b>	<b>65%</b>	<b>46544</b>	<b>66%</b>	<b>49136</b>	<b>66%</b>
plus: Dividends, interest, and rent	10558	17%	10184	16%	9876	15%	10173	14%	10349	14%
plus: Personal current transfer receipts	11806	19%	12758	20%	13286	20%	14271	20%	15201	20%
<b>Personal Income</b>	<b>61967</b>	<b>100%</b>	<b>63235</b>	<b>100%</b>	<b>66324</b>	<b>100%</b>	<b>70988</b>	<b>100%</b>	<b>74686</b>	<b>100%</b>

(Millions of dollars. Derived by averaging the BEA's quarterly estimates that are seasonally adjusted to annual rates)

Source: Bureau of Economic Analysis, U.S. Department of Commerce, State Quarterly Personal Income, (<http://bea.gov/bea/regional/sqpi/default.cfm?sqttable=SQ1>).

*Private earnings* are the sum of wages and salary disbursements and supplements plus nonfarm proprietor's income specific to a place of work and industry. Figure 1 shows the average annual percentage change in private earnings by industry for the 2001-2005 period for Arkansas. As indicated in the chart, earnings are growing most rapidly in the services oriented industries. Industries providing professional and technical services plus health care and social assistance have had the highest average annual percentage change in EPOW. Manufacturing industries which were once major drivers of earnings are now experiencing the greatest declines in EPOW annually.

**Figure 1**  
**Private Earnings by Industry: Average Annual Percentage Change, 2001-2005**



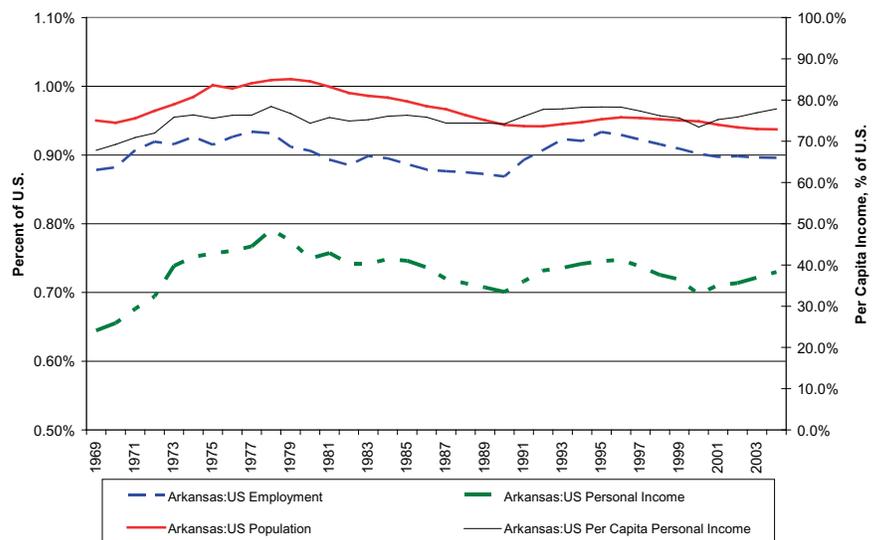
Per capita personal income is calculated as the personal income of residents of a given area divided by the resident population of the area. In computing per capita personal income, BEA uses the Census Bureau's annual midyear population estimates.

## Per Capita Personal Income Trends in Arkansas

In Arkansas, per capita personal income has historically lagged behind the U. S. average, to some extent because of the agricultural basis of its economy. Late in the 1940s economic development efforts in the state began with community research and marketing by the main electric utility of the period, Arkansas Power and Light Company. By the mid-1950s, the Arkansas Legislature created the Arkansas Industrial Development Commission, funded the Industrial Research and Extension Center, and began development efforts in earnest. Between 1958 and 1978, PCPI in Arkansas rose from less than 62% to more than 78% of U. S. PCPI. Since 1978, it has fluctuated between 72% and 77% of the nation's PCPI.

Figure 2 demonstrates a remarkable stability in several significant economic and demographic time series. Arkansas population has remained at close to one percent of the U. S. population over the 1969-2004 period. During this time period, as Arkansas' population grew, its economy was able to generate new jobs to absorb the growing population. Arkansas' economy employed 0.9% of the U. S. annual employment on average over the 1969-2004 period. Arkansas to U. S. employment ratio varied from a minimum value of 0.87% to a maximum value of 0.93%. Personal income in Arkansas accounted for 0.73% of the U. S.'s personal income, and this ratio varied from a minimum of 0.64% to a maximum of 0.79%. Arkansas' PCPI started this time period at 67.8% of the U. S.'s PCPI and in 2004, it reached 77.9% of the U. S.'s PCPI. Over the 1969-2004 period, it reached a high of 78.4% of the U. S.'s PCPI in 1995. Overall, from the beginning of 1969 to 2004, the PCPI gap narrowed by a total of 10% or by about 0.003% per year on average.

**Figure 2**  
**Population, Employment, and Personal Income  
in Arkansas, as a Percent of U.S.**



Direct comparison of PCPI across geographical areas is a misleading indication of differences in economic well-being and quality of life. For one thing, cost of living differences across geographic areas are factored into PCPI.<sup>1</sup> High cost of living places have a tendency to have higher PCPI. Likewise, a place with a high quality of life due to amenity factors often has lower PCPI. Hence, a state like Arkansas which is a relatively rural state with substantial environment amenities can have PCPI lower than the national average even though the economic well-being and quality of life in the state rivals the nation's. To the extent that

<sup>1</sup> ACCRA - The Council for Community and Economic Research produces a cost of living index for urban areas designed to measure living cost differences in urban areas. Although this index is subject to much criticism in its construction it does give some indication of cost differences across urban areas. For first quarter of 2006, the average composite index for six urban areas surveyed in Arkansas was 88.4%. That is, on average the after tax cost of living in the six urban areas was 11.6% lower than the average of all participating places for this quarter. (Data for First Quarter 2006, ACCRA Cost of Living Index, Comparative Data for 297 Urban Areas, Vol. 39, No. 1).

this is true; workers attracted to Arkansas and employed on a permanent base need not receive compensatory payments in terms of a higher personal income to offset a high cost of living and disamenity factors.

Urban areas in Arkansas generally fare better than rural areas in terms of PCPI. In 2000, PCPI of the MSAs in Arkansas ranged from 94.2% of the U. S. average (in the Memphis MSA) to 71.4% of the U. S. (in the Pine Bluff MSA). With the exception of the Memphis and Little Rock-North Little Rock MSAs, they lag behind 20 of the 22 high growth MSAs identified throughout the U. S. When the percent of urban populations in Arkansas MSAs and the high growth MSAs was plotted against PCPI, a positive correlation between the factors was identified. Thus, the projected increase in urban population between 2000 and 2020 bodes well for future PCPI in Arkansas.

The geographical variations in PCPI are correlated with a number of factors, as Table 3 demonstrates. An analysis of the 22 high growth MSAs and the Arkansas MSAs discussed later in this paper found positive correlations to exist between PCPI and population size, percent of the adult population in the labor force, and percent of the adult population with at least a bachelor's degree. Not surprisingly, PCPI was strongly negatively correlated with the percent of the adult population without a high school diploma, and the percent of the labor force unemployed. All correlations proved to be statistically significant at the 5% level of significance.

**Table 3**  
**Correlation of Demographic Characteristics with Per Capita Personal Income**

Characteristic	Mean	Coefficient Correlation	t (Critical Value = 2.0518)
Total Population	930,795	0.450323766	2.9352
Percent Urban	78.4%	0.421688195	2.6651
Percent of Adults without H.S. Diploma	16.2%	-0.644519856	5.7288
Percent of Adults with at least Bachelor's Degree	25.3%	0.721186633	7.8089
Labor force, Percent of Total Population	51.2%	0.576854298	4.4923
Unemployment, Percent of Labor Force	5.2%	-0.684342337	6.6882

Source: IEA Calculations based upon Census 2000 data.

## Convergence and Divergence of PCPI Across Regions

Regional economic growth and the factors affecting this growth have been studied by generations of economists and social scientists. Much of this research focuses on explaining regional growth disparities, and testing hypotheses derived from competing theories of regional economic growth. The neoclassical theory of regional growth stresses regional resources and technical progress as engines of regional growth.<sup>2</sup> One prediction of the neoclassical theory of regional growth is that in the long run per capita personal income should converge across regions. Regional disparities in per capita personal income should be eliminated by the flow of labor from low wage to high wage regions and the opposite flow of capital from high wage to low wage regions. Regions with low per capita personal incomes will be able to catch up to high per capita personal income regions because of these favorable flows of resources between regions and by adopting favorable technologies too.

Studies of regional convergence of PCPI distinguish several types of convergence. *Alpha convergence* is the decline over time in the dispersion of PCPI across several regions. It is a measure of income inequality across regions, and convergence occurs when inequalities in regional PCPI decline over time. Thus, if frequency distributions of PCPIs are constructed across several different regions at different times as in Table 4 and the variances in the distributions compared, alpha convergence occurs when the variances among the distributions decline over time. This means that through time the frequency distribution of PCPIs becomes more peaked and less disperse.

Another type of convergence is *beta convergence*. When two regions' PCPIs converge, the poorer region's PCPI must grow faster than richer region's over time, and thus, the poorer region catches up to the richer region. This process is called beta convergence. The per capita personal income series in Figure 2 demonstrates the concept of beta convergence for Arkansas and the U.S. For beta convergence, the Arkansas per capita personal income series would converge to the corresponding U.S. level. In the figure, the per capita personal income series would reach 100%, but since they do not, there is no beta convergence.

A third type of convergence focuses on a region's long-run growth potential as compared to its short-run economic performance. Regions have different long-run equilibrium growth rates (steady state growth) because they have different economic bases. A region's long-run equilibrium growth path depends on such factors as its level of technology, savings, and population growth for example. In the short run, the performance of an economy may cause it to temporarily depart from its steady state growth rate. In this case, the growth rate of the economy is inversely proportional to the differences between the steady state and actual PCPI growth rate, and regions that have a greater difference should grow faster than regions with a smaller difference over time. This is referred to as *conditional convergence*.<sup>3</sup>

A consensus, although not universal, has emerged from the regional convergence studies. Studies have generally found that the rate of conditional converging is approximately 2 per cent per year across countries<sup>4</sup>

<sup>2</sup> Solow, R. M. "A Contribution to the Theory of Economic Growth," *Quarterly Journal of Economics*, 70, 1956, p. 65-94.

Solow, R. M. "Technical Change and the Aggregate Production Function," *Review of Economics and Statistics* 39, 1957, pp. 312-320.

Borts, G. H. and J. L. Stein. "Economic Growth in a Free Market," Columbia University Press, New York, 1964.

<sup>3</sup> Hofer, H. and Andreas Worgotter. "Regional per capita income convergence in Austria." *Regional Studies*, 31, 1-12. 1997

<sup>4</sup> Mankiw, G. N. D. Romer, and D. N. Weil. "A Contribution to the Empirics of Economic Growth," *Quarterly Journal of Economics*, 107, 1992, pp. 407-434.

Sala-i-Martin, X. "Regional Cohesion: Evidence and theories of regional growth and convergence," *European Economic Review*, 95, 1993, pp. 427-443.

Barro, R. J. and X. Sala-i-Martin. "Convergence Across States and Regions," *Brookings Papers on Economic Activity*, 1991, pp. 107-182.

For regions within countries, there was an even stronger evidence of convergence at close to a rate of 2 percent per year. This merger rate indicates a very slow convergence process.

Looking at standard deviations of per capita personal income (alpha convergence), Bernat<sup>5</sup> suggests that long-run convergence patterns began to subside in 1970 due to the possibility of structural changes. A study by Lo, Chien and Partridge<sup>6</sup> emphasized a regional-club process where similarities in resource bases, industry mixes, and geographical proximity can produce independent growth trends. Regions that are members of a particular growth club will have convergence in per capita personal income, but for different growth clubs, per capita personal income can diverge from one to another.

The general conclusion to be drawn from the empirical studies at least for the United States is that a convergence process is certainly happening but at a very slow rate. There are several dynamic processes capable of retarding the rate of convergence. These dynamics can be (1) the possibility of excessive heterogeneous states/regions with the possibility of multiple growth clubs; (2) structural breaks in the convergence process that widen state/regional inequalities; and (3) the existence of regional spillover effects among regions that reduce rates of convergence.

The empirical findings are not encouraging for achieving Accelerate Arkansas' goal of eliminating the differences between the national PCPI and the state PCPI by 2020. They indicate that if Arkansas relies upon the current rate of technical progress and the flows of labor and capital between states, then the gap between the U. S. and Arkansas will not be closed by 2020. At a 2 percent annual rate of convergence, only 30 percent of the gap will be closed by 2020.

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<sup>5</sup> Bernat, A.B., "Convergence in State Per Capita Income, 1950-1999," *Survey of Current Business*, 81, 2001, pp. 36-48.

<sup>6</sup> Lo, Chien and Mark Partridge. "An Alternative to Approach to the Analysis of the U.S. Per Capita Income Convergence," *Social Science Research Network, Working Paper Series*, July 1, 2005.

## Arkansas' Record of PCPI Convergence

The distribution of PCPI in Arkansas counties as a percent of the nation illustrates the stability in Arkansas geographical distribution of PCPI. Table 4 depicts frequency distributions showing the number of counties falling into different percentile ranges of national PCPI. The percentiles are the county percent of the national PCPI. The frequency distributions show that for many counties, PCPI is converging to the national PCPI level, and the overall distribution of county PCPI narrowed (alpha convergence) during the 1970-2004 period, but not by a statistically significant margin. Since 1980, the mode of the frequencies has also remained in the 70%-80% interval, indicating no major shift toward convergence. There has been a slight tendency toward convergence to the national PCPI level, demonstrated by the number of counties in the above 80% range. The bottom line of Table 4 shows the state's PCPI as a percent of the nation. This historical record indicates some meager evidence of the state gaining on the nation. Over the 34-year period, the gap between Arkansas and the nation's PCPI has only narrowed by 9%.

The frequency distributions of PCPI for the state's metropolitan and micropolitan areas display similar findings. Table 5 shows these distributions of PCPI as a percent of the nation's for metropolitan and micropolitan areas. Regarding Arkansas' MSAs, the ratio of MSA PCPI to the nation has remained relatively stable over the 1980-2004 period, with a slight upward drift in the distribution. The distributions of Arkansas' micropolitan areas have changed very little since 1980. The middle rows of Table 5 compare actual Arkansas metropolitan and nonmetropolitan PCPI ratios. Over the 34 year period, PCPI in metropolitan areas has gained 9% on the nation's PCPI, while PCPI in nonmetropolitan areas has gained 6% on the nation's PCPI.

**Table 4**  
**Counties in Arkansas, 1970-2004:**  
**Frequency Distribution of Per Capita**  
**Personal Income, Percent of U.S.**

County PCPI as a Percent of US	Number of Counties					
	1970	1980	1990	2000	2003	2004
>100%	0	1	1	1	1	1
90% - 100%	4	4	5	3	5	5
80% - 90%	8	18	16	14	19	22
70% - 80%	25	33	31	32	37	37
60% - 70%	31	14	20	21	13	10
50% - 60%	7	5	2	4	0	0
40% - 50%	0	0	0	0	0	0
30% - 40%	0	0	0	0	0	0
Total Counties	75	75	75	75	75	75
State, percent of US	69%	74%	74%	73%	77%	78%

Source: Bureau of Economic Analysis; <http://bea.gov/bea/regional/reis/default.cfm>.

**Table 5**  
**Arkansas' Metropolitan and Micropolitan Areas:**  
**Frequency Distribution of Per Capita Income,**  
**Percent of U.S.**

Arkansas MSAs (count)						
Percent of US	1970	1980	1990	2000	2003	2004
90%-100%	0	1	1	1	2	2
80%-90%	2	3	2	1	1	1
70%-80%	2	4	3	4	4	4
60%-70%	4	0	2	2	1	1
0-60%	0	0	0	0	0	0
Metropolitan and Nonmetropolitan PCPI Percent of US (ratios)						
Arkansas Metropolitan Portion	76	82	82	81	84	85
Arkansas Nonmetropolitan Portion	62	66	66	64	67	68
Arkansas Micropolitan Statistical Areas (count)						
Percent of US	1970	1980	1990	2000	2003	2004
90%-100%	0	0	0	0	0	0
80%-90%	1	1	1	1	1	1
70%-80%	0	4	4	2	3	4
60%-70%	10	7	7	9	8	7
0-60%	2	1	1	1	1	1

Source: Bureau of Economic Analysis; <http://bea.gov/bea/regional/reis/default.cfm>.

## Demographic and Personal Income Comparisons

In order to create the most effective strategies to increase per capita personal income, it may be helpful to compare metropolitan and nonmetropolitan areas of Arkansas with the fastest growing of the high-growth MSAs throughout the U. S., identified using the methodology discussed in Appendix A. Two lists, named “Movers” and “Shakers,” were created from all MSAs in the nation. The Movers were the MSAs with the largest change in ranked PCPI among all the MSAs, and the Shakers were the MSAs with the highest growth rates in PCPI. There were 22 MSAs that appeared on both lists, characterized by growth rates in the top quintile of ranked MSAs and among the top 20% of MSAs in moving their ranking up over the 11 year period analyzed. This 22-MSA subset, labeled “Movers and Shakers,” was used for further analysis and comparison with MSAs in Arkansas. (Note that one of the Movers and Shakers is an Arkansas MSA, the Memphis, TN-AR-MS MSA.)

Several demographic characteristics of the Movers and Shakers were examined, using data from the 2000 Census. They included total population of each MSA, percent of the MSA population living in an urban area, percent of adults without a high school diploma, percent of adults with at least four years of postsecondary education, percent of the population in the labor force, percent unemployment, per capita personal income in 1999, and median age of the population. Table 6 shows the Movers and Shakers, the Arkansas MSAs, and their demographic characteristics. (Note: Hot Springs, AR was not designated an MSA for the 2000 Census; since it was later designated as such, data from Garland County, equivalent to the later MSA, were substituted.)

**Table 6**  
**Demographic Characteristics of Movers, Shakers, & Arkansas MSAs**

Geography	Total Population	Percent Urban	% of Adults without H.S. Diploma	% of Adults with at least Bachelor's Degree	Labor Force % of Total Population	Median Age
Atlanta, GA MSA	4,112,198	88.5%	14.7%	32.0%	53.7%	27.5
Austin--San Marcos, TX MSA	1,249,763	84.6%	14.3%	36.7%	55.2%	30.6
Barnstable--Yarmouth, MA MSA	162,591	93.1%	7.1%	33.5%	47.5%	31.9
Burlington, VT MSA	169,391	69.8%	9.7%	37.2%	57.0%	38.3
Charleston, WV MSA	251,662	72.1%	17.6%	20.4%	47.6%	34.3
Charlotte--Gastonia--Rock Hill, NC--SC MSA	1,499,293	78.7%	17.7%	26.5%	53.9%	34.3
Colorado Springs, CO MSA	516,929	90.5%	8.1%	31.8%	54.3%	29.5
Dallas--Fort Worth, TX CMSA	5,221,801	91.2%	18.8%	28.4%	51.8%	40.0
Eau Claire, WI MSA	148,337	66.2%	11.9%	22.1%	54.6%	30.0
El Paso, TX MSA	679,622	97.0%	33.0%	16.6%	40.4%	33.0
Fort Collins--Loveland, CO MSA	251,494	86.5%	7.0%	39.5%	56.9%	45.2
Grand Junction, CO MSA	116,255	84.8%	13.5%	22.0%	50.2%	33.2
Hattiesburg, MS MSA	111,674	54.7%	18.1%	24.3%	48.6%	36.7
Houston--Galveston--Brazoria, TX CMSA	4,669,571	92.0%	22.4%	26.5%	48.5%	38.1
Kansas City, MO--KS MSA	1,776,062	88.2%	12.2%	28.5%	52.6%	28.8
Lawrence, KS MSA	99,962	87.2%	7.1%	42.7%	58.1%	30.1
Memphis, TN--AR--MS MSA	1,135,614	87.9%	18.7%	22.7%	49.0%	29.0
Salt Lake City--Ogden, UT MSA	1,333,914	97.9%	11.5%	26.5%	51.4%	33.8
San Antonio, TX MSA	1,592,383	88.7%	21.4%	22.4%	47.4%	33.2
Sheboygan, WI MSA	112,646	70.8%	14.3%	17.9%	54.2%	37.2
St. Cloud, MN MSA	167,392	56.9%	13.1%	21.0%	56.7%	36.4
Waterloo--Cedar Falls, IA MSA	128,012	84.5%	12.6%	23.0%	52.7%	36.3
Fayetteville--Springdale--Rogers, AR MSA	311,121	64.2%	18.4%	22.4%	50.9%	33.0
Fort Smith, AR--OK MSA	207,290	61.6%	24.1%	13.8%	47.1%	35.6
Hot Springs, AR	88,068	63.3%	21.7%	18.0%	54.1%	42.5
Jonesboro, AR MSA	82,148	64.9%	21.2%	20.9%	51.7%	33.0
Little Rock--North Little Rock, AR MSA	583,845	72.8%	15.4%	24.8%	51.4%	34.7
Pine Bluff, AR MSA	84,278	69.3%	23.0%	15.7%	43.1%	35.1
Texarkana, TX--Texarkana, AR MSA	129,749	64.1%	21.4%	15.0%	43.8%	35.8
<b>Arkansas</b>	<b>2,673,400</b>	<b>52.4%</b>	<b>24.7%</b>	<b>16.7%</b>	<b>47.0%</b>	<b>36.0</b>
<b>United States</b>	<b>281,421,906</b>	<b>79.0%</b>	<b>18.2%</b>	<b>24.4%</b>	<b>49.3%</b>	<b>35.3</b>

Source: US Bureau of the Census, Census 2000

The total population of the Movers and Shakers was quite variable, ranging from a high of 5.2 million (in Dallas-Fort Worth, TX) to a low of just under 100,000 in Lawrence, KS. Out of the 22 MSAs, nine had populations greater than 1 million persons, two were between 500,000 and 700,000, two approximately 250,000, and eight between 100,000 and 200,000. The size of the population does not seem to be an explanatory variable in determining whether the MSA is a Mover or Shaker, although statistical analysis is limited, given the small number of MSAs involved. It is possible, though untested, that MSAs below 100,000 or above 5 million might find it difficult to achieve the growth rates and high per capita personal income identified in the Movers and Shakers, and thus are not represented.

The populations of the Arkansas MSAs ranged from more than 500,000 in the Little Rock MSA to just over 82,000 in the Jonesboro MSA, with four of the seven MSAs having a population exceeding 100,000. When ranked by total population, Arkansas MSAs were ranked at numbers 9 (Memphis), 11 (Little Rock), 13 (Fayetteville), 16 (Fort Smith), 21 (Texarkana), and 27 through 29 (Hot Springs, Pine Bluff, and Jonesboro).

The percentage of the population of each MSA living in an urban area exceeded 50% in every MSA; with a mean of 82.4%. For the nation as a whole, the percentage of the population living in urban areas was slightly lower, at 79.0%. In Arkansas, the average was 65.8%, even lower than both the national average and the Movers and Shakers.

In the U. S., 18.2% of the adult population is lacking a high school diploma. In the Movers and Shakers, the percentage of adults without a diploma ranged from 7.0% in Fort Collins-Loveland, CO to 33.0% in El Paso, TX. Only five of the Movers and Shakers had percentages higher than the nation, however; most of these were larger and highly urbanized MSAs, with the smallest, El Paso, having a population of nearly 680,000. The average percentage of adults with less than a high school education was 14.8%, clearly lower than the national rate, while in Arkansas, the average was 20.8%, substantially higher than both the Movers and Shakers and the national average.

Not surprisingly, El Paso also displayed the lowest percentage of adults with at least a bachelor's degree, 16.6%, while Lawrence, KS had the highest percentage, 42.7%. The average for the Movers and Shakers was 27.4% and for the U. S. the percentage with bachelor's degrees or more education was 24.4%. The highest percentage among the Arkansas MSAs was 24.8% in the Little Rock MSA and the lowest was 13.8% in the Fort Smith MSA, with the average of all Arkansas MSAs at 18.7%, much lower than for the Movers and Shakers and the U. S.

The percent of the population in the labor force may affect the per capita personal income because the population not in the labor force (those under 18 or over 65) is less likely to contribute large amounts of income to the total personal income of the MSA. In the case of the Movers and Shakers, the percentage ranged from 40.4% to 58.1%, with an average of 51.9%, somewhat higher than the national rate of 49.3%, while in Arkansas the average was 48.9% and ranged from 54.1% to 43.1%. Unemployment among the Movers and Shakers averaged 5.0%, slightly lower than the national rate of 5.72%, and a full percentage point below the Arkansas average of 6.0%.

The population of the Movers and Shakers was somewhat younger than the nation's population, with the median age in Mover and Shaker MSAs at 34.0, while the U. S. median age was 35.3. Median age varied widely among the Movers and Shakers, however. Atlanta, GA had the youngest population, with a median age of 27.5, while the oldest population, with a median age of 45.2, was found in Fort Collins-Loveland, CO. Among Arkansas MSAs, the median age ranged from a high of 42.5 in Hot Springs to a low of 33.0 in both Fayetteville and Jonesboro, both sites of major Arkansas universities which could account for the lower aged population.

## Contribution to Personal Income by Industry

Using 2004 data from the Regional Economic Information System of the Bureau of Economic Analysis, the industry structure of the Movers and Shakers, the Arkansas MSAs, and the remaining rural areas of Arkansas were compared, using location quotients of earnings by industry and total personal income. The location quotients of each group of MSAs were averaged together to arrive at one mean location quotient for each industry in all the Arkansas MSAs and all the highest growth MSAs. The location quotients for each industry were computed for all of rural Arkansas using the same method as was used for the MSAs. An LQ equal to 1.0 matches the U. S. average ratio of industry earnings to total personal income. The specific findings are detailed below. (For a discussion of Location Quotients, see Appendix B.)

The LQs for the Movers and Shakers ranged from 0.65 (for educational services) to 3.39 (for military income). Sixteen of the industry sectors displayed LQs exceeding 1.0, and the remaining seven had LQs below the national average. For the Movers and Shakers, this indicates that the 16 industries with LQs greater than one are contributing more to personal income in the MSAs than the industries are contributing nationally to U. S. total personal income as a whole. This is attributable to some combination of higher employment and higher average earnings in those industry sectors among the Movers and Shakers than in the U. S. Further study could be useful in determining what combination of employment and wages is responsible for the LQs varying from the national levels.

**Table 7**  
**Personal Income Quotients, 2004**

Industry Sector	Movers & Shakers	Arkansas MSAs	Rural Arkansas	AR MSAs- Rural Arkansas	Movers & Shakers- AR MSAs
Mining	1.91	1.34	0.82	0.53	0.57
Utilities	1.08	0.76	1.46	-0.70	0.33
Construction	1.14	0.79	0.58	0.21	0.35
Manufacturing	1.08	1.27	1.64	-0.38	-0.19
Durable goods manufacturing	1.15	1.02	1.48	-0.46	0.13
Nondurable goods manufacturing	1.25	1.57	2.24	-0.67	-0.33
Wholesale trade	0.98	0.98	0.51	0.47	0.00
Retail trade	1.12	1.04	0.88	0.16	0.08
Transportation and warehousing	1.21	2.03	1.31	0.72	-0.83
Information	0.83	0.55	0.27	0.28	0.28
Finance and insurance	0.83	0.53	0.29	0.24	0.30
Professional and technical services	0.83	0.61	0.20	0.41	0.23
Management of companies and enterprises	0.78	1.37	0.29	1.08	-0.59
Administrative and waste services	0.98	0.96	0.44	0.52	0.02
Educational services	0.65	0.36	0.43	-0.07	0.29
Health care and social assistance	1.01	1.21	0.80	0.41	-0.21
Accommodation and food services	1.10	0.77	0.59	0.18	0.33
Government and government enterprises	1.29	1.09	0.83	0.26	0.20
Federal, civilian	1.03	1.44	0.53	0.91	-0.41
Military	3.39	0.76	0.59	0.17	2.63
State and local	1.08	1.05	0.95	0.10	0.04
State government	1.07	1.44	0.96	0.48	-0.37
Local government	1.01	0.90	0.94	-0.05	0.11

Source: UALR-IEA Calculations based upon Regional Economic Information System, Bureau of Economic Analysis, U.S. Department of Commerce

Among Arkansas MSAs, the personal income LQs ranged from 2.03 for transportation and warehousing to 0.36 for educational services; i.e., the transportation and warehousing industry in Arkansas MSAs contributes more than twice the earnings to personal income than does its national counterpart, while educational services in Arkansas MSAs contributes only 36% as much as its U. S. counterpart to total personal income. In contrast to the Movers and Shakers, 12 of the Arkansas industries had LQs larger than 1.0, while 11 were below the national level. There did not seem to be a significant correspondence between LQs of the Arkansas MSAs and the Movers and Shakers.

The LQs of the rural areas in Arkansas (i.e., those areas outside MSAs) present a completely different picture than that observed in the MSAs inside and outside Arkansas. Only five industry sectors in rural areas contributed more than their U. S. counterparts to total personal income, while nearly 80% (18 industries) had LQs below one. The highest LQ in rural Arkansas was 2.24, in nondurable good manufacturing, while the lowest was 0.20, for professional and technical services. As discussed above, this is due to the particular combination of wages and employment found in rural Arkansas. It is apparent from the data that many of the more labor-intensive industries, and those which may require more highly educated employees, contribute very little to the Total Personal Income in rural Arkansas.

Interestingly, in all three areas (Movers and Shakers, Arkansas MSAs, and rural Arkansas), industries with the five lowest LQs were the same: educational services, finance and insurance, management of companies and enterprises, information, and professional and technical services. There was one exception to this, however: the management of companies and enterprises LQ in Arkansas MSAs was 1.37. These five low-ranking industries are all relatively labor intensive, and may employ a higher percentage of more highly skilled or educated workers than more capital-intensive industries. Further study of this could be helpful.

## Knowledge-based Industries and the Innovative Process

The economy of Arkansas and the economies of its MSAs have economic growth paths that will not eliminate the PCPI gaps in the near term. If knowledge-based industries are to provide the emphasis for closing PCPI gaps, then an atmosphere favorable to the creation of innovative activities, processes, and networks must be encouraged.

A chained-link model of the innovative process views innovation as an interactive process with feedback effects<sup>7</sup> (The Positive Sun Strategy, Academic Press, Washington pp. 275-305). New inventions, products, or processes based on novel knowledge within a business leads to product development, testing, retesting, production, marketing, and distribution. Feedback loops link these activities together. Specific firm knowledge has external linkages to other activities and groups. These external linkages include such possible interactions between different groups such as suppliers of inputs, research institutions, universities, and even competitors. Key to the interaction is cooperation between the internal and external groups. Cooperation gives rise to networks and complex interplay between groups creating an innovation process with its characteristic knowledge creation, research and development, diffusion, and use.

In the New Economy, knowledge creation, knowledge use, and innovations are key drivers for economic development and growth. If Arkansas' PCPI gap is to be closed, it is critical that Arkansas' economy be based on innovative processes. In this new innovative economy, Arkansas' industrial structure must pay employee's wages above national averages, and occupation earnings must also exceed the national counterparts. Arkansas occupational and industrial mixes must therefore shift toward activities that are conducive to the innovative environment.

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<sup>7</sup> Kline, S. J. and N. H. Rosenberg. "An Overview of Innovation." In Landau R. and N. Rosenberg (eds.)

## Industrial Sectors and Occupations in Arkansas Conducive to Closing the PCPI Gap

For Arkansas to eliminate the PCPI gap, its future industrial mix must provide employment opportunities that pay wages that are at least as high as the average national wage. Likewise, employment growth in the occupations must be in professions that pay wages at least comparable to the national wage counterparts, and workers need to gain the skills and knowledge to enter these occupations. In addition, the occupational mix of the labor force must correspond to an industrial mix that offers employment opportunities paying wages above the national average. The industry and occupational growth requirements are two sides of the same coin. There must be a favorable industrial mix and complementary occupational mix made up of industries and occupations that pay wages above the national average to eliminate earning gaps that are part of the state's PCPI gap.

### Industrial Mixes in Arkansas Conducive to Closing the PCPI Gap

As discussed earlier, a major component of PCPI is earnings or wages and salaries. To close the PCPI gap in Arkansas, wages and salaries must approach and then exceed their national averages. Furthermore, earnings within a community depend on the community's industrial mix and occupation mix. These mixes must be favorable in the sense of providing higher than average earnings to enable the PCPI gap to close. This section of the report looks at Arkansas mixes to identify the industries and occupations that are contributing to closing the PCPI gap. (*A more detailed analysis is presented in Appendix C*).

**Table 8**

#### Arkansas Industrial Groups: Employment and Relative Wage Comparison, 2004

Industrial Sectors	AR Emp#	AR Emp %	AR Avg Annual Wage	US Avg Annual Wage	Ratio US Industry to US Ave Wage	Ratio of AR Industry to AR Avg Wage	Ratio of AR Industry to US Avg Wage
NAICS 11 Agriculture, forestry, fishing and hunting	14,698	1.6%	\$25,722	\$22,337	0.57	0.86	0.66
NAICS 21 Mining	3,932	0.4%	\$41,952	\$66,632	1.70	1.41	1.07
NAICS 22 Utilities	6,530	0.7%	\$60,975	\$72,403	1.85	2.05	1.56
NAICS 23 Construction	51,332	5.4%	\$30,659	\$40,521	1.04	1.03	0.78
NAICS 31-33 Manufacturing	203,676	21.6%	\$33,258	\$47,861	1.22	1.12	0.85
NAICS 42 Wholesale trade	45,938	4.9%	\$43,601	\$53,310	1.36	1.46	1.11
NAICS 44-45 Retail trade	130,696	13.9%	\$19,515	\$24,415	0.62	0.65	0.50
NAICS 48-49 Transportation and warehousing	54,602	5.8%	\$34,066	\$38,834	0.99	1.14	0.87
NAICS 51 Information	20,176	2.1%	\$38,770	\$60,722	1.55	1.30	0.99
NAICS 52 Finance and insurance	35,924	3.8%	\$41,574	\$70,129	1.79	1.40	1.06
NAICS 53 Real estate and rental and leasing	13,230	1.4%	\$24,648	\$37,304	0.95	0.83	0.63
NAICS 54 Professional and technical services	33,697	3.6%	\$44,010	\$62,547	1.60	1.48	1.12
NAICS 55 Management of companies and enterprises	22,791	2.4%	\$65,066	\$80,054	2.05	2.18	1.66
NAICS 56 Administrative and waste services	51,596	5.5%	\$18,866	\$27,231	0.70	0.63	0.48
NAICS 61 Educational services	7,989	0.8%	\$25,191	\$35,444	0.91	0.85	0.64
NAICS 62 Health care and social assistance	128,607	13.7%	\$31,545	\$36,712	0.94	1.06	0.81
NAICS 71 Arts, entertainment, and recreation	9,127	1.0%	\$13,849	\$27,607	0.71	0.46	0.35
NAICS 72 Accommodation and food services	81,750	8.7%	\$10,679	\$14,707	0.38	0.36	0.27
NAICS 81 Other services, except public administration	25,752	2.7%	\$22,295	\$25,152	0.64	0.75	0.57
<b>Total Employment /Emp %/Average Annual Wage All Industries/ Ratio of Average Wage AR to US</b>	<b>942,043</b>	<b>100%</b>	<b>\$29,802</b>	<b>\$39,134</b>			<b>0.76</b>

Source: U.S. Department of Labor, Bureau of Labor Statistics. <ftp://ftp.bls.gov/pub/special.requests/cew/>

Data in Table 8 compare annual wages in Arkansas and the U. S. for 2004 by major industrial sectors.

The purpose of the comparison is to identify industries in Arkansas that are helping to close the PCPI gap by paying average wages above the national average wage. For each industrial sector, the Table 8 shows the number of employees (*AR Emp #*), the percentage breakdown of employment by industry for the state (*AR Emp %*), Arkansas average annual wage (*AR Avg Annual Wage*), and the U.S. average annual wage (*U.S. Avg Annual Wage*). Comparisons of relative wages by industry in the U. S. (*Ratio of U.S. Industry to U.S. Avg Wage*), Arkansas (*Ratio of AR Industry Wage to AR Avg Wage*), and Arkansas to the U.S. (*Ratio of AR Industry to U.S. Avg Wage*) are shown in the last three columns of Table 8. A ratio of wage by industry identifies an industry that pays above an average wage whenever the ratio's value exceeds unity. Thus, for 2004 in the U.S., mining; utilities; construction; manufacturing; wholesale trade; finance and insurance; real estate and rental and leasing; professional and technical services; and management of companies and enterprises were industries that paid above average wages in the nation. In Arkansas, industries that paid average wages above the national average included mining; utilities; construction; wholesale trade; finance and insurance; professional and technical services; and management of companies and enterprises. These are the industries in Arkansas that contributed to closing the PCPI gap in 2004. Overall, the average wage in Arkansas is 76% of the national average wage.

In Appendix B, findings from a detailed analysis of Arkansas' MSA industrial sectors are presented. The analysis identifies industry sectors where employment growth at prevailing wages would have the potential to narrow the PCPI gap across Arkansas MSAs.

## **Occupations in Arkansas Conducive to Closing the PCPI Gap**

Major occupational groups are listed in Table 9 along with the corresponding occupational counts, median annual wages for Arkansas and the U. S., and relative wage comparisons. Comparing the annual median occupational wage between Arkansas and the U. S. for 2004 indicates that in general median earnings are less in Arkansas than the U. S. across occupations. The only exception for this list of occupation groups is the farming, fishing, and forestry occupational group. The ratio of Arkansas' occupational median to the U. S. median wage for all occupations identifies the relative occupational wages. Occupational groups that pay high wages relative to the U. S. median wage for all occupations include management occupations; business and financial occupations; computer and mathematical occupations; architecture and engineering occupations; life, physical, and social science occupations; legal occupations; and healthcare practitioners and technical occupations. Growth in the number of workers in these occupations at the prevailing median annual wage would contribute to closing the state's PCPI gap.

In Appendix C, the findings from a detailed analysis of Arkansas' MSA occupational groups are presented. This analysis identifies occupational groups at the MSA level where employment growth at prevailing median annual wages would have the potential to narrow the PCPI gap by Arkansas MSAs.

In conclusion, looking at the historic evidence of convergence, the state's PCPI gaps have narrowed, but not rapidly. At the current rate of convergence, closing the state's PCPI gap in the foreseeable future will not be successful. To raise PCPI in Arkansas, policies must be devised to enhance the rate of convergence of PCPI to the national level. For success, these new policies must focus on ways to alter the current growth path of PCPI.

**Table 9**  
**Arkansas Occupational Groups: Employment and Relative Wage Comparison, 2004**

Occupational Title	AR EMP#	AR EMP %	AR Median Annual Wage	US Median Annual Wage	Ratio of AR Occ to All Occ in AR	Ratio of Us Occ to All Occ in US	Ratio of AR Occ to US Median All Occ
Management occupations	44510	3.9%	\$61,700	\$75,960	2.35	2.33	1.86
Business and financial operations occupations	34210	3.0%	\$40,620	\$51,000	1.53	1.53	1.21
Computer and mathematical occupations	13180	1.2%	\$44,700	\$63,440	1.63	1.77	1.29
Architecture and engineering occupations	12690	1.1%	\$48,000	\$59,410	1.70	1.68	1.34
Life, physical, and social science occupations	7590	0.7%	\$42,560	\$51,150	1.58	1.54	1.25
Community and social services occupations	13110	1.2%	\$26,690	\$33,940	1.01	0.99	0.80
Legal occupations	5410	0.5%	\$42,330	\$62,400	1.83	2.17	1.45
Education, training, and library occupations	65930	5.8%	\$34,640	\$39,170	1.21	1.14	0.95
Arts, design, entertainment, sports, and media occupations	8120	0.7%	\$27,190	\$36,400	1.06	1.17	0.84
Healthcare practitioners and technical occupations	62460	5.5%	\$39,420	\$48,470	1.64	1.56	1.30
Healthcare support occupations	30160	2.7%	\$17,800	\$21,950	0.65	0.63	0.52
Protective service occupations	22920	2.0%	\$25,350	\$30,790	0.92	0.94	0.72
Food preparation and serving related occupations	87930	7.8%	\$13,620	\$15,900	0.50	0.47	0.40
Building and grounds cleaning and maintenance occupations	33810	3.0%	\$16,330	\$19,540	0.60	0.58	0.47
Personal care and service occupations	19540	1.7%	\$14,210	\$18,280	0.54	0.59	0.43
Sales and related occupations	113090	10.0%	\$18,310	\$21,860	0.87	0.86	0.69
Office and administrative support occupations	178200	15.7%	\$22,180	\$26,960	0.82	0.78	0.65
Farming, fishing, and forestry occupations	7400	0.7%	\$22,980	\$17,350	0.82	0.55	0.65
Construction and extraction occupations	46850	4.1%	\$26,900	\$34,330	0.97	1.01	0.77
Installation, maintenance, and repair occupations	52920	4.7%	\$29,880	\$35,520	1.07	1.00	0.85
Production occupations	156860	13.8%	\$22,940	\$26,480	0.85	0.79	0.67
Transportation and material moving occupations	116930	10.3%	\$23,150	\$24,240	0.89	0.75	0.70
<b>All Occupations</b>	<b>1133800</b>	<b>100.0%</b>	<b>\$23,780</b>	<b>\$37,440</b>			<b>0.79</b>

Source: Occupational Employment Statistics (OES) Survey, Bureau of Labor Statistics, Department of Labor. <http://stat.bls.gov/oes/home.htm>.



# Strategies for Success in the New Economy

## Types of Economic Development Goals and Strategies

There are four ways in which economic development occurs in communities: attraction of new businesses, creation of new businesses, retention of existing businesses, and expansion of existing businesses. For many decades, because of the employment generated by manufacturing industries, and because of the ways in which developers were rewarded, attraction of new businesses was the primary goal undertaken by many economic developers. Today, given the current economic development trends, more attention has focused on the remaining three development activities, and strategies have evolved to achieve all four goals.

There are many different economic development strategies available to developers, but they all may be classified into the following three fundamental categories:

- 1. Infrastructure and labor force development.** In its most elemental form, this refers not just to the physical attributes of a business site, but to all assets available to the business throughout

a community, including the labor force and the community as a whole. In other words, any activities to provide a business with the location attributes it needs to successfully compete may be considered to fall within the category of infrastructure development. Development of the infrastructure, particularly of the workforce, may take several years to accomplish successfully.

- 2. Direct business assistance.** Business assistance may take the form of grants or loans, new business incubators, employee training programs, or a host of other activities performed primarily by the public and nonprofit sectors. As discussed above, governments play a crucial role in economic development. Their policies and procedures can influence the success or failure of businesses through taxation and regulation of business activities, as well as playing an equally important role in the infrastructure development of a community. Good communication among the various economic sectors is essential for successful government policy creation, providing for needs among constituencies that sometimes are at odds with one another.
- 3. Marketing activities.** Economic developers perform marketing activities to communicate the assets of a community to potential businesses, and to educate members of a community about the potential costs and benefits of various economic development policies and activities. These are often the most visible of the developer's activities.

## An Overview of Strategic Responses to the New Economy

In Arkansas, the traditional economic development strategy has been built primarily upon recruitment of manufacturing industries, with some attention to building small businesses and developing service and retail industries. For some time, this strategy was relatively successful, adding jobs and increasing per capita personal income among the population. The global changes of the past two decades have resulted in the New Economy, a knowledge-based economy, requiring a new paradigm for economic development to continue in Arkansas. Not only must development activities change, but the vision and overarching goals of communities in Arkansas must adapt. In the new paradigm, economic development must be viewed as a process with the goal of increasing the standard of living of the population, not merely providing the population with jobs. It is irrevocably entwined with community development, each dependent upon the other, with synergistic effects upon the community.

Success in the New Economy requires a mindset that views economic development as increasing the economic well-being of the population, providing community members with a comfortable, secure standard of living rather than simply increasing the number of jobs. A community's economy must be healthy, competitive, and sustainable; but building such an economy requires a holistic approach to development involving the civic, social, and physical infrastructures; care of the culture and environment; and workforce and business development. Development is a process that brings together public and private investment in the infrastructures leading to a desirable community environment and a productive, capable workforce. MDC, Inc., of North Carolina urges both urban and rural communities to make a transition from an emphasis upon growth as a goal to an emphasis on development as a goal.<sup>1</sup>

Numerous strategies and tactics have been applied in communities throughout the country in attempting to make the transition to the New Economy. A basis for success in many communities is the adoption of an "entrepreneurial" attitude: one in which the community is ready to face change and challenges as they occur, unafraid of the risk of the unknown. In these communities, culture and tradition, though respected, do not dictate future responses. Leadership is crucial in the widespread adoption of this paradigm throughout the community, making leadership development an essential task, indeed, a requisite in achieving the goal of economic development.

As the community begins to adopt the new economic development paradigm, and acquires a realistic view of itself, it can begin to develop a vision for the future. By performing an assessment of its own unique assets and liabilities, it can create customized strategies that will diminish the liabilities and make use of the assets, to take advantage of the opportunities created by the New Economy. In general, these strategies may include some form of assisting existing industry in adapting to the New Economy, such as developing industry clusters; providing the assistance needed to encourage entrepreneurship; and building the assets and resources needed to allow future development to occur. The successful strategies will be as varied as the communities in which they are carried out, since each community has its own competitive advantages to enhance and disadvantages to overcome.

<sup>1</sup> MDC, Inc. The Building Blocks of Community Development. May 2002 [Online] Available: <http://www.mdcinc.org/>.

## Geography-based Strategies

The demographic and socioeconomic differences between urban and rural areas create different competitive advantages and economic development challenges in each geographic area. It follows, then, that development strategies that work in urban areas may not work (or work as well) in rural areas, and vice versa. The National Governors' Association addressed this issue recently when they published recommendations for state policy options for economic development in states, in metropolitan areas, and in rural areas, as well as for states as a whole. They view metropolitan economic strategy as a way to jump-start economic growth throughout a region, while rural strategies are geared more toward areas with underdeveloped assets and a relatively homogeneous economic base.

### Statewide Strategies

The National Governors' Association makes a number of recommendations for state government strategies to encourage economic development in the New Economy. Their recommendations are built around three topical areas: building up the state's infrastructure, both physical and intellectual; reshaping the economic environment in the state; and reengineering state government. Specific strategies include the following<sup>2</sup>:

1. Invest in early childhood development by redefining education to start at birth, improving the quality of early childhood experiences, improving access to quality early care and education, and improving coordination among early childhood programs.
2. Continue progress in elementary and secondary education reform by supporting the implementation of high academic standards for student achievement; developing and implementing assessments aligned with state standards; creating policies to hold districts, schools, educators, and students accountable for student learning; creating induction programs for new teachers and principals and providing professional development for instructional staff; promoting reforms in higher education that lead to improved teacher preparation; and facilitating the creation of partnerships between higher education institutions and elementary and secondary schools.
3. Invest in the higher education system by expanding capacity to meet demand, improving quality and rewarding innovation, and improving access to postsecondary education.
4. Support workforce training by advancing market based strategies (i.e., providing choices to workers, and creating systems that encourage competition among providers); building a skill-based system, and promoting public-private partnerships.
5. Create a research and development presence by investing in the state's R&D infrastructure in their higher education systems; encouraging university-industry interaction; and facilitating technology transfer and commercialization.
6. Enhance the physical infrastructure by improving the telecommunications infrastructure to ensure wide availability of a high capacity, high efficiency telecommunications network.

<sup>2</sup> National Governors' Association Task Force on the New Economy. *State Strategies for the New Economy*. Washington, D.C.: National Governors' Association, 2000.

7. Assist entrepreneurs and business start-ups by providing help in finding capital, especially the gap usually filled by venture capitalists; providing technical assistance through small business development centers, technology development corporations, and incubators; providing tax credits to individuals who invest in certified venture capital pools or in-state businesses; improving state securities regulations; and streamlining licensing and registration procedures.
8. Realign the state tax system to recognize changes in industry structure, the presence of e-commerce, and changes in regulated industries (e.g., utility companies).
9. Examine regulations and remove the potential for market distortion by creating a regulatory environment that is customer-focused, responsive, flexible, and performance-based.
10. Pay attention to quality of life issues (since they strongly influence location decisions in the New Economy) by assuring that the physical environment is in good condition, healthy and safe to live in; there are cultural amenities, recreational opportunities, and support systems for working families available; there are policies to steer development and check unrestrained growth; and there are efforts to revitalize and redevelop distressed cities and neighborhoods.
11. Create a results-based government by articulating clear policy goals and measuring progress toward achieving them; informing the public and mobilizing communities to achieve the goals; directing resources to achieve the goals; managing for continuous improvement in service quality and effectiveness; and shifting accountability from complying with regulations to achieving results.
12. Decentralize decision making by delegating responsibilities to local officials and sharing in the savings achieved as a result of improved conditions.
13. Employ public-private partnerships, leveraging community resources to address social and economic needs.
14. Explore privatization of government functions.
15. Use technology to improve and transform service delivery, as is currently done in Arkansas to register automobiles, pay taxes, or other citizen-government transactions.

A statewide strategy to encourage development of high-technology and knowledge-based businesses was recently implemented in Kentucky. There, the governor's office developed its "Knowledge-Based New Economy Initiative." It focuses on university-based instruction and laboratories to generate, attract, and expand high-technology businesses and industries in the state. The two major universities in the state, the University of Kentucky and the University of Louisville, are integral partners in the strategy, and participate in creating educational and outreach programs that will benefit targeted industries and firms, and in promoting the state as a place to locate desirable firms. For example, to promote the biotechnology industry in Kentucky, the two universities and the state government made a coordinated presentation at the international conference of the Biotechnology Industry Organization, each university describing the colleges and other assets that would be useful to the industry.<sup>2</sup>

## Metropolitan Responses to the New Economy

For metropolitan areas, the National Governors' Association recommends the following state-level strategies<sup>3</sup>:

1. Identify regions surrounding cities that are based upon common interest and a sense of mutual benefit to the citizens and businesses of the area, and develop action plans to promote citizen identification with the region, and support of the region, as opposed to identification and support based upon political boundaries. Product markets and labor markets operate throughout these regions without regard to political boundaries, so business development (especially of large, recruited firms) will likely be based on regional more than local site characteristics.
2. Provide leadership, legal and financial assistance, and encouragement for the creation and sustenance of regional partnerships, including those which cross state boundaries.
3. Establish governance structures for regional metropolitan coordinating bodies, providing seed funds for organizational development, professional and entrepreneurial training, technical assistance, and strategic planning. Offer competitive financial and regulatory incentives for regional initiatives. Encourage flexibility and innovation in state and local laws, regulations, and procedures that affect investment, jobs, and prosperity.
4. Invest in assets that will drive economic development in the region: infrastructure, education, workforce development, the environment, culture, recreation, services, and other amenities that are sought by the growth firms of today: knowledge-based, technology-intensive, and global in scope.
5. Promote industry clusters by tailoring strategies to fit the asset base and business mix of the metropolitan region, and provide the clusters with ways to continually improve and become increasingly competitive.
6. Build on the strengths of the central city in the context of metropolitan economic growth, understanding the role to be played by the city in the regional economy.
7. Reinvest in downtown areas and neighborhoods, reducing or eliminating blight, and creating an environment that will encourage a net migration into the city by new residents and businesses.
8. Connect central city residents to metropolitan jobs using employment training and placement, effective transportation networks, childcare, and other incentives and services to provide an adequate labor market throughout a region.

<sup>3</sup> Weiss, Marc A. *State Policy Approaches To Promote Metropolitan Economic Strategy*. Washington, D.C.: National Governors' Association Center for Best Practices, 2002. [Online]. Available: <http://www.nga.org/>.

## Economic Development Strategies Implemented in U.S. Metropolitan Areas

A variety of innovative economic development strategies and tactics are being employed in cities throughout the country; many focusing on entrepreneurship and small business growth, development of a well-educated labor force, improvements in technology infrastructure, and lifestyle enhancements. Several examples of these approaches follow. Since most of these strategies, as well as those described as applied in rural areas, are relatively new, the long-term, lasting effects of the strategies upon economic development are not yet known.

- **Buffalo, NY.** The Buffalo One-On-One program is a joint effort by the city and the local economic development corporation (known as BERC) to encourage business retention and expansion. The program has four major elements: visitations to businesses, responses to specific business needs and concerns, use of electronic technologies for better communications among service providers, and a company database. The annual sales visit is made by a BERC account manager to CEOs of around 1,000 local companies to build relationships between the companies and the government and economic development community; to link firms with resources and local government advocacy; and to learn about CEOs' attitudes about the local and state business climates. A business response team addresses pressing business issues within 48 hours of identification. The database is used to help make Buffalo more competitive and responsive to the needs of businesses by tracking opportunities, threats, and trends affecting the industries in which the firms operate, and using the information to help design future city policy. Source: United States Conference of Mayors. Best Practices Database [Online]. Available: <http://www.usmayors.org/>
- **Charleston, WV.** The city of Charleston has a popular annual week-long festival that draws 150,000 people from the city and surrounding region, including many who are low-income or are job-seeking. To capitalize on the popularity of the festival, the city began to present a job-training fair at the same time. The focus is on job training available to residents through local governments, public and private agencies, and employers. The area has a large number of training opportunities available, beginning with a technical assistance project of the U. S. Department of Housing and Urban Development (HUD). The project required that economic opportunities generated by HUD financial assistance be given when possible to low income persons, especially if they are receiving government housing assistance, and to businesses that provide economic opportunities for those persons. Charleston was one of 40 cities in the country that tested the thesis that a coordinated, intensive effort by federal, state, and local governments; social service and job training agencies; and labor organizations would increase job training and employment opportunities for low income residents with no increase in HUD funds. The city created a task force to include all the organizations (public, nonprofit, and private sectors) that provided services to these residents, or were otherwise interested parties. The group began planning the job training fair, created an intensive advertising campaign, and ultimately provided information about job training opportunities to 425 residents at the festival. The fair included representatives of 16 nonprofit groups, 10 government agencies, and three private companies. More than 300 who attended the fair ultimately received job training. Subsequent job fairs have increased both in the number of representatives and number of citizens attending. Source: United States Conference of Mayors. Best Practices Database [Online]. Available: <http://www.usmayors.org/>

- **Dayton, OH.** A nonprofit corporation was created to offer venture capital to businesses and to help to commercialize new technologies to convert companies with defense-related markets to commercial markets. The organization includes public and private board members and has autonomy, but has had difficulty attracting enough private-sector capital to give it the amount of financial flexibility it needs to be totally successful. Source: Center for Economic Development Services. Innovative Local Economic Development Programs [Online]. Available: <http://www.eda.gov/>.
- **Memphis, TN.** Beginning more than 20 years ago with the start of Federal Express, the Memphis metropolitan area has developed into a global distribution center. Much of the success of the region is based upon massive investment into the transportation infrastructure by both the public and private sectors. The city of Memphis, Shelby County, and the state of Tennessee have all contributed to improvements in the international airport and the local and regional highway system (with coordinated efforts by the state governments of Arkansas and Mississippi). Additional improvements were made in the waterways and ports of the area, as well as rail capacity and infrastructure. The strategy has been successful in creating more than 30,000 jobs through FedEx alone, plus thousands of related jobs in the metropolitan area. Source: Weiss, Marc. State Policy Approaches to Promote Metropolitan Economic Strategy [Online]. Available: <http://www.nga.org/>.
- **Providence, RI.** To keep artists living and working in Providence and to redevelop an older downtown area, the city of Providence created an Arts and Entertainment District. Already located in the area there were the Providence Performing Arts Center, a variety of visual and performing arts organizations and individuals, and appropriate building space (after refurbishment) for performances, apartments, and studios. To encourage artists to live and work there, the state legislature passed income and sales tax breaks for artists in the district. Demand for space is high, and a now permanent commission places artists in spaces, identifies qualifying homes and studios, encourages private investment, and works with property owners on building renovations. The district is considered a complement to the entire downtown area, which is also being redesigned by relocating railroad tracks, building parks and river walkways, and constructing a convention center. Private investment in the area includes a Westin Hotel, a first-run movie theater in the district, and an upscale shopping mall. Source: United States Conference of Mayors. Best Practices Database [Online]. Available: <http://www.usmayors.org/>
- **St. Louis, MO.** Faced with an exodus of its middle class to suburbs and an aging infrastructure of roads, parks, and sewers, Mayor Francis G. Slay has led an effort to revitalize the city through the use of historic preservation. City officials convinced the Missouri State Legislature to provide a state historic tax credit that made historic rehabilitation attractive to developers and created a foundation to rebuild the market for real estate throughout St. Louis. The city now has positive migration into the city, at least 12 historic districts, and more buildings nominated for inclusion into the National Register than most other cities in the country. Along with the tax incentive, the city sees to it that historic ordinances are strictly enforced, and has eliminated problems with rundown properties and absentee landlords by strict code enforcement. To date, more than 5,000 problem properties have been successfully resolved. Through teamwork between city hall departments and the St. Louis Police Department; leadership willing to be honest about the city's weaknesses and take action about them; and creative problem solving, the city is experiencing a revival. Retailers are moving back into the city, new restaurants are bringing in diners from throughout the region, and entrepreneurial retailers have become successful in several new downtown and midtown districts of the city. Source: United States Conference of Mayors. Best Practices Database [Online]. Available: <http://www.usmayors.org/>

- **San Mateo, CA.** To respond to the need for high-tech job training for local employers, several city organizations partnered to create SMILE-IT, a program that trains at-risk high school aged youth. Partners include the local police department, the public library, the community development department of the city, a local community college, and area businesses. Participating youth are identified by the San Mateo Police Department (including some youthful offenders who have served jail time) and recruited by the college. Businesses participate during the development of each training program to ensure that the training will meet their needs. The College of San Mateo provides space and instructors, and the Police Department provides stipends and financial incentives to the youth. The library recruited trainees, provided on-the-job training and stipends, and eventually hired several graduates. The city's Community Development Department coordinated the development and implementation of the project and provided Community Development Block Grant funds to purchase computer equipment and materials, and to pay instructors and provide support services. In later years, several private and nonprofit organizations have provided funding and sponsorship for the program. Source: United States Conference of Mayors. [Best Practices Database](#) [Online]. Available: <http://www.usmayors.org/>
- **Tampa, FL.** To expedite the process of real estate development and permitting, the city of Tampa created a Construction Service Center. The Center houses all permit-related staff under one roof in a location easily accessible by businesses. The Center provides one-stop permitting for both commercial and residential projects. Site and building reviews are now conducted by personnel at the Center, who can make final decisions about reviews. The Center is an attempt to provide better customer service to the development industry, and continues to improve its services by adding express permitting; telephone, fax, and electronic data transmission; and an advisory committee to study the processes and make recommendations about efficiency and user friendliness. Source: United States Conference of Mayors. [Best Practices Database](#) [Online]. Available: <http://www.usmayors.org/>
- **Topeka, KS.** In 2004, the mayor of Topeka announced a program to attract and retain young talent to help with workforce needs. The city partnered with the University of Kansas to announce the Advantage Topeka Loan Program, a loan forgiveness program for Kansas University graduates with needed occupational skills who return to work in the city. The program provides up to \$5,000 in loans per student, and forgives the loans if certain students from Topeka return to work in the city after their graduation from University of Kansas at Lawrence. The loan will be matched by other types of financial assistance, including scholarships, grants, and other loans, from the KU Endowment Association. To be eligible, students need to be making successful academic progress toward certain degrees, based on skills lacking in Topeka. Currently, eligible degree programs include those used in construction; transportation; computer installation, maintenance, and repairs; engineering; architecture; and health care. Source: United States Conference of Mayors. [Best Practices Database](#) [Online]. Available: <http://www.usmayors.org/>
- **Tulsa, OK.** Through the leadership of the Tulsa mayor, a summit of community leaders from Tulsa and Tulsa County was held to create "Vision 2025." The summit participants created leadership teams and held open forums with heavy citizen involvement to create an economic development plan for 2025. The result was four separate ballot initiatives that increase the sales tax to support 34 projects, incentives, and improvements in Tulsa and other Tulsa County communities. Each ballot proposition received at least 60 percent support from voters. The funds raised through the ballot issues total \$865 million, and includes \$350 million in incentives to bring a Boeing assembly plant to the city; \$22.3

million for capital improvements for the Tulsa maintenance facility of American Airlines; \$350.3 million for education, health care, and event facilities; and \$157.4 million for capital improvements and community enrichment projects. Every community in Tulsa County will see some benefits from the effort; funds are to be fairly allocated on a per capita basis. The process used to create the plan and pass the initiatives is being viewed by many other cities as a model for their efforts. Source: United States Conference of Mayors. Best Practices Database [Online]. Available: <http://www.usmayors.org/>

- **Worcester, MA.** A nonprofit economic development organization in Worcester, Massachusetts owns and manages a biotechnology business park in the city. The development of the park was guided by another nonprofit educational and research organization with participation by higher education partners. The park lowers entry barriers to small local biotech firms in the area by locating them close to academic, scientific, and technology resources. Source: Innovative Local Economic Development Programs [Online]. Available: <http://www.eda.gov/>.

## Rural Responses to New Economy Challenges

State governments may find the following strategies from the National Governors' Association Center for Best Practices more appropriate for rural areas.<sup>4</sup>

1. Encourage the development of industry clusters to include both public and private resources for related industries, such as using colleges and universities as training centers to provide workforce development opportunities. The cluster approach can be useful for states to provide access to capital and technical resources in rural areas, as well as in urban areas.
2. Facilitate rural entrepreneurship by providing access to capital, using budget appropriations or venture capital fund intermediaries; by creating training programs that develop the local leadership capacity to identify and encourage local entrepreneurs; and by using technology such as online networks to allow rural entrepreneurs to connect to information and financial resources.
3. Diversify and add value to agriculture through product development, to allow farmers and local entrepreneurs to retain value added activities rather than selling agricultural commodities at low margins, by providing financing mechanism and by providing infrastructure and technical support for new marketing activities and product development.

## Recent Rural Development Strategies Implemented

Rural areas throughout the U. S. have responded to economic development challenges by implementing a variety of innovative strategies and tactics. They often are anchored by a new emphasis on regionalism, and concentrate on providing resources to existing businesses, increasing the size and capabilities of the workforce, and providing new access to markets for value added products and services. Several examples of the new strategies follow. (Note: for classification purposes, examples of localities with central cities of 50,000 persons or less were considered to be rural.)

<sup>4</sup> Kalomaris, Paul. Issue Brief: Innovative State Policy Options To Promote Rural Economic Development. Washington, D.C.: National Governors' Association Center for Best Practices, 2003.

- **Aberdeen, SD.** A public-private partnership of community and regional organizations was created and is coordinated by a local council of governments. The partnership developed an incubator for telecommunications-based businesses, and offers services to educators, health care professionals, wholesale and retail businesses, manufacturers, and the general public. The initiative was part of a larger strategy to diversify the regional economy by concentrating on information technology services. Source: Innovative Local Economic Development Programs [Online]. Available: <http://www.eda.gov/>.
- **Alexandria, MN.** The local technical college in Alexandria serves as a broker for a cluster of firms in the region that utilize automation and motion control technologies. The primary base of the technologies comes from a local packaging machinery cluster, a historical strength in the area. In the 1990s, the Alexandria Technical College formed the Center for Automation and Motion Control and provides customized training programs for local firms, along with the college's traditional fluid power technology, manufacturing engineering technology, and machine assembly programs. Additional resources for the cluster are available through a local arm of the Minnesota Manufacturing Extension Partnership, located at the Center for Automation and Motion Control. Source: Munnich, Jr., Lee W., Greg Schrock, and Karen Cook Rural Knowledge Clusters: The Challenge of Rural Economic Prosperity. Minnesota: University of Minnesota, 2002.
- **Littleton, CO.** The Business and Industry Affairs Department of the city of Littleton, Colorado created an informal partnership with a nearby research center. It now provides a large variety of research-based information services to business firms in the area. The partnership allows the city to provide service in a timely manner, based upon current and anticipated needs of area firms. Source: Center for Economic Development Services. Source: Innovative Local Economic Development Programs [Online]. Available: <http://www.eda.gov/>.
- **Mankato, MN.** An industry cluster developed around a local specialization in wireless technologies. The cluster consists of two regional wireless service providers and several smaller electronic component manufacturers, along with the Institute for Wireless Education, a program developed by Minnesota State University-Mankato and South Central Technical College. Organizational leadership for the cluster is provided by a nonprofit Wireless and Communications Technology Alliance, while radio clubs and other informal organizations have facilitated networking and social capital among knowledgeable individuals, speeding up the technology transfer process. Historically, Mankato was the home of a successful manufacturer of two-way radio systems and created a large base of local knowledge in radio frequency technology. As the original company lost ground thirty-some years ago, some of its employees created new firms to offer engineering and contract manufacturing for communications technology and wireless components. The university and college created a joint educational program to provide basic and advanced informational training about wireless technologies. The effect of this cluster has been to create a competitive advantage in wireless technologies for Mankato. This has been helpful in both attracting new firms and creating start-up companies in the area. Source: Munnich, Jr., Lee W., Greg Schrock, and Karen Cook Rural Knowledge Clusters: The Challenge of Rural Economic Prosperity. Minnesota: University of Minnesota, 2002.
- **Pueblo, CO.** A partnership was created among two Colorado cities and two research institutes to introduce businesses to the marketing capabilities of the Internet. The four partners share ideas with each other to enhance their presence on the Internet. The open sharing of ideas and technologies

allowed timely adaptation to changing technologies and client needs. Source: Innovative Local Economic Development Programs [Online]. Available: <http://www.eda.gov/>.

- **Roseau and Thief River Falls, MN.** Polaris and Arctic Cat are the only two domestically owned snowmobile manufacturers, and were both created in this rural region of northwestern Minnesota. They share a network of supply firms located throughout Minnesota. The two firms faced fierce competition from Japanese manufacturers in the 1970s and 1980s, and were plagued by the seasonality of their business. They both had the same responses to the threats: they expanded their product lines to include all-terrain vehicles to decrease their seasonality, and they began to specialize in the market for racing snowmobiles. While national markets were satisfied with a standardized product, the local markets in the region included many customers who demanded a high-performance product for racing. Because of the firms' proximity to markets, and their adaptability to new ideas, they have been successful in competing based upon their high quality of production. Recreational boat manufacturers in Minnesota have been able to follow the same model, both based upon understanding the region's consumer, and his emphasis upon racing, to create a niche in the market. Local technical colleges provide customized training programs and continuous improvement programs to the two main firms and many of their supplying firms in the area. Source: Munnich, Jr., Lee W., Greg Schrock, and Karen Cook Rural Knowledge Clusters: The Challenge of Rural Economic Prosperity. Minnesota: University of Minnesota, 2002.
- **Winchester, VA.** Recent state legislation allowed the tax advantages of enterprise zones to be applied in technology zones. In Winchester, a technology zone was created in a historic downtown neighborhood to spur revitalization. The zone allows private companies to use a federal telecommuting center located in the area; it is marketed by the area's economic development commission. Targeted incentives and telecommunications infrastructure were found to be essential to the ability of the zone to attract small technology companies. Source: Innovative Local Economic Development Programs [Online]. Available: <http://www.eda.gov/>.

## An Arkansas Initiative for Communities Moving to the New Economy

VisionWorks is an organization of economic and community development practitioners and supporters in Arkansas led by Mark Peterson, PhD, of the U of A Cooperative Extension Service. The mission of VisionWorks is to provide leadership development and resources for communities in Arkansas. The principals of VisionWorks believe that the key for community success in the New Economy is the adoption of a new paradigm among community leaders; a recognition of the forces driving the New Economy, knowledge of resources in adapting to change, and the vision of community leaders and residents in creating innovative solutions to their problems.

Their “Breakthrough Solutions” program teaches community leaders ten strategic leadership principles that can be useful in today’s socioeconomic environment.<sup>5</sup> They are as follows:

1. Strategic leaders engage and involve community leaders in visioning and a scenario based planning process leading to a community blueprint.
2. Strategic leaders learn to anticipate major forces and trends impacting their future.
3. Strategic leaders identify, map, and leverage the strategic assets that will enable the community to become healthy and sustainable over the long term.
4. Strategic leaders understand and create high impact systems that work effectively in dealing with issues and move the community forward.
5. Strategic leaders promote breakthrough solutions by fostering innovation and entrepreneurship.
6. Strategic leaders build productive relationships and create value in the community through networking, collaboration with strategic partners, and public issues education.
7. Strategic leaders apply communication and information technologies to transform the community into an e-community.
8. Strategic leaders employ strategic marketing tools to foster development of goods, services, and experiences valued in the global economy.
9. Create prosperous clusters and regions.
10. Strategic leaders create mechanisms to sustain the development process over time.

Several Arkansas communities attribute some recent economic development successes to the leadership development and planning assistance they received through VisionWorks and its predecessor, Vision 2010. They include Conway County; the city of Mansfield, with Sebastian and Scott Counties; the city of Mena and Polk County; and the city of Van Buren and Crawford County.

<sup>5</sup> Peterson, Mark. *Breakthrough Solutions for 21st Century Communities: Strategic Principles and Core Competencies*. (Unpublished). Little Rock: University of Arkansas Cooperative Extension Service, 2005.



## Findings, Conclusions, and Recommendations

Recent changes in social, cultural, technological, and economic forces have created a New Economy that is much more reliant on knowledge-based activities and creative processes. These changes require new strategic responses for continued competitive survival of communities and enterprises. Accelerate Arkansas is a statewide organization of volunteers whose mission is to foster economic growth in Arkansas by using the building blocks of a knowledge-based economy. The overarching goal of Accelerate Arkansas is to increase per capita personal income in Arkansas to the national level by 2020. That is, to close Arkansas' per capital personal income gap by 2020.

From the beginning of 1969 to 2004, the PCPI gap between Arkansas and the U.S. narrowed by a total of 10% or by about 0.003% per year on average, moving from 67.8% in 1969 to 77.9% in 2004.

In 2000, PCPI of the MSAs in Arkansas ranged from 94.2% of the U. S. average (in the Memphis MSA) to 71.4% of the U. S. (in the Pine Bluff MSA). With the exception of the Memphis and Little Rock-North Little Rock MSAs, they lag behind 20 of the 22 high growth MSAs identified in the U. S.

A convergence process (of per capita personal income) is happening throughout the U. S., but at a very slow rate. There are several dynamic processes capable of retarding the rate of convergence. These

dynamics can be (1) the possibility of excessive heterogeneous states/regions with the possibility of multiple growth clubs; (2) structural breaks in the convergence process that widen state/regional inequalities; and (3) the existence of regional spillover effects among regions that reduce rates of convergence.

If Arkansas relies upon the current rate of technical progress and the flows of labor and capital between states, only 30 percent of the gap between the U. S. and Arkansas will be closed by 2020.

As of 2004, per capita personal income in the metropolitan portion of Arkansas stood at 85% of the U. S. level, while the average in the nonmetropolitan portion of the state was only 68% of the U.S. level. Thus, the lowest levels of per capita personal income relative to the U. S. are found in rural areas of the state.

Among the fastest growing of the high-growth MSAs (Movers and Shakers) and Arkansas MSAs, per capita personal income is positively correlated with total population, percent urban population, percent of adults with at least a bachelor's degree, and percent of the total population in the labor force. It is negatively correlated with the percent of adults without a high school diploma. It stands to reason that as the education level of Arkansans increases, the per capita personal income can be expected to increase as well.

Movers and Shakers were found to have 16 industries which contributed more to personal income than in the nation as a whole, and seven which contributed less. In contrast to the Movers and Shakers, 12 of the Arkansas industries had LQs larger than 1.0, while 11 were below the national level. Only five industry sectors in rural areas contributed more than their U. S. counterparts to total personal income, while 18 industries had LQs below one. It is apparent from the data that many of the more labor-intensive industries, and those which may require more highly educated employees, contribute very little to the total personal income in rural Arkansas.

If Arkansas' PCPI gap is to be closed, it is critical that Arkansas' economy be based on innovative processes. In this new innovative economy, Arkansas' industrial structure must pay employees wages above national averages, and occupation earnings must also exceed the national counterparts. Arkansas occupational and industrial mixes must therefore shift toward activities that are conducive to the innovative environment.

In Arkansas, industries that paid average wages above the national average included mining; utilities; construction; wholesale trade; finance and insurance; professional and technical services; and management of companies and enterprises. These are the industries in Arkansas that contributed to closing the PCPI gap in 2004.

In general, median earnings are less in Arkansas than the U. S. across occupations. The only exception for this list of occupation groups is that of farming, fishing, and forestry. Occupational groups that pay high wages relative to the U. S. median wage for all occupations include management occupations; business and financial occupations; computer and mathematical occupations; architecture and engineering occupations; life, physical, and social science occupations; legal occupations; and healthcare practitioners and technical occupations. Growth in the number of workers in these occupations at the prevailing median annual wage would contribute to closing the state's PCPI gap.

To make the transition to the New Economy, many communities find a basis for success in the adoption of an "entrepreneurial" attitude: one in which the community is ready to face change and challenges as they

occur, unafraid of the risk of the unknown. These communities are successful because they adopt a vision of themselves in the future, and chart and follow a path to reach the desired state.

Recommended statewide strategies for economic development in the New Economy that is reliant on knowledge-based activities and processes focus on improving the labor force through investment in education, including early childhood programs, primary and secondary education, higher education, and workforce training. Other recommendations include improving the research and development presence at universities; expanding the telecommunications infrastructure, assisting entrepreneurs by helping provide capital investment and technical assistance; realigning the state tax structure to recognize changes in industry; structure; assuring a regulatory environment that does not distort markets; attending to quality of life issues; and assuring that the government systems are clearly defined and responsive to the needs of the communities. In short, government in the New Economy may be viewed more as an investment and a partner than an adversary and a drain on the private sector.

For metropolitan areas, recommendations include taking a regional approach to both community and economic development issues; providing assistance and leadership for regional partnerships; investing in assets that will drive economic development, including education, infrastructure, and amenities sought by knowledge-based firms; promoting cluster-based development; reinvesting in downtown areas and blighted neighborhoods; and using incentives to provide an adequate labor market throughout a region.

Within rural areas of Arkansas, the need for a new approach is particularly great, if per capita personal income is to grow to parity by 2020. There are three essential recommendations that apply to rural area development, as follows:

1. Encourage the development of industry clusters to include both public and private resources for related industries, such as using colleges and universities as training centers to provide workforce development opportunities.
2. Facilitate rural entrepreneurship by providing access to capital, using budget appropriations or venture capital fund intermediaries; by creating training programs that develop the local leadership capacity to identify and encourage local entrepreneurs; and by using technology such as online networks to allow rural entrepreneurs to connect to information and financial resources.
3. Diversify and add value to agriculture through product development, to allow farmers and local entrepreneurs to retain value added activities rather than selling agricultural commodities at low margins, by providing financing mechanisms and by providing infrastructure and technical support for new marketing activities and product development.

## A Final Note

The findings of this report can provide a base for future action on the part of Accelerate Arkansas in several ways. Additional study can be performed to refine some of the findings and gain detailed knowledge about the particular issues constraining growth in per capita personal income within specific geographic areas, industries, or occupations. Strategies for action can be adopted and prioritized based upon their perceived impacts upon the state's economy. Finally, leadership can engender in the public an awareness of opportunities and challenges facing the state in the New Economy, a vision of Arkansas' future, and an

# Bibliography

- Atkinson, Robert D., PhD., assisted by Rick Coduri. *The 2002 State New Economy Index*. Washington, D.C.: Progressive Policy Institute, June 2002.
- Atkinson, Robert D., PhD., Randolph H. Court, and Joseph M. Ward. *The State New Economy Index*. Washington, D.C.: Progressive Policy Institute, July 1999.
- Bayard, Madeleine. *Issue Brief: Strengthening Rural Economies through the Arts*. Washington, D.C.: National Governors' Association, August 2005.
- Bernat, A.B. "Convergence in State Per Capita Income, 1950-1999." *Survey of Current Business* 81 (2001): 36-48.
- Borts, G. H. and J. L. Stein. *Economic Growth in a Free Market*. Columbia University Press, New York, 1964.
- Clinton, Jim, Keecia James, Trent Williams, Jonathan Morgan, Carol Conway, Scott Doron, Yolanda Batts, and Dr. Robert Gillespie. *Invented Here: Transforming the Southern Economy*. North Carolina: Southern Growth Policies Board, 2001
- Clinton, Jim, Scott Doron, and Karen Barlow. *Not Invested Here: The 2004 Southern Innovation Index*. North Carolina: Southern Growth Policies Board, 2004.
- Cortright, Joseph. "New Growth Theory, Technology and Learning: A Practitioner's Guide," in *Reviews of Economic Development Literature and Practice: No. 4*, Portland, Oregon: Impresa, Inc., 2001.
- Friedman, Thomas L. *The World Is Flat: A Brief History of the Twenty-First Century*. New York: Farrar, Straus, and Giroux, 2005.
- Georgia Institute of Technology Center for Economic Development Services, Cosmos Corporation, Tate Research Services, and the Southeastern Economic Development Council. *Innovative Local Economic Development Programs*. Georgia: Georgia Institute of Technology, 1999.
- International Economic Development Council. *Excellence in Economic Development Awards* [Online]. Available: <http://www.iedconline.org/>.
- Isley, Phyllis. "Planning Lessons Can be Learned: What Economic Modeling Tells Us about the Economic Development Process in the Knowledge Economy." *Applied Research in Economic Development* 1 (2003): 2-15.
- Kalomaris, Paul. *Issue Brief: Innovative State Policy Options To Promote Rural Economic Development*. Washington, D.C.: National Governors' Association Center for Best Practices, 2003.
- Kline, S. J. and N. H. Rosenberg. *An Overview of Innovation*. In Landau R. and N Rosenberg (eds.)
- Lo, Chien and Mark Partridge. "An Alternative to Approach to the Analysis of the U.S. Per Capita Income Convergence." *Social Science Research Network, Working Paper Series*. July 1, 2005.
- Lynch, Timothy. "Comparison of Florida Metropolitan Statistical Areas Using the Metropolitan New Economy Index." *Applied Research in Economic Development* 1 (2003): 28-43.
- MDC, Inc. *The Building Blocks of Community Development*. May 2002 [Online] Available: <http://www.mdcinc.org/>.

- Munnich, Jr., Lee W., *Knowledge Clusters as a Means of Promoting Regional Economic Development*. Minnesota: University of Minnesota, 2004.
- Munnich, Jr., Lee W., Greg Schrock, and Karen Cook. *Rural Knowledge Clusters: The Challenge of Rural Economic Prosperity*. Minnesota: University of Minnesota, 2002.
- National Governors' Association. *State Strategies for the New Economy*. Washington, D.C.: National Governors' Association, 2000.
- Peterson, Mark. *Breakthrough Solutions for 21st Century Communities: Strategic Principles and Core Competencies*. (Unpublished). Little Rock: University of Arkansas Cooperative Extension Service, 2005.
- Progressive Policy Institute. *The New Economy Project* [Online]. Available: <http://www.ppionline.org/>.
- Solow, R. M. "A Contribution to the Theory of Economic Growth," *Quarterly Journal of Economics* 70, (1956): p. 65-94.
- Solow, R. M. "Technical Change and the Aggregate Production Function," *Review of Economics and Statistics* 39, (1957): 312-320.
- Southern Growth Policies Board. *Southern Growth Idea Bank*. [Online.] Available: <http://www.southern.org/>.
- Thornton, Patricia H. and Katherine H. Flynn. "Entrepreneurship, Networks, and Geographies," in *Handbook of Entrepreneurship Research*, edited by Z. J. Acs and D. B. Audreitsch, 401-33. Great Britain: Kluwer Academic Publishers, 2003.
- U.S. Conference of Mayors. *Best Practices Database* [Online.] Available: [http://www.usmayors.org/uscm/best\\_practices/](http://www.usmayors.org/uscm/best_practices/).
- Weiss, Marc A. *State Policy Approaches To Promote Metropolitan Economic Strategy*. Washington, D.C.: National Governors Association Center for Best Practices, 2002.
- Wendland, Kirk and Jerry Mallot. "Effective Regional Recruitment: Jacksonville and Florida's First Coast." *Economic Development America* (Spring 2004): 30-1.

# Appendix A

## The Movers and The Shakers

### Identification of Top Performing MSAs in the Nation

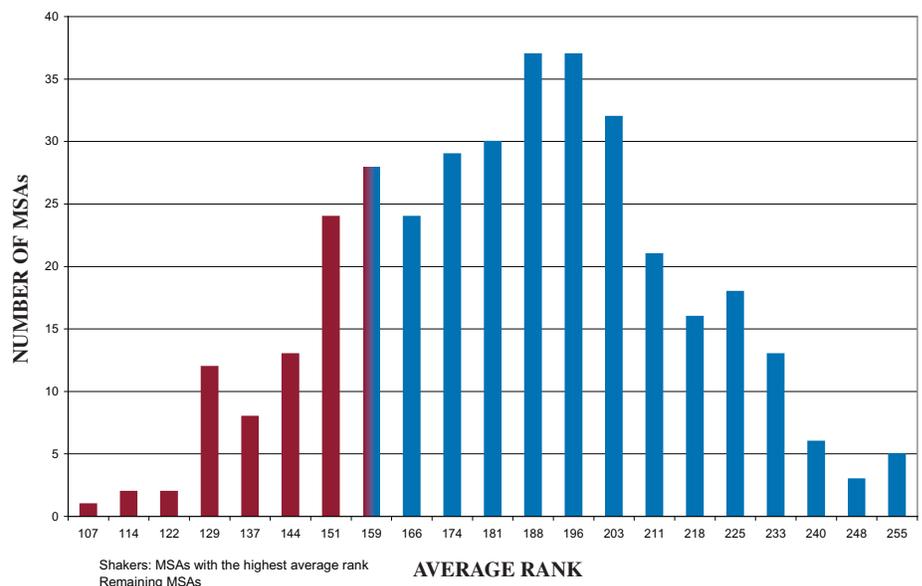
In this Appendix, the top performing Metropolitan Statistical Area (MSA) economies are identified and the selection methodology explained. This identification allows the creation of a list of MSAs that have had success at increasing their PCPI. An in-depth analysis of the factors contributing to the success of these communities is developed in the body of the report.

The ranking of MSAs in this Appendix are based on annual PCPI growth rates over the 1992-2003 time periods.<sup>1</sup> The first list focused on top performing MSAs in terms of the annual PCPI growth rate. These MSAs are called the Shakers. They are the MSAs that have had the highest annual growth rates in PCPI over the 1992-2003 period. The second list of top performing MSAs is based on their upward mobility in the PCPI ranking. These MSAs are Movers. The Mover’s classification of MSAs was based on annual changes in an MSA’s annual ranked PCPI growth rate. The two rankings are explained and reported below.

## The Shakers

The first ranking looked at top performing MSAs (Shakers) in terms of annual growth rates. In this accounting, MSAs were ranked according to the magnitude of their annual growth rate in PCPI. The MSA with the highest growth rate was assigned first place, the MSA with the second highest growth rate was assigned a second place, and so forth for all 361 MSAs and the United States. This accounting and ranking continued year by year over the 1992-2003 time period. The 10 years of rankings for each MSA were summed, and then, the MSAs’ sums were ranked in an ascending order. Each MSA was assigned a place according to its position in the ranked sum (ranked ordered sum), thereby identifying the top performing MSAs.

**Figure A-1**  
**Shaker Selection: Frequency of 11-year Average of MSA Ranks**



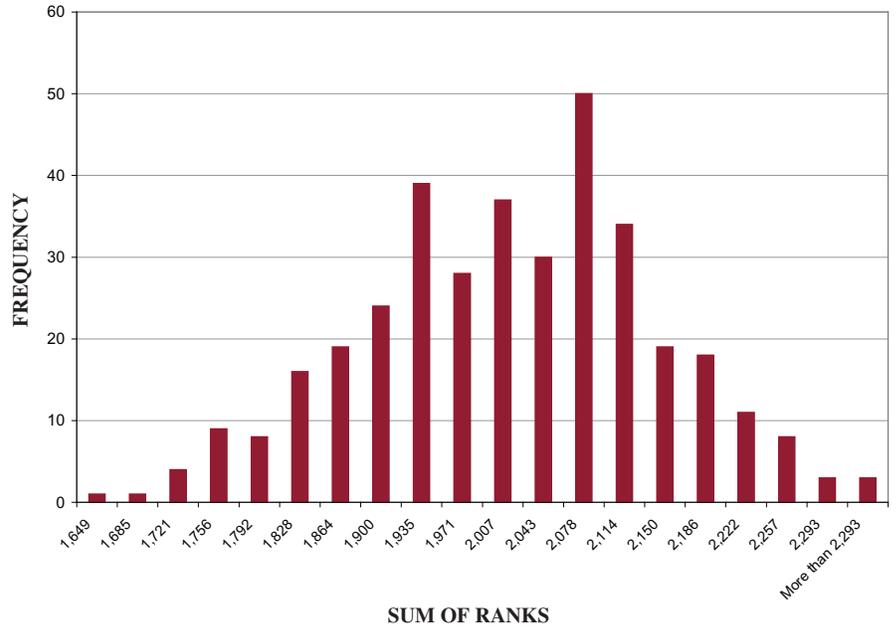
The accompanying histogram shows a frequency distribution of the MSAs’ ranked and ordered sums. The ranking ranged from 1279 to 3064. The average ranking was 2178 and the median was 2189. The accompanying list of top performers includes those found in the first cumulative quintile.

<sup>1</sup> Local Area Personal Income, Regional Economic Accounts, Bureau of Economic Analysis, U.S. Department of Commerce. (<http://bea.gov/bea/regional/reis>)

## The Movers

The second ranking focused on identifying MSAs that had the greatest upward mobility in the rankings over the 1992-2003 time period. In this accounting, the difference in the rankings of annual growth rate of per capita personal income from year to year was used to identify the top moving MSAs. The top Mover which had the greatest difference in the year to year ranking was assigned 1st place, the second Mover was assigned 2nd place, and so forth throughout the list of MSAs. Summing the places for each MSA, and then ranking each MSA according to their position identified the top moving MSAs.

**Figure A-2**  
**Frequency Distribution of Sum of Mover's Ranks**



The Movers frequency distribution of the MSAs ranked ordered sums is shown in the accompanying histogram chart. The ranking ranged from 1649 to 2329. The average ranking was 1996 and the median was 2005. The accompanying list of top performers includes those MSAs found in the first cumulative quintile.

## TOP PERFORMING MSAs (Shakers): 1992-2003

RANK	AREA NAME	RANK	AREA NAME
1	Flagstaff, AZ (MSA)	51	Grand Forks, ND-MN (MSA)
2	Wausau, WI (MSA)	52	Portland-South Portland-Biddeford, ME (MSA)
3	Houma-Bayou Cane-Thibodaux, LA (MSA)	53	Iowa City, IA (MSA)
4	Gulfport-Biloxi, MS (MSA)	54	San Antonio, TX (MSA)
5	Fargo, ND-MN (MSA)	55	Austin-Round Rock, TX (MSA)
6	Jackson, MS (MSA)	56	St. Cloud, MN (MSA)
7	<b>Memphis, TN-MS-AR (MSA)</b>	57	Houston-Sugar Land-Baytown, TX (MSA)
8	Salt Lake City, UT (MSA)	58	Clarksville, TN-KY (MSA)
9	Burlington-South Burlington, VT (MSA)	59	Barnstable Town, MA (MSA)
10	Monroe, LA (MSA)	60	<b>Little Rock-North Little Rock, AR (MSA)</b>
11	Boulder, CO (MSA)	61	Sioux Falls, SD (MSA)
12	Rochester, MN (MSA)	62	Appleton, WI (MSA)
13	Fort Collins-Loveland, CO (MSA)	63	Evansville, IN-KY (MSA)
14	Madison, WI (MSA)	64	Columbus, GA-AL (MSA)
15	Nashville-Davidson-Murfreesboro, TN (MSA)	65	Jefferson City, MO (MSA)
16	Jacksonville, NC (MSA)	66	Bangor, ME (MSA)
17	Lawrence, KS (MSA)	67	Winchester, VA-WV (MSA)
18	Sandusky, OH (MSA)	68	Missoula, MT (MSA)
19	Rapid City, SD (MSA)	69	Chattanooga, TN-GA (MSA)
20	Hattiesburg, MS (MSA)	70	Altoona, PA (MSA)
21	Denver-Aurora, CO (MSA)	71	Akron, OH (MSA)
22	Bridgeport-Stamford-Norwalk, CT (MSA)	72	Sumter, SC (MSA)
23	Tuscaloosa, AL (MSA)	73	Fort Walton Beach-Crestview-Destin, FL (MSA)
24	Louisville-Jefferson County, KY-IN (MSA)	74	New Orleans-Metairie-Kenner, LA (MSA)
25	Eau Claire, WI (MSA)	75	El Paso, TX (MSA)
26	Birmingham-Hoover, AL (MSA)	76	Pueblo, CO (MSA)
27	Hinesville-Fort Stewart, GA (MSA)	77	Columbus, OH (MSA)
28	San Luis Obispo-Paso Robles, CA (MSA)	78	Ocean City, NJ (MSA)
29	Minneapolis-St. Paul-Bloomington, MN-WI (MSA)	79	Colorado Springs, CO (MSA)
30	South Bend-Mishawaka, IN-MI (MSA)	80	Elizabethtown, KY (MSA)
31	Columbus, IN (MSA)	81	Dothan, AL (MSA)
32	Bismarck, ND (MSA)	82	Charleston, WV (MSA)
33	Jackson, TN (MSA)	83	Kansas City, MO-KS (MSA)
34	Milwaukee-Waukesha-West Allis, WI (MSA)	84	Baltimore-Towson, MD (MSA)
35	Green Bay, WI (MSA)	85	Fond du Lac, WI (MSA)
36	Sheboygan, WI (MSA)	86	Charlottesville, VA (MSA)
37	Detroit-Warren-Livonia, MI (MSA)	87	Anderson, SC (MSA)
38	Boston-Cambridge-Quincy, MA-NH (MSA)	88	Atlanta-Sandy Springs-Marietta, GA (MSA)
39	Lewiston-Auburn, ME (MSA)	89	Philadelphia-Camden-Wilmington, PA-NJ-DE-MD (MSA)
40	Kokomo, IN (MSA)	90	Niles-Benton Harbor, MI (MSA)
41	San Diego-Carlsbad-San Marcos, CA (MSA)	91	Corvallis, OR (MSA)
42	Cheyenne, WY (MSA)	92	Waterloo-Cedar Falls, IA (MSA)
43	Charleston-North Charleston, SC (MSA)	93	Monroe, MI (MSA)
44	Cincinnati-Middletown, OH-KY-IN (MSA)	94	Abilene, TX (MSA)
45	Laredo, TX (MSA)	95	Grand Junction, CO (MSA)
46	Lincoln, NE (MSA)	96	Lexington-Fayette, KY (MSA)
47	Ann Arbor, MI (MSA)	97	Myrtle Beach-Conway-North Myrtle Beach, SC (MSA)
48	Charlotte-Gastonia-Concord, NC-SC (MSA)	98	Dallas-Fort Worth-Arlington, TX (MSA)
49	Lafayette, LA (MSA)	99	Seattle-Tacoma-Bellevue, WA (MSA)
50	Omaha-Council Bluffs, NE-IA (MSA)	100	Providence-New Bedford-Fall River, RI-MA (MSA)

## TOP PERFORMING MSAs (Movers): 1992-2003

RANK	AREA NAME	RANK	AREA NAME
1	Norwich-New London, CT (MSA)	42	Gainesville, GA (MSA)
2	Boise City-Nampa, ID (MSA)	43	Eau Claire, WI (MSA)
3	Durham, NC (MSA)	44	Fort Collins-Loveland, CO (MSA)
4	<b>Hot Springs, AR (MSA)</b>	45	Barnstable Town, MA (MSA)
5	Grand Junction, CO (MSA)	46	Kennewick-Richland-Pasco, WA (MSA)
6	Naples-Marco Island, FL (MSA)	47	Hinesville-Fort Stewart, GA (MSA)
7	Visalia-Porterville, CA (MSA)	48	Tampa-St. Petersburg-Clearwater, FL (MSA)
8	Rome, GA (MSA)	49	Greensboro-High Point, NC (MSA)
9	Coeur d'Alene, ID (MSA)	50	Erie, PA (MSA)
10	Morristown, TN (MSA)	51	Raleigh-Cary, NC (MSA)
11	Charlotte-Gastonia-Concord, NC-SC (MSA)	52	Madera, CA (MSA)
12	Sheboygan, WI (MSA)	53	Dubuque, IA (MSA)
13	Dalton, GA (MSA)	54	Roanoke, VA (MSA)
14	Hickory-Lenoir-Morganton, NC (MSA)	55	Colorado Springs, CO (MSA)
15	Warner Robins, GA (MSA)	56	Asheville, NC (MSA)
16	Fort Wayne, IN (MSA)	57	Goldsboro, NC (MSA)
17	Ocean City, NJ (MSA)	58	Des Moines-West Des Moines, IA (MSA)
18	Reading, PA (MSA)	59	Columbia, MO (MSA)
19	Hattiesburg, MS (MSA)	60	Vineland-Millville-Bridgeton, NJ (MSA)
20	Kansas City, MO-KS (MSA)	61	Indianapolis-Carmel, IN (MSA)
21	Greeley, CO (MSA)	62	St. Cloud, MN (MSA)
22	Rockford, IL (MSA)	63	Dallas-Fort Worth-Arlington, TX (MSA)
23	Johnson City, TN (MSA)	64	Wichita, KS (MSA)
24	Bridgeport-Stamford-Norwalk, CT (MSA)	65	El Paso, TX (MSA)
25	<b>Fayetteville-Springdale-Rogers, AR-MO (MSA)</b>	66	Canton-Massillon, OH (MSA)
26	Brownsville-Harlingen, TX (MSA)	67	Ogden-Clearfield, UT (MSA)
27	Oshkosh-Neenah, WI (MSA)	68	St. Louis, MO-IL (MSA)
28	Wenatchee, WA (MSA)	69	Winchester, VA-WV (MSA)
29	Altoona, PA (MSA)	70	Austin-Round Rock, TX (MSA)
30	Topeka, KS (MSA)	71	Waterloo-Cedar Falls, IA (MSA)
31	Charleston, WV (MSA)	72	Houston-Sugar Land-Baytown, TX (MSA)
32	Champaign-Urbana, IL (MSA)	73	Lubbock, TX (MSA)
33	Springfield, IL (MSA)	74	Springfield, MO (MSA)
34	Chicago-Naperville-Joliet, IL-IN-WI (MSA)	75	Elkhart-Goshen, IN (MSA)
35	Atlanta-Sandy Springs-Marietta, GA (MSA)	76	Lewiston, ID-WA (MSA)
36	Yakima, WA (MSA)	77	San Antonio, TX (MSA)
37	Kankakee-Bradley, IL (MSA)	78	Burlington-South Burlington, VT (MSA)
38	<b>Memphis, TN-MS-AR (MSA)</b>	79	Burlington, NC (MSA)
39	Baton Rouge, LA (MSA)	80	Danville, VA (MSA)
40	Lawrence, KS (MSA)	81	Rocky Mount, NC (MSA)
41	Sarasota-Bradenton-Venice, FL (MSA)	82	Salt Lake City, UT (MSA)

# Appendix B

## Location Quotients

A location quotient is a ratio of ratios that measures the comparative degree of specialization in two regions, and traditionally, used to identify the degree of industrial specialization within a region. For example, a region's employment is specialized in a particular industry when the fraction of workers in that industry to all workers in the region exceeds a similar fraction in a broader based economy like the national economy. Thus, if a hypothetical region has 10% of its total employment employed in the agriculture industry and the nation has 5% of its total employment in the same agriculture industry, then the region's location quotient for the agriculture industry is 2 ( $=10\%/5\%$ ). Whenever a location quotient exceeds unity, then the region is more specialized in that activity than the nation, and the greater the value of the location quotient the greater the degree of specialization. Location quotients with a value less than unity indicate a lack of specialization in that activity relative to a reference economy.

Several types of location quotients were computed in this study. Personal income location quotients were computed to compare sources of income across industrial sectors. For these computations, the U.S. economy was the broader based economy. When a particular industrial sector's location quotient exceeded unity, that industry contributed a greater percent of personal income to the region than did its national counterpart. This means the region's personal income was concentrated in that industry relative to its national counterpart contribution to the national economy. Occupational location quotients were computed to identify areas of occupational specialization as compared to the nation. When an occupational location quotient exceeded unity, that occupation was concentrated in that region relative to the nation. The region has an occupational specialization in that occupation. Employment location quotients were computed to identify regional employment specialization relative to the nation. Employment in a region was specialized in an industry when the industry's employment location quotient exceeds unity.

# Appendix C: Substate Index

## Industries with Average MSA Wages Greater than U.S. Average Wages, 2004

	Fayetteville	Fort Smith	Hot Springs	Jonesboro	Little Rock	Memphis	Pine Bluff	Texarkana
NAICS 112 Animal production			1.08					
NAICS 211 Oil and gas extraction								2.17
NAICS 212 Mining, except oil and gas			1.04		1.24			
NAICS 213 Support activities for mining		1.10						
NAICS 221 Utilities		1.13	1.61					
NAICS 311 Food manufacturing					1.00	1.20		
NAICS 312 Beverage and tobacco product manufacturing		1.09				1.24		
NAICS 313 Textile mills						1.03		
NAICS 316 Leather and allied product manufacturing	1.19							
NAICS 322 Paper manufacturing		1.09					1.44	
NAICS 323 Printing and related support activities						1.08		
NAICS 324 Petroleum and coal products manufacturing						1.39		
NAICS 325 Chemical manufacturing					1.12	1.46		
NAICS 326 Plastics and rubber products manufacturing						1.02		
NAICS 331 Primary metal manufacturing					1.33			
NAICS 332 Fabricated metal product manufacturing						1.01		
NAICS 333 Machinery manufacturing		1.03				1.06		
NAICS 334 Computer and electronic product manufacturing					1.03			
NAICS 335 Electrical equipment and appliance mfg.						1.33		
NAICS 336 Transportation equipment manufacturing					1.15			
NAICS 339 Miscellaneous manufacturing						1.52		
NAICS 425 Electronic markets and agents and brokers			1.39	1.06			1.39	
NAICS 441 Motor vehicle and parts dealers						1.12		
NAICS 483 Water transportation						1.17		
NAICS 484 Truck transportation						1.07		
NAICS 486 Pipeline transportation		1.39				1.68		
NAICS 488 Support activities for transportation	1.13							1.03
NAICS 511 Publishing industries, except Internet						1.00		
NAICS 515 Broadcasting, except Internet					1.09	1.22		
NAICS 517 Telecommunications	1.32	1.04	1.05	1.25	1.34	1.33	1.03	1.22
NAICS 518 ISPs, search portals, and data processing					1.31	1.21		
NAICS 522 Credit intermediation and related activities						1.84		
NAICS 523 Securities, commodity contracts, investments		1.57	1.37		2.52	5.34	1.15	
NAICS 524 Insurance carriers and related activities						1.30		1.17
NAICS 533 Lessors of nonfinancial intangible assets						1.61		
NAICS 541 Professional and technical services	1.18			1.03		1.17		
NAICS 551 Management of companies and enterprises	1.76	1.72	2.17			1.92	1.28	
NAICS 562 Waste management and remediation services						1.02		
NAICS 621 Ambulatory health care services			1.14	1.33		1.31		1.08
NAICS 622 Hospitals						1.06		

Source: [ftp://ftp.bls.gov/pub/special.requests/cew/](http://ftp.bls.gov/pub/special.requests/cew/)

### Occupations with Average MSA Wages Greater than U.S. Average Wages, 2004

	Fayetteville	Fort Smith	Jonesboro	Little Rock	Pine Bluff	Texarkana
Architecture and engineering occupations	1.40	1.23	1.23	1.46		1.41
Business and financial operations occupations	1.17	1.19	1.15	1.28	1.20	1.29
Computer and mathematical occupations	1.25	1.29	1.05	1.40	1.40	1.32
Education, training, and library occupations	1.06	1.02		1.14	1.07	
Healthcare practitioners and technical occupations	1.26	1.11	1.04	1.31	1.06	1.26
Installation, maintenance, and repair occupations						1.01
Legal occupations	1.09	1.23	1.09	1.45	1.12	1.21
Life, physical, and social science occupations	1.53	1.15	1.21	1.18	1.83	1.71
Management occupations	1.86	1.79	1.63	1.98	1.90	1.66

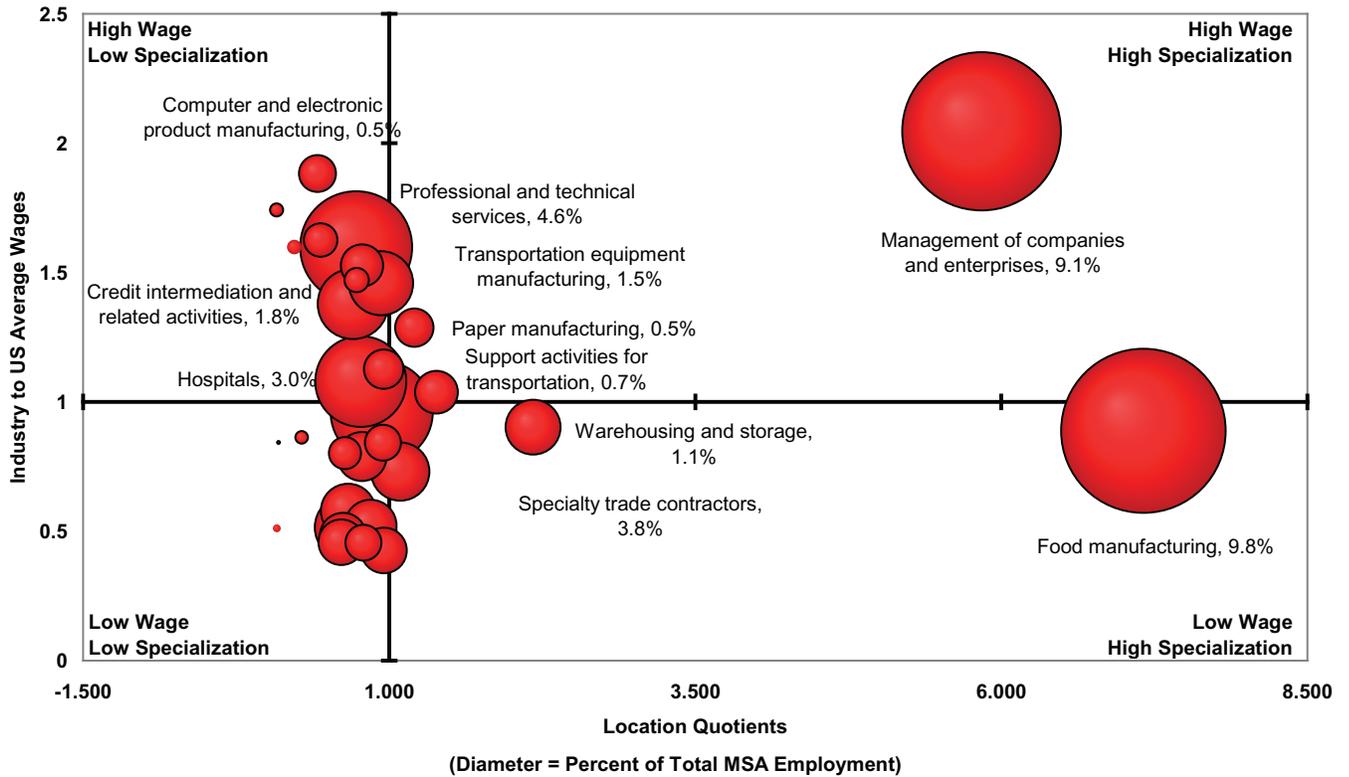
Source: Occupational Employment Statistics (OES) Survey, Bureau of Labor Statistics, Department of Labor. [Http://stat.bs.gov/oes/home.htm](http://stat.bs.gov/oes/home.htm)

**Fayetteville-Springdale-Rogers AR-MO MSA, 2004**

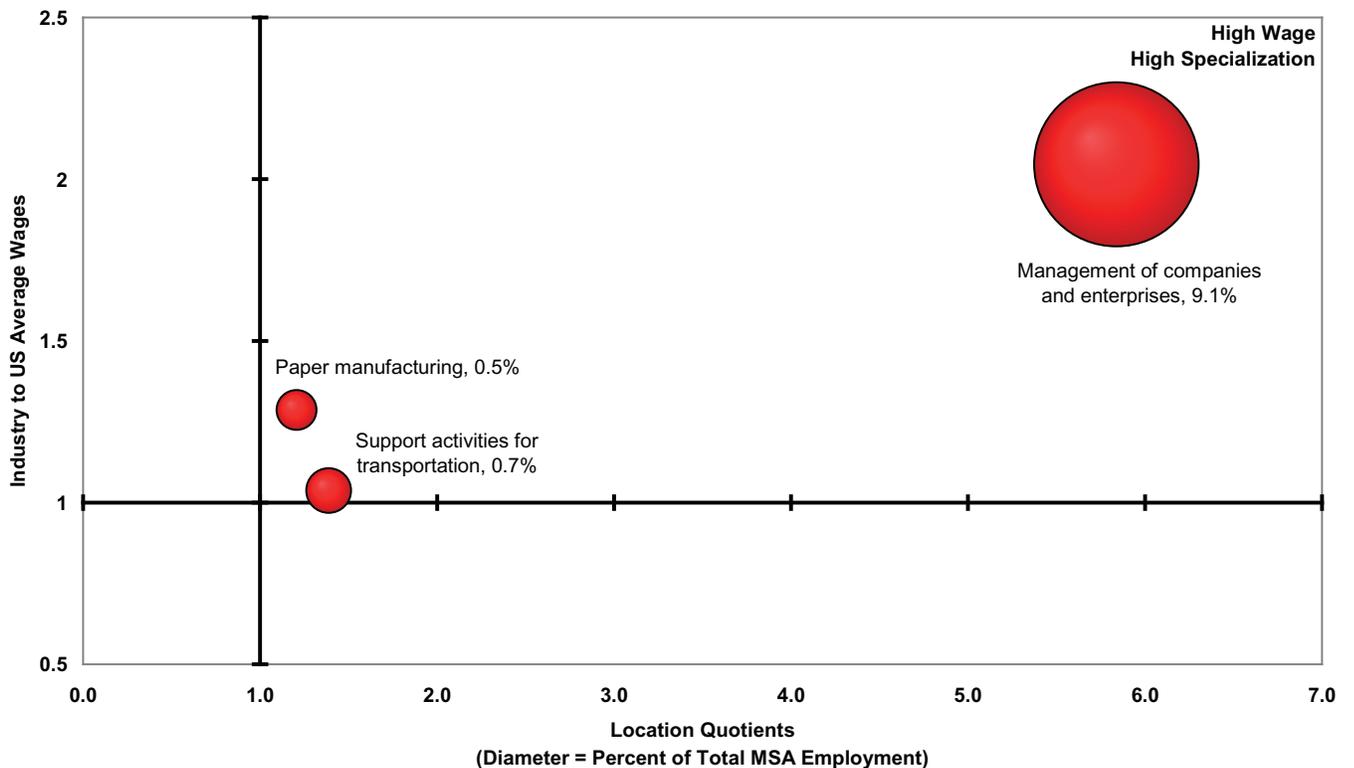
Title	MSA			MSA Avg			US			AR			Employment LQ			Avg Annual Wage LQ		
	Emp#	Annual Wage	Emp#	Annual Wage	Emp#	Annual Wage	Emp#	Annual Wage	Emp#	Annual Wage	vs. Nation	vs. State	vs. Nation	vs. State	vs. Nation	vs. State		
Total, all industries	158,483	\$33,459	108,490,066	\$39,134	942,044	\$29,802												
Goods-Producing	44,235	\$31,040	22,848,815	\$44,776	273,638	\$32,490												
Service-Providing	114,247	\$34,395	85,641,251	\$37,629	668,406	\$28,702												
NAICS 551 Management of companies and enterprises	14,470	\$68,734	1,696,537	\$80,054	22,791	\$65,066												
NAICS 488 Support activities for transportation	1,075	\$44,028	530,614	\$40,605	4,815	\$36,032												
NAICS 322 Paper manufacturing	869	\$38,614	493,341	\$50,357	12,226	\$48,360												
NAICS 541 Professional and technical services	7,217	\$46,186	6,768,868	\$62,547	33,697	\$44,010												
NAICS 622 Hospitals	4,764	\$34,975	4,246,724	\$42,205	41,784	\$34,009												
NAICS 522 Credit intermediation and related activities	2,898	\$36,996	2,813,110	\$53,965	20,883	\$34,541												
NAICS 336 Transportation equipment manufacturing	2,401	\$35,251	1,763,438	\$57,082	16,199	\$33,146												
NAICS 511 Publishing industries, except Internet	1,031	\$32,557	907,542	\$59,764	6,487	\$29,177												
NAICS 339 Miscellaneous manufacturing	912	\$30,767	653,623	\$44,087	6,499	\$28,165												
NAICS 334 Computer and electronic product manufacturing	794	\$30,633	1,314,936	\$73,673	6,180	\$33,173												
NAICS 517 Telecommunications	661	\$51,575	1,026,957	\$63,635	8,684	\$49,561												
NAICS 515 Broadcasting, except Internet	347	\$28,316	323,639	\$57,575	2,151	\$32,277												
NAICS 711 Performing arts and spectator sports	125	\$20,967	380,542	\$62,559	2,066	\$15,659												
NAICS 325 Chemical manufacturing	103	\$29,765	881,799	\$68,157	5,132	\$48,268												
NAICS 311 Food manufacturing	15,589	\$26,200	1,490,443	\$34,758	51,711	\$26,819												
NAICS 444 Building material and garden supply stores	1,966	\$27,859	1,234,084	\$28,599	9,871	\$24,365												
NAICS 493 Warehousing and storage	1,766	\$27,934	555,771	\$35,304	9,896	\$28,319												
NAICS 238 Specialty trade contractors	6,035	\$30,681	4,402,873	\$37,641	29,887	\$28,901												
NAICS 445 Food and beverage stores	2,693	\$15,592	2,818,261	\$20,144	19,493	\$15,161												
NAICS 721 Accommodation	1,733	\$14,197	1,785,041	\$22,660	10,980	\$13,220												
NAICS 812 Personal and laundry services	1,569	\$21,329	1,266,102	\$20,394	8,397	\$19,094												
NAICS 811 Repair and maintenance	1,388	\$26,688	1,221,991	\$30,870	9,616	\$26,117												
NAICS 448 Clothing and clothing accessories stores	1,243	\$13,107	1,367,631	\$18,885	8,157	\$14,062												
NAICS 447 Gasoline stations	1,220	\$13,162	872,863	\$16,668	13,093	\$13,090												
NAICS 713 Amusements, gambling, and recreation	1,207	\$14,427	1,355,446	\$17,927	6,852	\$13,271												
NAICS 321 Wood product manufacturing	759	\$24,395	547,973	\$32,965	13,890	\$30,278												
NAICS 451 Sporting goods, hobby, book and music stores	745	\$12,742	646,085	\$17,846	4,259	\$13,974												
NAICS 532 Rental and leasing services	598	\$21,508	641,022	\$31,382	5,077	\$22,667												
NAICS 313 Textile mills	99	\$38,469	237,774	\$33,789	364	\$41,700												
NAICS 115 Agriculture and forestry support activities	37	\$26,521	309,217	\$20,014	3,475	\$25,658												
NAICS 316 Leather and allied product manufacturing	6	\$46,736	42,547	\$32,991	2,534	\$21,319												

Source: <ftp://ftp.bls.gov/pub/special.requests/cew/>

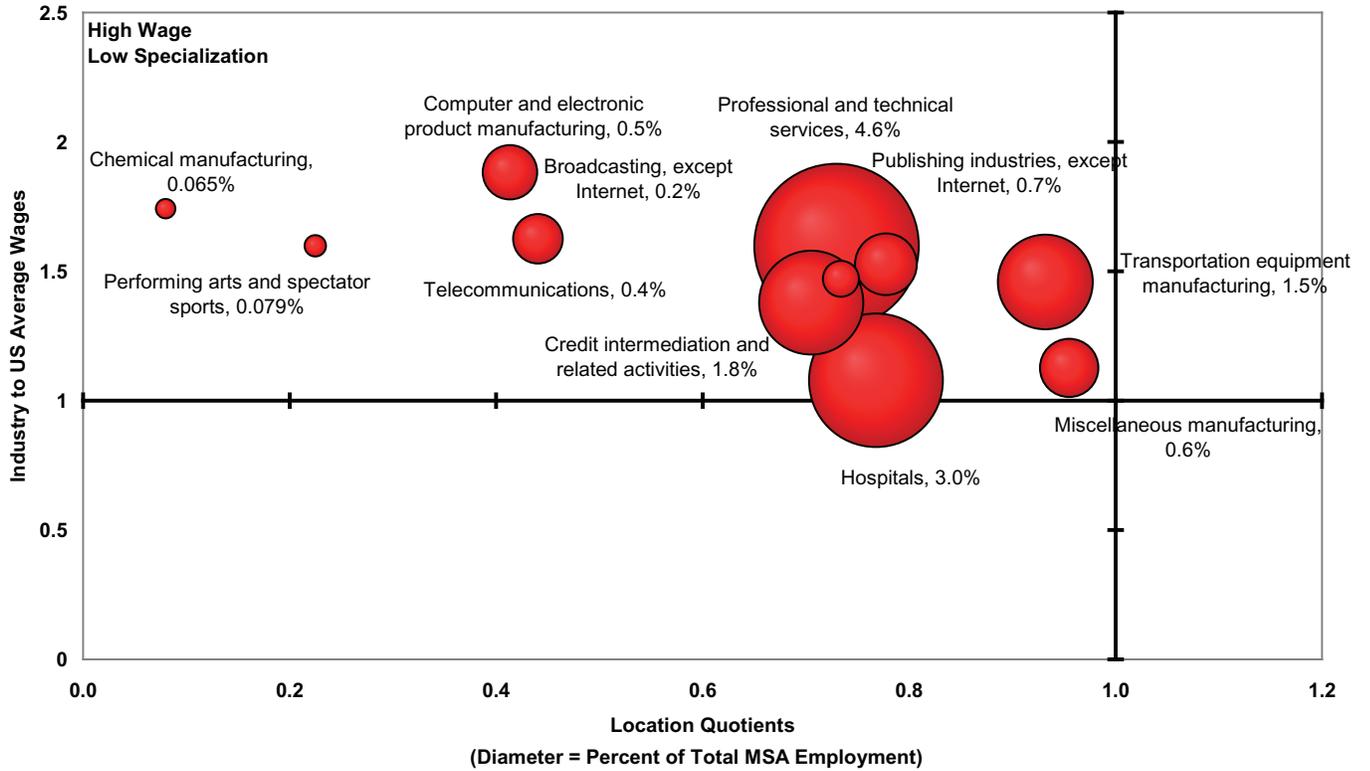
### Fayetteville-Springdale-Rogers MSA 2004 NAICS Three Digit



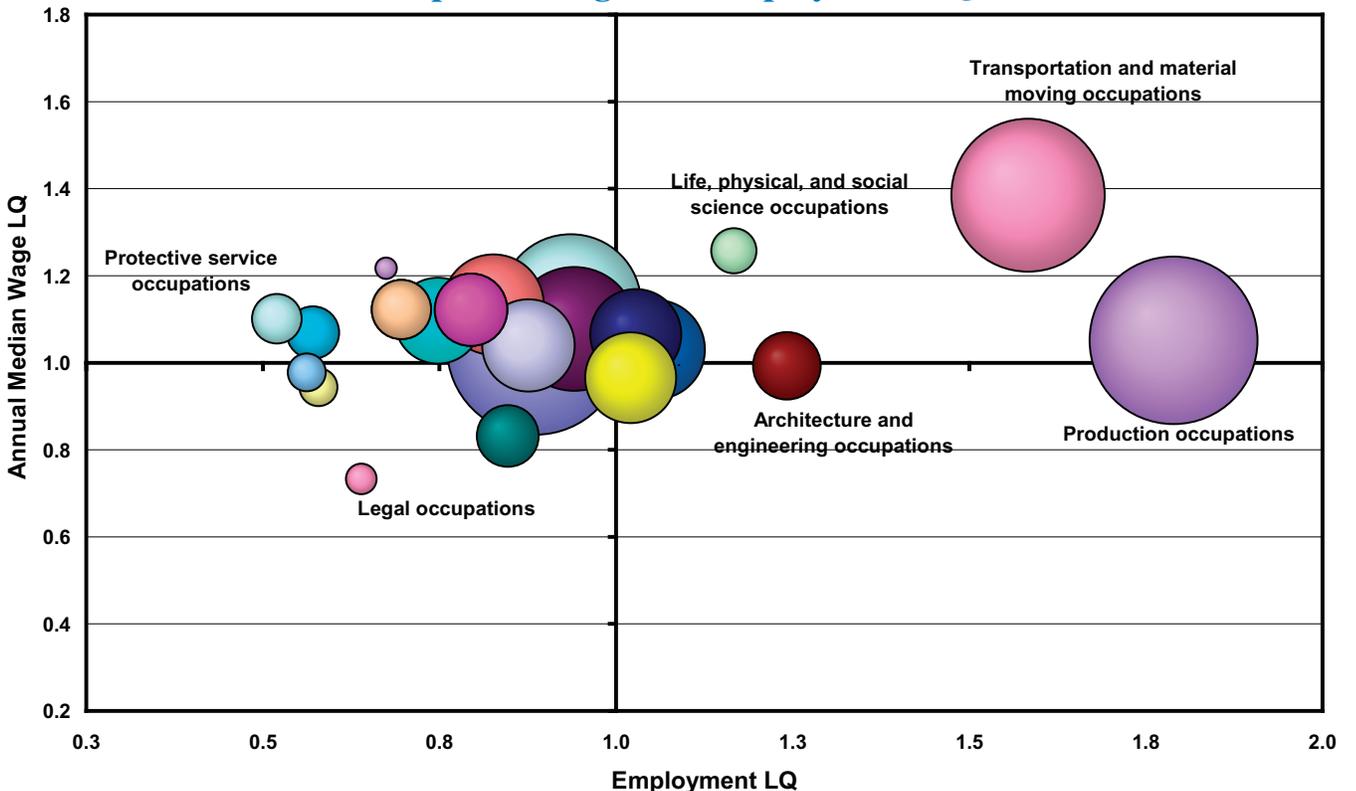
### Fayetteville-Springdale-Rogers MSA 2004 NAICS Three Digit (Detail)



### Fayetteville-Springdale-Rogers MSA 2004 NAICS Three Digit (Detail)



### Fayetteville-Springdale-Rogers MSA 2004 Occupation Wage and Employment LQs



## Fayetteville-Springdale-Rogers AR-MO MSA, 2004

Occupational Title	MSA EMP#	MSA EMP %	MSA Annual Median Wage	US Annual Median Wage	Ratio of MSA Occ Wage to MSA Median Wage	Ratio of US Occ Wage to US Median Wage	Ratio of MSA Occ Wage to US Median Wage	Median Wage LQ
Management occupations	8,560	5.0%	\$63,490	\$75,960	2.29	2.23	1.86	1.03
Business and financial operations occupations	7,150	4.2%	\$39,950	\$51,000	1.44	1.49	1.17	0.97
Computer and mathematical occupations	3,310	1.9%	\$42,810	\$63,440	1.55	1.86	1.25	0.83
Architecture and engineering occupations	3,950	2.3%	\$47,850	\$59,410	1.73	1.74	1.40	0.99
Life, physical, and social science occupations	1,780	1.0%	\$52,180	\$51,150	1.88	1.50	1.53	1.26
Community and social services occupations	1,260	0.7%	\$26,930	\$33,940	0.97	0.99	0.79	0.98
Legal occupations	830	0.5%	\$37,120	\$62,400	1.34	1.83	1.09	0.73
Education, training, and library occupations	8,780	5.1%	\$36,020	\$39,170	1.30	1.15	1.06	1.13
Arts, design, entertainment, sports, and media occupations	1,270	0.7%	\$27,880	\$36,400	1.01	1.07	0.82	0.94
Healthcare practitioners and technical occupations	6,450	3.7%	\$43,120	\$48,470	1.56	1.42	1.26	1.10
Healthcare support occupations	3,070	1.8%	\$19,990	\$21,950	0.72	0.64	0.59	1.12
Protective service occupations	2,120	1.2%	\$27,500	\$30,790	0.99	0.90	0.81	1.10
Food preparation and serving related occupations	13,340	7.7%	\$13,900	\$15,900	0.50	0.47	0.41	1.08
Building and grounds cleaning and maintenance occupations	4,580	2.7%	\$17,780	\$19,540	0.64	0.57	0.52	1.12
Personal care and service occupations	2,400	1.4%	\$15,860	\$18,280	0.57	0.54	0.46	1.07
Sales and related occupations	17,110	9.9%	\$20,110	\$21,860	0.73	0.64	0.59	1.13
Office and administrative support occupations	26,700	15.5%	\$22,670	\$26,960	0.82	0.79	0.66	1.04
Farming, fishing, and forestry occupations	400	0.2%	\$17,130	\$17,350	0.62	0.51	0.50	1.22
Construction and extraction occupations	7,360	4.3%	\$28,960	\$34,330	1.05	1.01	0.85	1.04
Installation, maintenance, and repair occupations	7,190	4.2%	\$30,690	\$35,520	1.11	1.04	0.90	1.07
Production occupations	24,320	14.1%	\$22,590	\$26,480	0.82	0.78	0.66	1.05
Transportation and material moving occupations	20,260	11.8%	\$27,230	\$24,240	0.98	0.71	0.80	1.38
All Occupations	172,190	100.0%	\$27,690	\$34,135	1.00	1.00	0.81	1.00

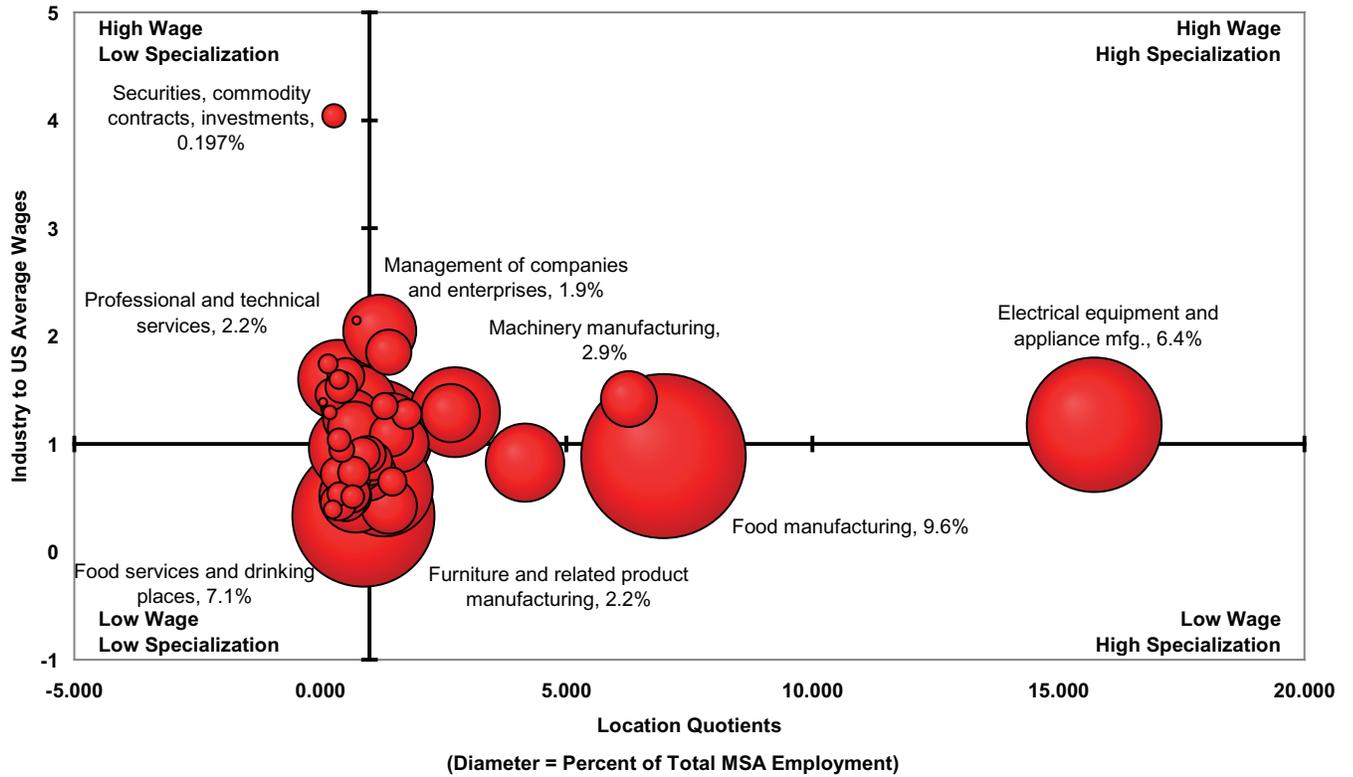
Source: Occupational Employment Statistics (OES) Survey, Bureau of Labor Statistics, Department of Labor. [Http://stat.bs.gov/oes/home.htm](http://stat.bs.gov/oes/home.htm)

**Fort Smith, AR-OK MSA, 2004**

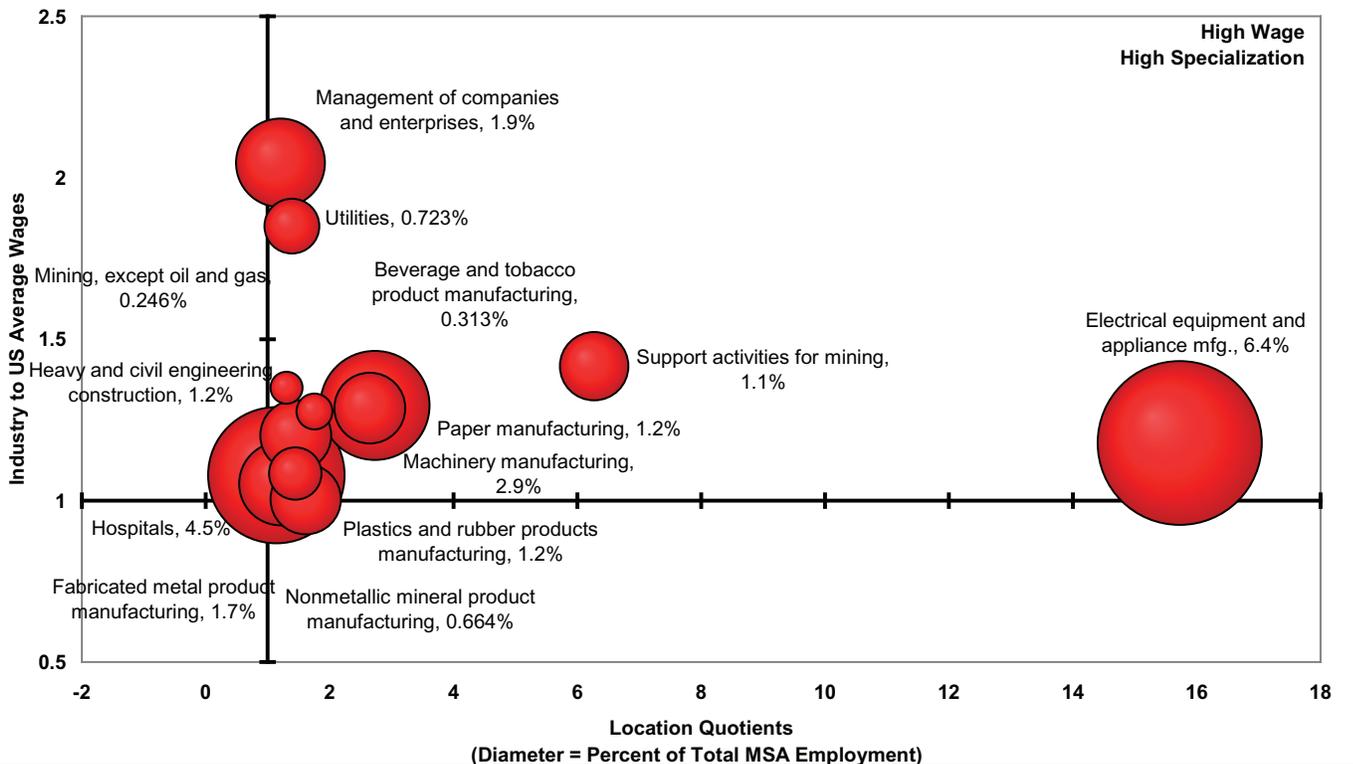
Title	MSA Emp#	MSA Avg Annual Wage	US Emp#	US Avg Annual Wage	AR Emp#	AR Avg Annual Wage	Employment LQ vs. Nation	Employment LQ vs. State	Avg Annual Wage LQ vs. Nation	Avg Annual Wage LQ vs. State
Total, all industries	98,005	\$27,962	108,490,066	\$39,134	942,044	\$29,802				
Goods-Producing	35,318	\$32,646	22,848,815	\$44,776	273,638	\$32,490	1.711	1.241	1.020	1.071
Service-Providing	62,687	\$25,323	85,641,251	\$37,629	668,406	\$28,702	0.810	0.901	0.942	0.940
NAICS 335 Electrical equipment and appliance mfg.	6,306	\$38,317	443,840	\$46,126	12,963	\$36,190	15.728	4.676	1.163	1.128
NAICS 622 Hospitals	4,370	\$35,854	4,246,724	\$42,205	41,784	\$34,009	1.139	1.005	1.189	1.124
NAICS 333 Machinery manufacturing	2,806	\$40,436	1,136,771	\$50,679	13,977	\$33,649	2.732	1.930	1.117	1.281
NAICS 551 Management of companies and enterprises	1,852	\$67,246	1,696,537	\$80,054	22,791	\$65,066	1.208	0.781	1.176	1.102
NAICS 332 Fabricated metal product manufacturing	1,635	\$30,790	1,488,713	\$41,189	17,740	\$34,800	1.216	0.886	1.046	0.943
NAICS 322 Paper manufacturing	1,181	\$42,719	493,341	\$50,357	12,226	\$48,360	2.650	0.929	1.187	0.941
NAICS 237 Heavy and civil engineering construction	1,175	\$30,789	894,976	\$47,027	9,679	\$32,679	1.453	1.167	0.916	1.004
NAICS 326 Plastics and rubber products manufacturing	1,172	\$28,426	803,718	\$39,317	13,121	\$36,380	1.614	0.859	1.012	0.833
NAICS 213 Support activities for mining	1,101	\$43,105	194,361	\$55,433	1,519	\$43,078	6.271	6.967	1.088	1.066
NAICS 221 Utilities	709	\$44,258	563,931	\$72,403	6,530	\$60,975	1.392	1.044	0.856	0.774
NAICS 327 Nonmetallic mineral product manufacturing	651	\$37,673	498,486	\$42,419	4,445	\$34,439	1.446	1.408	1.243	1.166
NAICS 312 Beverage and tobacco product manufacturing	307	\$42,733	193,682	\$49,929	1,252	\$35,976	1.755	2.357	1.198	1.266
NAICS 212 Mining, except oil and gas	241	\$32,614	204,225	\$52,827	2,041	\$39,626	1.306	1.135	0.864	0.877
NAICS 541 Professional and technical services	2,185	\$30,426	6,768,868	\$62,547	33,697	\$44,010	0.623	0.681	0.681	0.737
NAICS 522 Credit intermediation and related activities	1,975	\$29,740	2,813,110	\$53,965	20,883	\$34,541	0.777	0.909	0.771	0.918
NAICS 424 Merchant wholesalers, nondurable goods	1,149	\$31,750	1,999,979	\$48,599	16,512	\$35,704	0.636	0.669	0.914	0.948
NAICS 236 Construction of buildings	1,025	\$29,495	1,618,549	\$44,757	11,766	\$33,464	1.176	0.837	0.922	0.939
NAICS 517 Telecommunications	481	\$40,755	1,026,957	\$63,635	8,684	\$49,561	0.518	0.532	0.896	0.876
NAICS 336 Transportation equipment manufacturing	352	\$26,327	1,763,438	\$57,082	16,199	\$33,146	0.221	0.209	0.645	0.847
NAICS 511 Publishing industries, except Internet	349	\$26,326	907,542	\$59,764	6,487	\$29,177	0.426	0.517	0.616	0.962
NAICS 523 Securities, commodity contracts, investments	193	\$61,556	765,202	\$158,145	3,105	\$84,373	0.380	0.363	0.545	0.778
NAICS 488 Support activities for transportation	182	\$26,540	530,614	\$40,605	4,815	\$36,032	0.378	0.605	0.915	0.785
NAICS 711 Performing arts and spectator sports	130	\$16,664	380,542	\$62,559	2,066	\$15,659	0.378	0.605	0.373	1.134
NAICS 325 Chemical manufacturing	128	\$29,356	881,799	\$68,157	5,132	\$48,268	0.161	0.240	0.603	0.648
NAICS 512 Motion picture and sound recording industries	66	\$8,925	380,300	\$50,606	1,220	\$14,847	0.192	0.520	0.247	0.641
NAICS 481 Air transportation	26	\$28,036	513,180	\$54,304	1,097	\$48,978	0.056	0.228	0.723	0.610
NAICS 486 Pipeline transportation	25	\$54,272	37,581	\$83,932	984	\$51,119	0.736	0.244	0.905	1.132
NAICS 441 Motor vehicle and parts dealers	1,746	\$30,283	1,901,282	\$38,697	17,745	\$31,809	1.017	0.946	1.095	1.015
NAICS 238 Specialty trade contractors	2,490	\$28,601	4,402,873	\$37,641	29,887	\$28,901	0.626	0.801	1.063	1.055
NAICS 492 Couriers and messengers	219	\$33,014	557,491	\$37,117	3,257	\$34,746	0.435	0.646	1.245	1.013
NAICS 443 Electronics and appliance stores	406	\$19,468	521,839	\$35,334	3,070	\$23,281	0.861	1.271	0.771	0.891
NAICS 493 Warehousing and storage	480	\$36,414	555,771	\$35,304	9,896	\$28,319	0.956	0.466	1.444	1.370
NAICS 311 Food manufacturing	9,392	\$26,605	1,490,443	\$34,758	51,711	\$26,819	6.976	1.746	1.071	1.057
NAICS 321 Wood product manufacturing	526	\$29,657	547,973	\$32,965	13,890	\$30,278	1.063	0.364	1.259	1.044
NAICS 337 Furniture and related product manufacturing	2,136	\$25,865	568,548	\$32,383	7,917	\$27,829	4.159	2.593	1.118	0.991
NAICS 532 Rental and leasing services	572	\$28,836	641,022	\$31,382	5,077	\$22,667	0.988	1.083	1.286	1.356
NAICS 811 Repair and maintenance	876	\$25,193	1,221,991	\$30,870	9,616	\$26,117	0.794	0.876	1.142	1.028
NAICS 446 Health and personal care stores	563	\$27,839	940,725	\$28,912	6,041	\$26,206	0.663	0.896	1.348	1.132
NAICS 442 Furniture and home furnishings stores	347	\$22,201	563,822	\$28,784	4,119	\$24,531	0.681	0.810	1.079	0.965
NAICS 444 Building material and garden supply stores	1,081	\$22,481	1,234,084	\$28,599	9,871	\$24,365	0.970	1.053	1.100	0.983
NAICS 813 Membership associations and organizations	421	\$22,706	1,297,153	\$28,199	6,289	\$21,687	0.359	0.643	1.127	1.116
NAICS 112 Animal production	276	\$30,351	208,871	\$25,492	3,841	\$29,943	1.463	0.691	1.666	1.080
NAICS 623 Nursing and residential care facilities	3,286	\$16,591	2,810,169	\$23,234	25,670	\$18,059	1.294	1.230	0.999	0.979
NAICS 453 Miscellaneous store retailers	519	\$17,786	918,450	\$21,052	7,195	\$16,917	0.626	0.693	1.182	1.121
NAICS 111 Crop production	192	\$19,170	555,437	\$20,973	3,926	\$20,463	0.383	0.470	1.279	0.998
NAICS 812 Personal and laundry services	672	\$18,142	1,266,102	\$20,394	8,397	\$19,094	0.588	0.769	1.245	1.013
NAICS 445 Food and beverage stores	1,830	\$13,588	2,818,261	\$20,144	19,493	\$15,161	0.719	0.902	0.944	0.955
NAICS 115 Agriculture and forestry support activities	184	\$16,831	309,217	\$20,014	3,475	\$25,658	0.659	0.509	1.177	0.699
NAICS 448 Clothing and clothing accessories stores	638	\$14,032	1,367,631	\$18,885	8,157	\$14,062	0.516	0.752	1.040	1.064
NAICS 713 Amusements, gambling, and recreation	453	\$12,987	1,355,446	\$17,927	6,852	\$13,271	0.370	0.635	1.014	1.043
NAICS 447 Gasoline stations	1,100	\$11,576	872,863	\$16,668	13,093	\$13,090	1.395	0.808	0.972	0.943
NAICS 814 Private households	114	\$15,861	502,754	\$15,377	1,450	\$18,119	0.251	0.756	1.444	0.933
NAICS 722 Food services and drinking places	6,979	\$10,256	8,829,636	\$13,099	70,770	\$10,285	0.875	0.948	1.096	1.063

Source: <http://ftp.bls.gov/pub/special.requests/cew/>

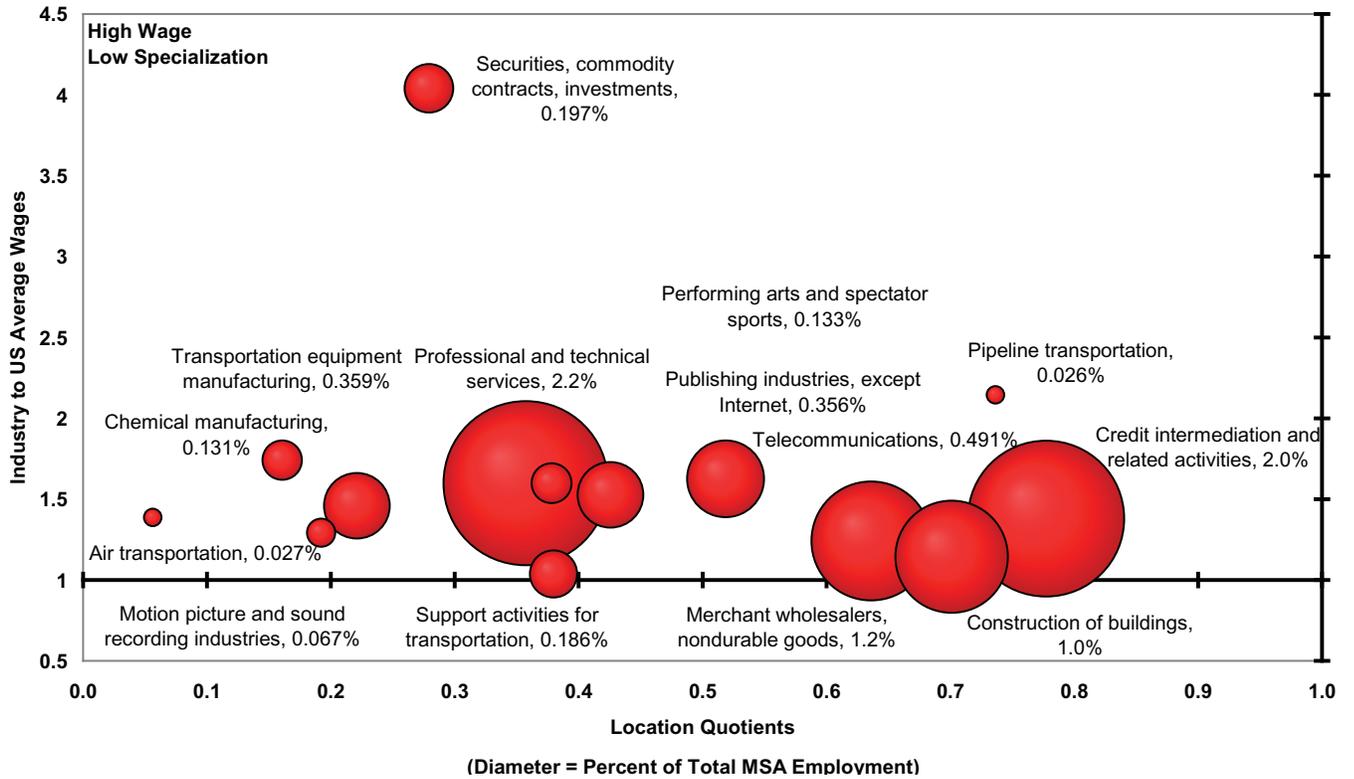
### Fort Smith, AR-OK MSA 2004 NAICS Three Digit



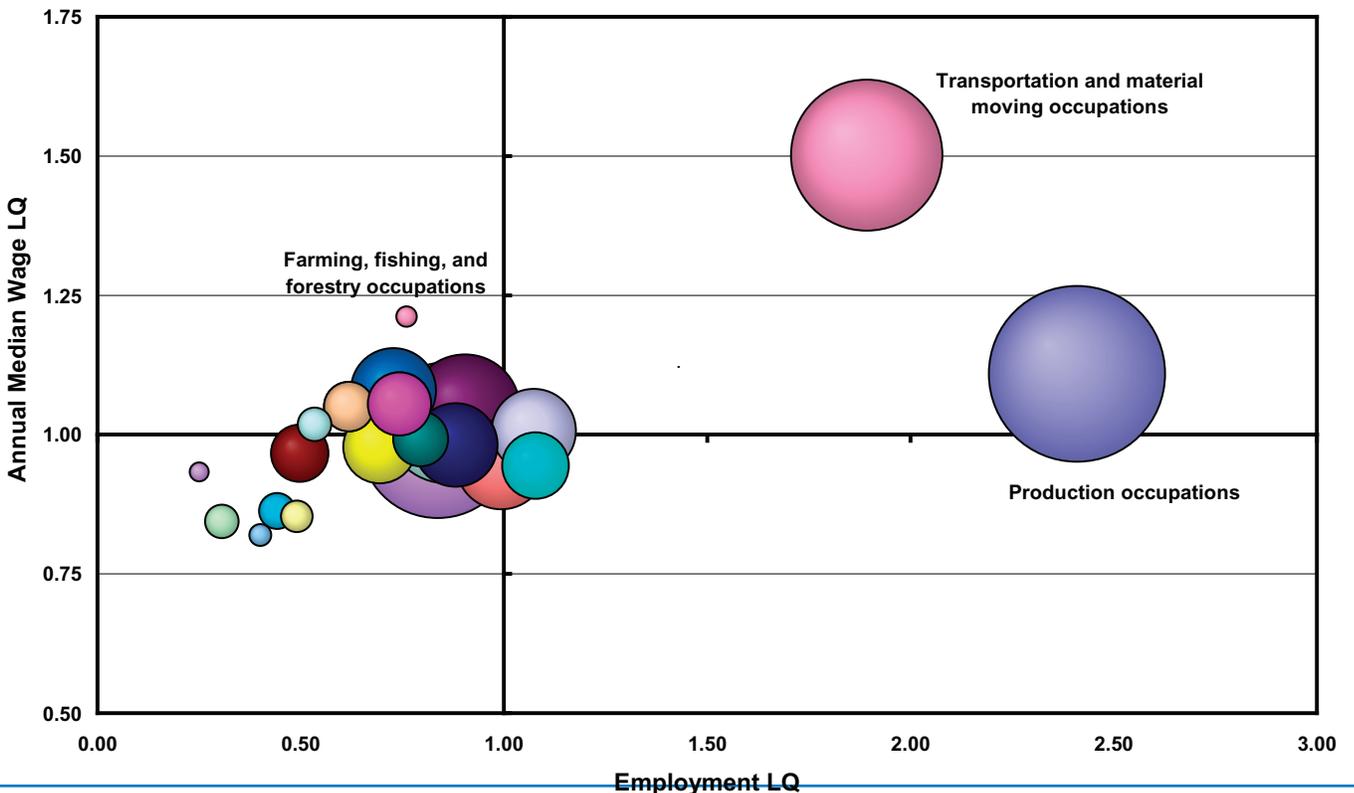
### Fort Smith, AR-OK MSA 2004 NAICS Three Digit (Detail)



### Fort Smith, AR-OK MSA 2004 NAICS Three Digit (Detail)



### Fort Smith, AR-OK MSA 2004 Occupation Wage and Employment LQs



## Fort Smith AR-OK MSA, 2004

Occupational Title	MSA EMP#	MSA EMP %	MSA Annual Median Wage	US Annual Median Wage	Ratio of MSA Occ Wage to MSA Median Wage	Ratio of US Occ Wage to US Median Wage	Ratio of MSA Occ Wage to US Median Wage	Median Wage LQ
Management occupations	3,250	3.3%	\$61,100	\$75,960	2.18	2.23	1.79	0.98
Business and financial operations occupations	2,010	2.0%	\$40,530	\$51,000	1.44	1.49	1.19	0.97
Computer and mathematical occupations	690	0.7%	\$44,030	\$63,440	1.57	1.86	1.29	0.84
Architecture and engineering occupations	810	0.8%	\$42,150	\$59,410	1.50	1.74	1.23	0.86
Life, physical, and social science occupations	220	0.2%	\$39,240	\$51,150	1.40	1.50	1.15	0.93
Community and social services occupations	690	0.7%	\$28,430	\$33,940	1.01	0.99	0.83	1.02
Legal occupations	300	0.3%	\$42,070	\$62,400	1.50	1.83	1.23	0.82
Education, training, and library occupations	4,460	4.5%	\$34,760	\$39,170	1.24	1.15	1.02	1.08
Arts, design, entertainment, sports, and media occupations	620	0.6%	\$25,540	\$36,400	0.91	1.07	0.75	0.85
Healthcare practitioners and technical occupations	4,940	5.0%	\$37,730	\$48,470	1.34	1.42	1.11	0.95
Healthcare support occupations	2,740	2.8%	\$17,050	\$21,950	0.61	0.64	0.50	0.94
Protective service occupations	1,870	1.9%	\$25,120	\$30,790	0.89	0.90	0.74	0.99
Food preparation and serving related occupations	7,390	7.4%	\$13,670	\$15,900	0.49	0.47	0.40	1.05
Building and grounds cleaning and maintenance occupations	2,470	2.5%	\$16,950	\$19,540	0.60	0.57	0.50	1.05
Personal care and service occupations	1,500	1.5%	\$15,790	\$18,280	0.56	0.54	0.46	1.05
Sales and related occupations	9,060	9.1%	\$18,360	\$21,860	0.65	0.64	0.54	1.02
Office and administrative support occupations	14,550	14.7%	\$21,910	\$26,960	0.78	0.79	0.64	0.99
Farming, fishing, and forestry occupations	260	0.3%	\$17,290	\$17,350	0.62	0.51	0.51	1.21
Construction and extraction occupations	4,270	4.3%	\$27,710	\$34,330	0.99	1.01	0.81	0.98
Installation, maintenance, and repair occupations	4,330	4.4%	\$29,400	\$35,520	1.05	1.04	0.86	1.01
Production occupations	18,880	19.0%	\$24,150	\$26,480	0.86	0.78	0.71	1.11
Transportation and material moving occupations	13,960	14.1%	\$29,930	\$24,240	1.07	0.71	0.88	1.50
All Occupations	99,270	100.0%	\$28,070	\$34,135	1.00	1.00	0.82	1.00

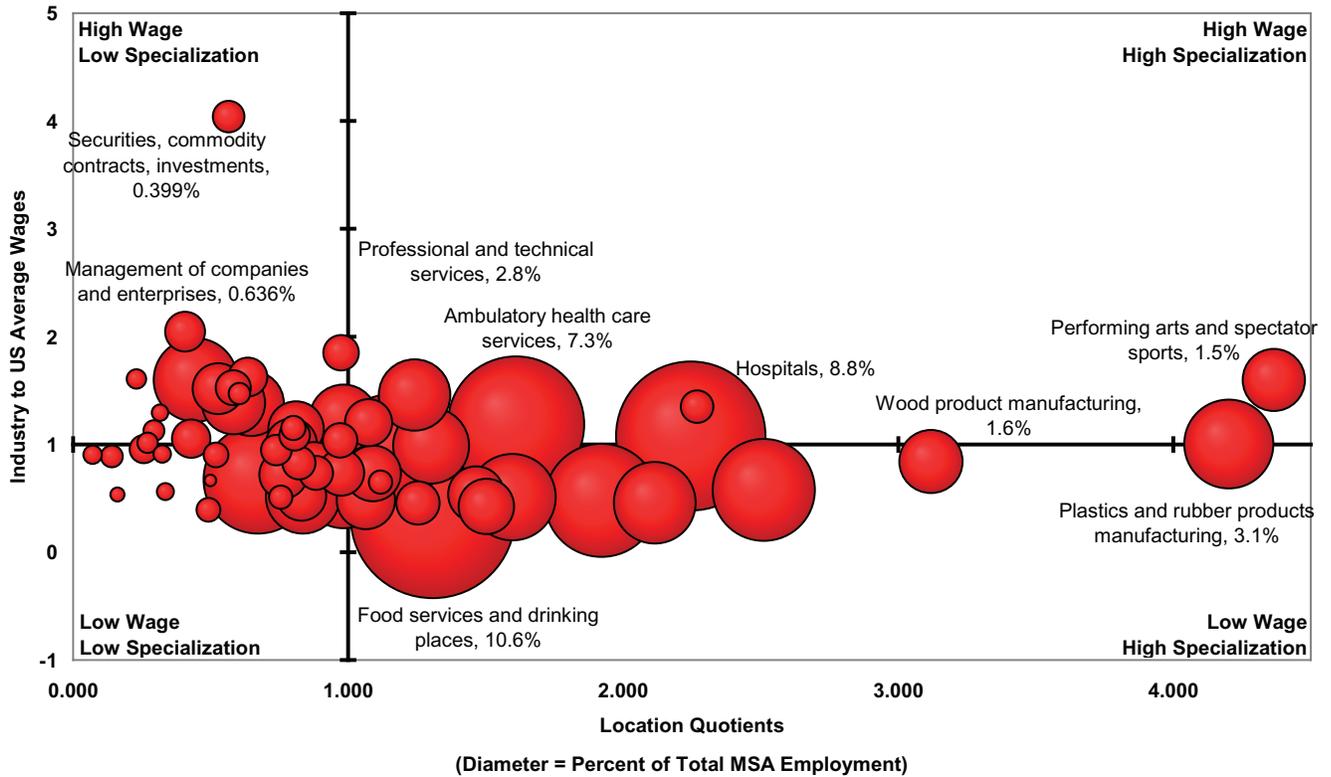
Source: Occupational Employment Statistics (OES) Survey, Bureau of Labor Statistics, Department of Labor. [Http://stat.bs.gov/oes/home.htm](http://stat.bs.gov/oes/home.htm)

**Hot Springs MSA, 2004**

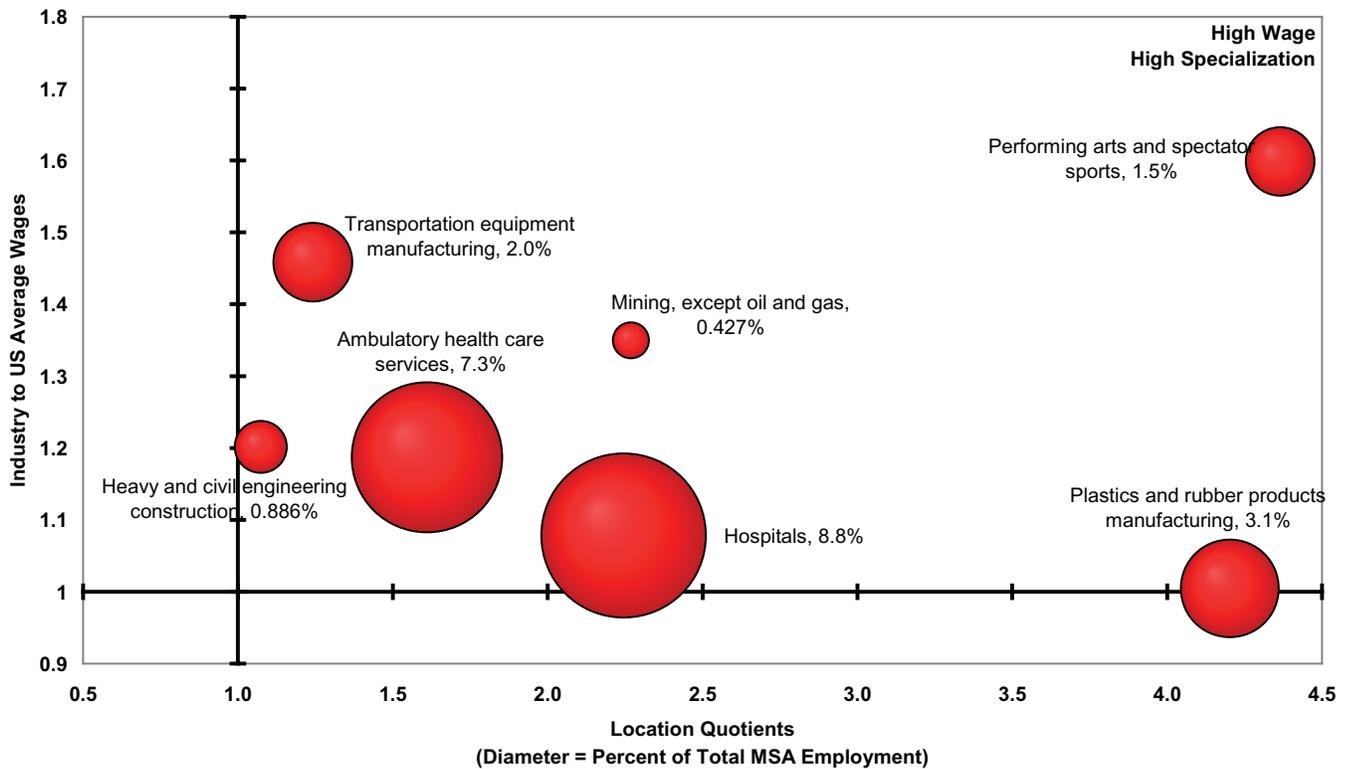
Title	MSA Emp#	MSA Avg Annual Wage	US Emp#	US Avg Annual Wage	AR Emp#	AR Avg Annual Wage	Employment LQ vs. Nation	vs. State	Avg Annual Wage LQ vs. Nation	vs. State
Total, all industries	31,610	\$25,233	108,490,066	\$39,134	942,044	\$29,802				
Goods-Producing	5,972	\$28,540	22,848,815	\$44,776	273,638	\$32,490	0.897	0.650	0.989	1.037
Service-Providing	25,638	\$24,462	85,641,251	\$37,629	668,406	\$38,702	1.027	1.143	1.008	1.007
NAICS 622 Hospitals	2,778	\$34,943	4,246,724	\$42,205	41,784	\$34,009	2.245	1.981	1.284	1.214
NAICS 611 Ambulatory health care services	2,316	\$44,418	4,937,542	\$46,455	39,600	\$46,248	1.610	1.743	1.483	1.134
NAICS 326 Plastics and rubber products manufacturing	984	\$24,999	803,718	\$39,317	13,121	\$36,380	4.202	2.235	0.986	0.812
NAICS 336 Transportation equipment manufacturing	638	\$34,644	1,763,438	\$57,082	16,199	\$33,146	1.242	1.174	0.941	1.234
NAICS 711 Performing arts and spectator sports	484	\$16,462	380,542	\$62,559	2,066	\$15,659	4.365	6.982	0.408	1.242
NAICS 237 Heavy and civil engineering construction	280	\$29,901	894,976	\$47,027	9,679	\$32,679	1.074	0.862	0.986	1.081
NAICS 212 Mining, except oil and gas	135	\$40,875	204,225	\$52,827	2,041	\$39,626	2.269	1.971	1.200	1.218
NAICS 541 Professional and technical services	878	\$30,072	6,768,868	\$62,547	33,697	\$44,010	0.445	0.777	0.746	0.807
NAICS 424 Merchant wholesalers, nondurable goods	573	\$27,825	1,999,979	\$48,599	16,512	\$35,704	0.983	1.034	0.888	0.920
NAICS 522 Credit intermediation and related activities	531	\$34,450	2,813,110	\$53,965	20,883	\$34,541	0.648	0.758	0.990	1.178
NAICS 423 Merchant wholesalers, durable goods	500	\$33,963	2,942,167	\$54,239	21,133	\$40,169	0.583	0.705	0.971	0.999
NAICS 236 Construction of buildings	382	\$24,018	1,618,549	\$44,757	11,766	\$33,464	0.810	0.968	0.832	0.848
NAICS 524 Insurance carriers and related activities	327	\$35,082	2,127,872	\$59,371	11,457	\$42,814	0.527	0.851	0.916	0.968
NAICS 531 Real estate	326	\$23,659	1,410,422	\$39,263	8,061	\$25,550	0.793	1.205	0.935	1.094
NAICS 551 Management of companies and enterprises	201	\$84,726	1,696,537	\$80,054	22,791	\$65,066	0.407	0.263	1.641	1.538
NAICS 517 Telecommunications	190	\$41,026	1,026,957	\$63,635	8,684	\$49,561	0.635	0.652	1.000	0.978
NAICS 332 Fabricated metal product manufacturing	186	\$25,687	1,488,713	\$41,189	17,740	\$34,800	0.429	0.312	0.967	0.872
NAICS 221 Utilities	160	\$63,178	563,931	\$72,403	6,530	\$60,975	0.974	0.730	1.353	1.224
NAICS 511 Publishing industries, except Internet	154	\$23,938	907,542	\$59,764	6,487	\$29,177	0.582	0.707	0.621	0.969
NAICS 488 Support activities for transportation	153	\$31,493	530,614	\$40,605	4,815	\$36,032	0.970	0.928	1.203	1.032
NAICS 523 Securities, commodity contracts, investments	126	\$53,734	765,202	\$158,145	3,105	\$84,373	0.565	1.209	0.527	0.752
NAICS 327 Nonmetallic mineral product manufacturing	117	\$26,583	498,486	\$42,419	4,445	\$34,439	0.806	0.784	0.972	0.912
NAICS 562 Waste management and remediation services	76	\$19,468	3,253,840	\$45,081	2,777	\$39,664	0.801	0.816	0.670	0.580
NAICS 515 Broadcasting, except Internet	57	\$24,194	3,23,639	\$57,575	2,151	\$32,277	0.604	0.790	0.652	0.885
NAICS 339 Miscellaneous manufacturing	56	\$28,363	653,623	\$44,087	6,499	\$28,165	0.294	0.257	0.998	1.189
NAICS 323 Printing and related support activities	52	\$19,968	658,480	\$39,751	4,775	\$32,932	0.271	0.325	0.779	0.716
NAICS 425 Electronic markets and agents and brokers	47	\$54,302	700,590	\$62,863	8,292	\$68,073	0.230	0.169	1.340	0.942
NAICS 512 Motion picture and sound recording industries	35	\$12,783	380,300	\$50,606	1,220	\$14,847	0.316	0.855	0.392	1.017
NAICS 441 Motor vehicle and parts dealers	721	\$33,274	1,901,282	\$37,641	17,745	\$31,809	1.302	1.211	1.334	1.235
NAICS 238 Specialty trade contractors	1,481	\$24,566	4,402,873	\$37,641	29,887	\$28,901	1.154	1.477	1.012	1.004
NAICS 484 Truck transportation	101	\$25,641	1,350,775	\$37,415	33,442	\$34,954	0.257	0.090	1.063	0.866
NAICS 492 Couriers and messengers	120	\$32,849	557,491	\$37,117	3,257	\$34,746	0.140	0.035	1.010	0.997
NAICS 454 Nonstore retailers	40	\$24,852	424,384	\$35,699	2,180	\$26,328	0.323	0.547	1.080	1.115
NAICS 611 Educational services	43	\$20,513	2,079,232	\$35,444	7,989	\$25,191	0.071	0.160	0.898	0.962
NAICS 443 Electronics and appliance stores	79	\$21,902	521,839	\$35,334	3,070	\$23,281	0.520	0.767	0.961	1.111
NAICS 311 Food manufacturing	61	\$22,641	1,490,443	\$34,758	51,711	\$26,819	0.140	0.035	1.010	0.997
NAICS 321 Wood product manufacturing	498	\$34,442	547,973	\$32,965	13,890	\$30,278	0.319	1.068	1.620	1.344
NAICS 337 Furniture and related product manufacturing	136	\$19,850	568,548	\$32,383	7,917	\$27,829	0.821	0.512	0.951	0.842
NAICS 811 Repair and maintenance	312	\$22,169	1,221,991	\$30,870	9,616	\$26,117	0.876	0.967	1.114	1.003
NAICS 446 Health and personal care stores	267	\$28,834	940,725	\$28,912	6,041	\$26,206	0.974	1.317	1.547	1.300
NAICS 442 Furniture and home furnishings stores	145	\$25,499	563,822	\$28,784	4,119	\$24,531	0.883	1.049	1.374	1.228
NAICS 444 Building material and garden supply stores	392	\$24,947	1,234,084	\$28,599	9,871	\$24,365	1.184	1.184	1.353	1.209
NAICS 813 Membership associations and organizations	289	\$17,842	1,297,153	\$28,199	6,289	\$21,687	0.765	1.370	0.981	0.972
NAICS 561 Administrative and support services	1,468	\$16,867	7,503,531	\$26,455	48,819	\$17,682	0.671	0.896	0.989	1.127
NAICS 712 Museums, historical sites, zoos, and parks	17	\$10,463	116,933	\$26,078	209	\$14,914	0.479	2.424	0.622	0.829
NAICS 623 Nursing and residential care facilities	68	\$42,173	208,871	\$25,492	3,841	\$29,943	1.117	0.528	2.566	1.663
NAICS 721 Accommodation	1,306	\$15,299	1,785,041	\$22,660	10,980	\$13,220	0.982	0.933	1.213	1.188
NAICS 485 Transit and ground passenger transportation	37	\$14,395	378,352	\$31,984	931	\$15,759	0.336	1.184	1.016	1.079
NAICS 453 Miscellaneous store retailers	392	\$14,350	918,450	\$21,052	7,195	\$16,917	1.465	1.624	1.057	1.002
NAICS 111 Crop production	26	\$14,279	555,437	\$20,973	3,926	\$20,463	0.161	0.197	1.056	0.820
NAICS 812 Personal and laundry services	306	\$17,464	1,266,102	\$20,394	8,397	\$19,094	0.830	1.086	1.328	1.080
NAICS 445 Food and beverage stores	686	\$17,394	2,818,261	\$20,144	19,493	\$15,161	0.835	1.049	1.339	1.355
NAICS 624 Social assistance	936	\$17,394	2,011,296	\$20,029	21,552	\$15,811	1.597	1.294	1.299	1.299
NAICS 115 Agriculture and forestry support activities	68	\$11,834	309,217	\$20,014	3,475	\$25,658	0.583	0.583	0.917	0.545
NAICS 448 Clothing and clothing accessories stores	424	\$13,750	1,367,631	\$18,885	8,157	\$14,062	1.064	1.549	1.129	1.155
NAICS 452 General merchandise stores	1,596	\$16,574	2,851,259	\$18,871	35,473	\$16,758	1.921	1.341	1.362	1.168
NAICS 713 Amusements, gambling, and recreation	835	\$11,860	1,355,446	\$17,927	6,852	\$13,271	2.114	3.632	1.026	1.055
NAICS 451 Sporting goods, hobby, book and music stores	386	\$12,979	646,085	\$17,846	4,259	\$13,974	1.651	1.128	1.254	1.097
NAICS 447 Gasoline stations	232	\$13,497	872,863	\$16,668	13,093	\$13,090	1.502	0.870	1.256	1.218
NAICS 814 Private households	72	\$16,914	502,754	\$15,377	1,450	\$18,119	0.492	1.480	1.706	1.103
NAICS 722 Food services and drinking places	3,364	\$11,718	8,829,636	\$13,099	70,770	\$10,285	1.308	1.417	1.387	1.346

Source: <http://ftp.bls.gov/pub/special.requests/cw/>

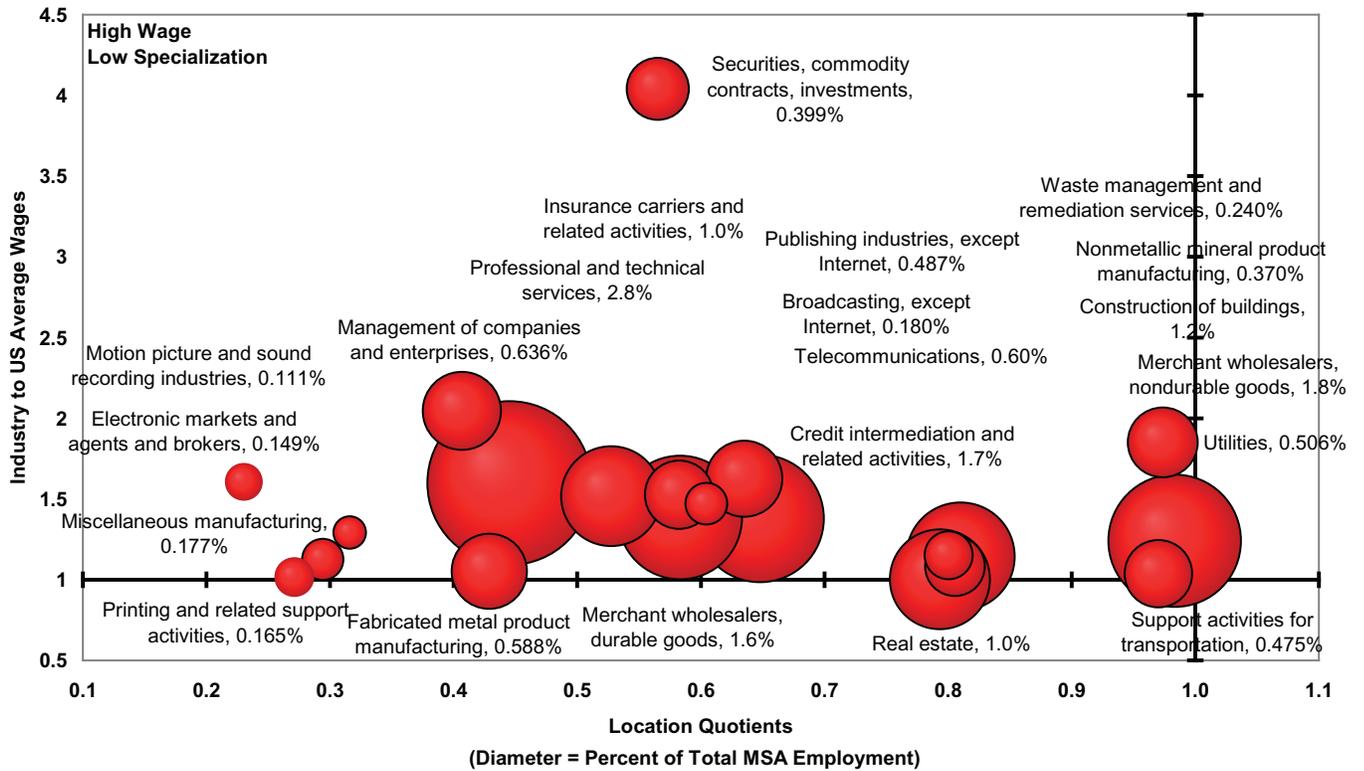
## Hot Springs MSA 2004 NAICS Three Digit



## Hot Springs MSA 2004 NAICS Three Digit (Detail)



## Hot Springs MSA 2004 NAICS Three Digit (Detail)

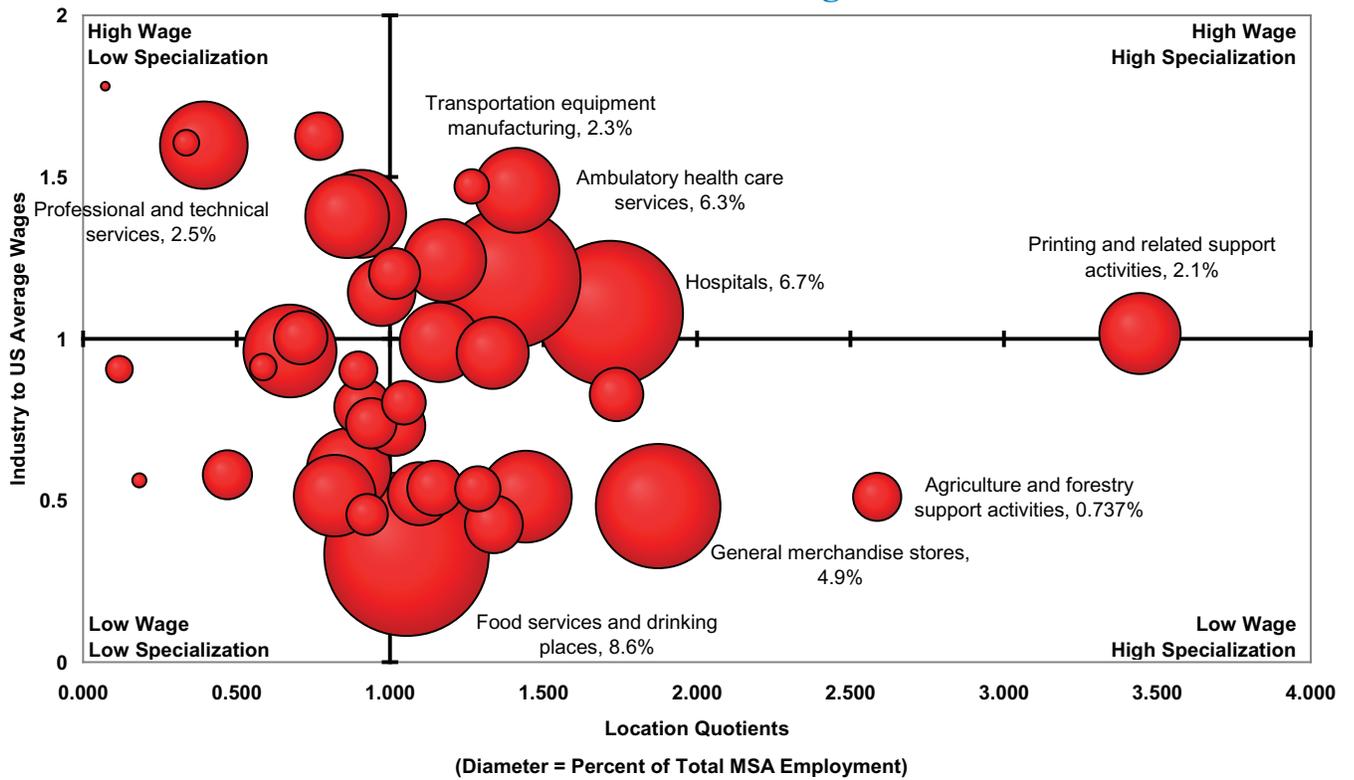


**Jonesboro MSA, 2004**

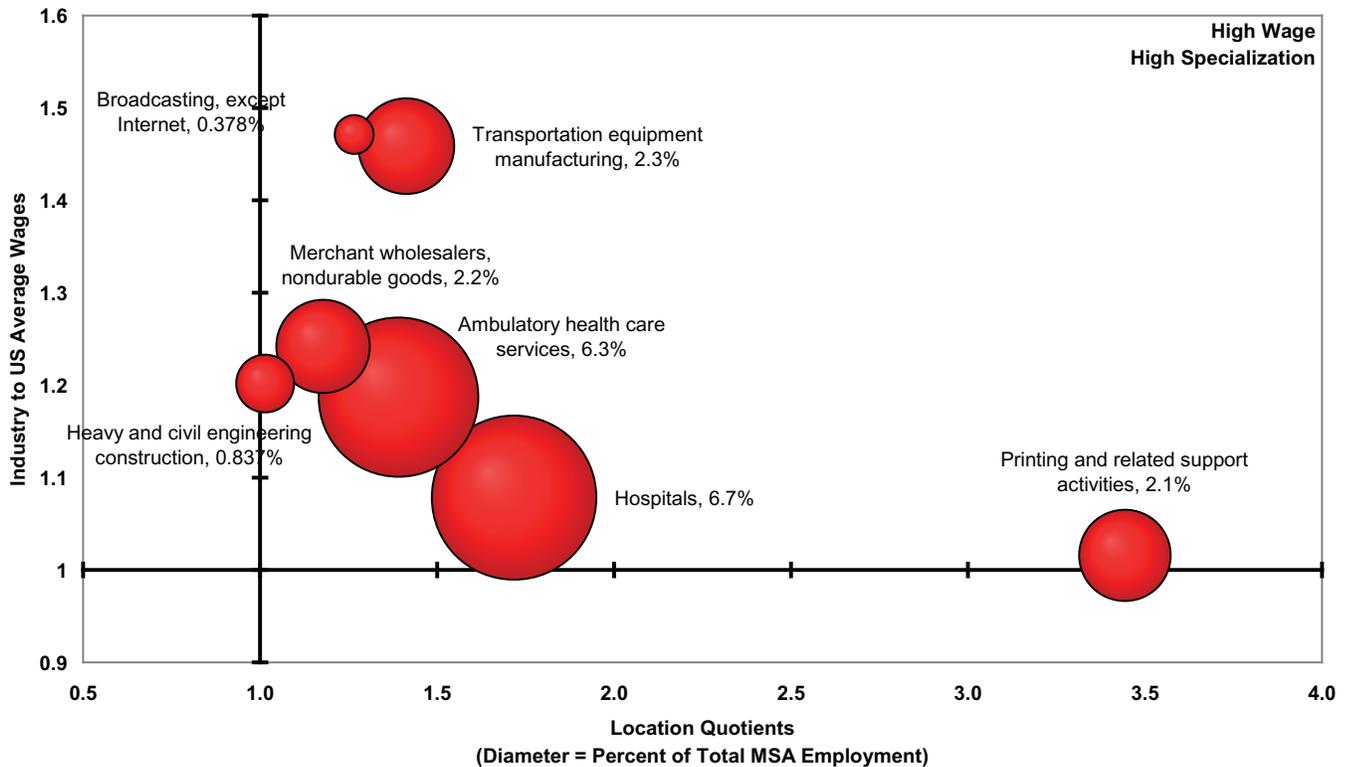
Title	MSA		MSA Avg Annual Wage		US		US Avg Annual Wage		AR		AR Avg Annual Wage		Employment LQ vs. Nation		Avg Annual Wage LQ vs. Nation	
	Emp#	Wage	Emp#	Wage	Emp#	Wage	Emp#	Wage	Emp#	Wage	vs. Nation	vs. State	vs. Nation	vs. State	vs. Nation	vs. State
Total, all industries	39,190	\$26,978	108,490,066	\$39,134	942,044	\$29,802	1,397	1,013	0.989	1,038						
Goods-Producing	11,227	\$30,539	22,848,815	\$44,776	273,638	\$32,490	0.894	0.995	0.983	0.981						
Service-Providing	27,663	\$25,494	85,641,251	\$37,629	668,406	\$28,702	1.718	1.516	1.096	1.035						
NAICS 622 Hospitals	2,635	\$31,877	4,246,724	\$42,205	41,784	\$34,009	1.391	1.506	1.630	1.247						
NAICS 621 Ambulatory health care services	2,481	\$52,193	4,937,542	\$46,455	39,600	\$46,248	1.413	1.336	0.666	0.874						
NAICS 336 Transportation equipment manufacturing	900	\$26,217	1,763,438	\$57,082	16,199	\$33,146	1.178	1.239	0.994	1.031						
NAICS 424 Merchant wholesalers, nondurable goods	851	\$33,312	1,999,979	\$48,599	16,512	\$35,704	3.443	4.123	1.188	1.092						
NAICS 323 Printing and related support activities	819	\$32,564	658,480	\$39,751	4,775	\$32,932	1.015	0.815	0.901	0.988						
NAICS 237 Heavy and civil engineering construction	328	\$29,220	894,976	\$47,027	9,679	\$32,679	1.266	1.654	0.883	1.200						
NAICS 515 Broadcasting, except Internet	148	\$35,052	323,639	\$57,575	2,151	\$32,277	0.909	1.099	0.939	0.966						
NAICS 423 Merchant wholesalers, durable goods	966	\$35,116	2,942,167	\$54,239	21,133	\$40,169	0.393	0.686	0.931	1.008						
NAICS 541 Professional and technical services	961	\$40,144	6,768,868	\$62,547	33,697	\$44,010	0.860	1.006	0.960	1.143						
NAICS 522 Credit intermediation and related activities	874	\$35,732	2,813,110	\$53,965	20,883	\$34,541	0.973	1.162	0.865	0.881						
NAICS 236 Construction of buildings	569	\$26,697	1,618,549	\$44,757	11,766	\$33,464	0.709	1.077	0.907	1.062						
NAICS 531 Real estate	361	\$24,552	1,410,422	\$39,263	8,061	\$25,550	0.768	0.789	1.119	1.094						
NAICS 517 Telecommunications	285	\$49,079	1,026,957	\$63,635	8,684	\$49,561	0.336	0.246	0.954	0.671						
NAICS 425 Electronic markets and agents and brokers	85	\$41,360	700,390	\$62,863	8,292	\$68,073	0.072	0.183	0.635	0.680						
NAICS 518 ISPs, search portals, and data processing	10	\$30,527	382,545	\$69,681	1,314	\$49,598	1.162	1.081	1.049	0.972						
NAICS 441 Motor vehicle and parts dealers	798	\$27,976	1,901,282	\$38,697	17,745	\$31,809	0.674	0.862	1.018	1.010						
NAICS 238 Specialty trade contractors	1,072	\$26,423	4,402,873	\$37,641	29,887	\$28,901	1.334	0.468	1.229	1.002						
NAICS 484 Truck transportation	651	\$31,703	1,350,775	\$37,415	33,442	\$34,954	0.587	0.992	0.962	0.993						
NAICS 454 Nonstore retailers	90	\$23,674	424,384	\$35,699	2,180	\$26,328	0.118	0.268	0.553	0.593						
NAICS 611 Educational services	89	\$13,523	2,079,232	\$35,444	7,989	\$25,191	0.897	0.437	1.119	1.063						
NAICS 493 Warehousing and storage	180	\$27,244	555,771	\$35,304	9,896	\$28,319	1.738	1.084	1.193	1.057						
NAICS 337 Furniture and related product manufacturing	357	\$26,622	568,548	\$32,383	7,917	\$27,829	1.045	1.146	1.003	1.057						
NAICS 532 Rental and leasing services	242	\$21,697	641,022	\$31,382	5,077	\$22,667	0.911	1.005	1.130	1.017						
NAICS 811 Repair and maintenance	402	\$24,047	1,221,991	\$30,870	9,616	\$26,117	0.939	1.269	1.446	1.215						
NAICS 446 Health and personal care stores	319	\$28,828	940,725	\$28,912	6,041	\$26,206	1.016	1.103	1.206	1.078						
NAICS 444 Building material and garden supply stores	453	\$23,769	1,234,084	\$28,599	9,871	\$24,365	0.866	0.823	0.991	1.069						
NAICS 623 Nursing and residential care facilities	879	\$17,475	2,810,169	\$23,234	25,670	\$18,059	0.470	0.663	0.643	0.839						
NAICS 721 Accommodation	303	\$10,044	1,785,041	\$22,660	10,980	\$13,220	0.183	0.645	0.953	1.012						
NAICS 485 Transit and ground passenger transportation	25	\$14,443	378,352	\$21,984	931	\$15,759	1.145	1.270	1.136	1.076						
NAICS 453 Miscellaneous store retailers	380	\$16,482	918,450	\$21,052	7,195	\$16,917	1.286	1.580	1.814	1.416						
NAICS 111 Crop production	258	\$26,232	555,437	\$20,973	3,926	\$20,463	1.095	1.434	1.673	1.361						
NAICS 812 Personal and laundry services	501	\$23,518	1,266,102	\$20,394	8,397	\$19,094	0.820	1.030	0.971	0.982						
NAICS 445 Food and beverage stores	835	\$13,479	2,818,261	\$20,144	19,493	\$15,161	1.442	1.169	1.441	1.390						
NAICS 624 Social assistance	1,048	\$19,895	2,011,296	\$20,029	21,552	\$15,811	2.587	1.999	2.025	1.203						
NAICS 115 Agriculture and forestry support activities	289	\$27,943	309,217	\$20,014	3,475	\$25,658	1.874	1.308	1.235	1.059						
NAICS 452 General merchandise stores	1,930	\$16,066	2,851,259	\$18,871	35,473	\$16,758	0.926	1.219	0.975	0.949						
NAICS 451 Sporting goods, hobby, book and music stores	216	\$11,999	646,085	\$17,846	4,259	\$13,974	1.338	0.775	1.239	1.201						
NAICS 447 Gasoline stations	422	\$14,236	872,863	\$16,668	13,093	\$13,090	1.054	1.142	1.087	1.054						
NAICS 722 Food services and drinking places	3,362	\$9,814	8,829,636	\$13,099	70,770	\$10,285										

Source: <http://ftp.bls.gov/pub/special.requests/cew/>

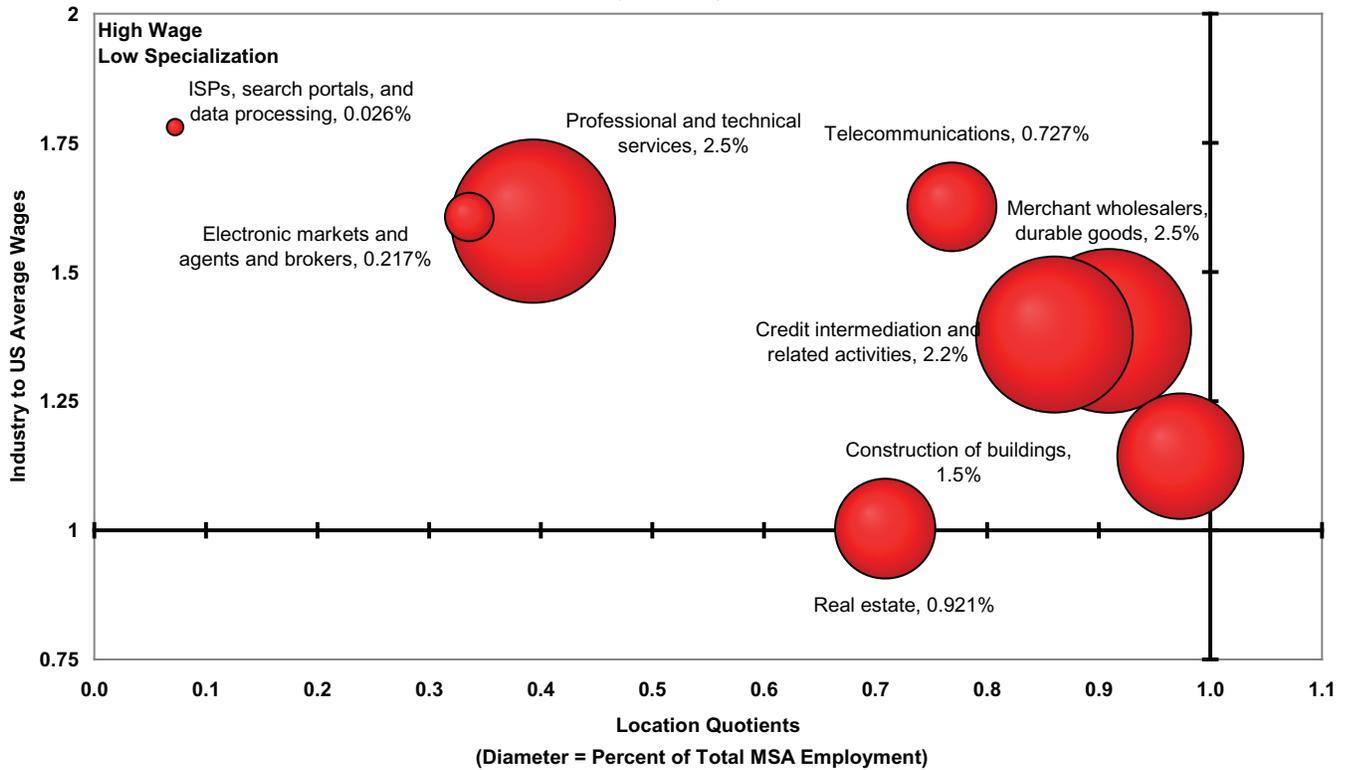
### Jonesboro MSA 2004 NAICS Three Digit



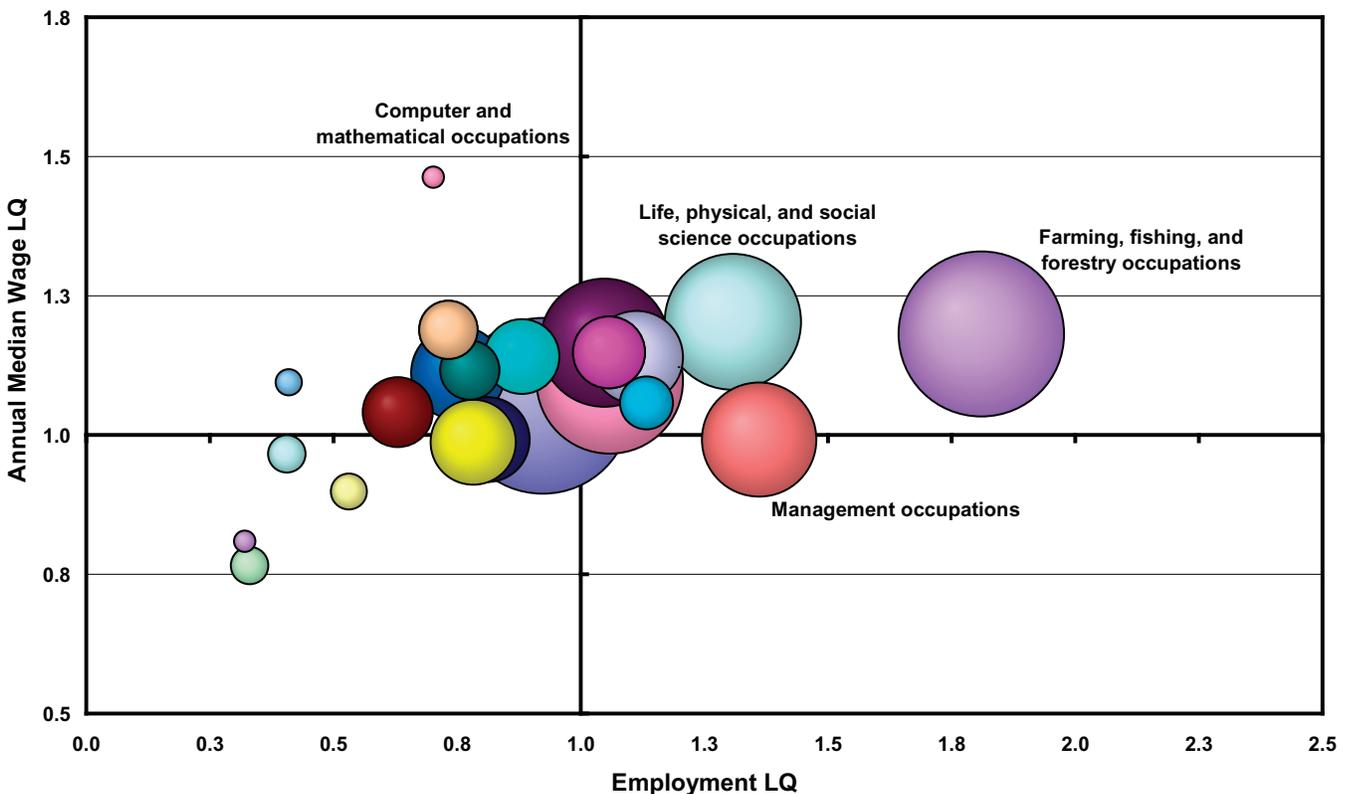
### Jonesboro MSA 2004 NAICS Three Digit (Detail)



### Jonesboro MSA 2004 NAICS Three Digit (Detail)



### Jonesboro MSA 2004 NAICS Three Digit (Detail)



**Jonesboro MSA, 2004**

Occupational Title	MSA EMP#	MSA EMP %	MSA Annual Median Wage	US Annual Median Wage	Ratio of MSA Occ Wage to MSA Median Wage	Ratio of US Occ Wage to US Median Wage	Ratio of MSA Occ Wage to US Median Wage	Median Wage LQ
Management occupations	1,580	3.8%	\$55,530	\$75,960	2.21	2.23	1.63	0.99
Business and financial operations occupations	1,060	2.6%	\$39,140	\$51,000	1.56	1.49	1.15	1.04
Computer and mathematical occupations	310	0.7%	\$35,800	\$63,440	1.42	1.86	1.05	0.77
Architecture and engineering occupations	310	0.7%	\$42,300	\$59,410	1.68	1.74	1.24	0.97
Life, physical, and social science occupations	150	0.4%	\$41,280	\$51,150	1.64	1.50	1.21	1.09
Community and social services occupations	610	1.5%	\$26,460	\$33,940	1.05	0.99	0.78	1.06
Legal occupations	100	0.2%	\$37,230	\$62,400	1.48	1.83	1.09	0.81
Education, training, and library occupations	1,920	4.6%	\$32,090	\$39,170	1.28	1.15	0.94	1.11
Arts, design, entertainment, sports, and media occupations	280	0.7%	\$24,110	\$36,400	0.96	1.07	0.71	0.90
Healthcare practitioners and technical occupations	2,820	6.8%	\$35,440	\$48,470	1.41	1.42	1.04	0.99
Healthcare support occupations	1,120	2.7%	\$18,580	\$21,950	0.74	0.64	0.54	1.15
Protective service occupations	760	1.8%	\$25,340	\$30,790	1.01	0.90	0.74	1.12
Food preparation and serving related occupations	3,570	8.6%	\$13,660	\$15,900	0.54	0.47	0.40	1.17
Building and grounds cleaning and maintenance occupations	1,220	2.9%	\$16,430	\$19,540	0.65	0.57	0.48	1.14
Personal care and service occupations	740	1.8%	\$16,020	\$18,280	0.64	0.54	0.47	1.19
Sales and related occupations	4,650	11.2%	\$17,690	\$21,860	0.70	0.64	0.52	1.10
Office and administrative support occupations	6,690	16.2%	\$20,910	\$26,960	0.83	0.79	0.61	1.05
Farming, fishing, and forestry occupations	100	0.2%	\$18,710	\$17,350	0.74	0.51	0.55	1.46
Construction and extraction occupations	1,580	3.8%	\$24,980	\$34,330	0.99	1.01	0.73	0.99
Installation, maintenance, and repair occupations	1,870	4.5%	\$29,830	\$35,520	1.19	1.04	0.87	1.14
Production occupations	5,910	14.3%	\$23,060	\$26,480	0.92	0.78	0.68	1.18
Transportation and material moving occupations	4,020	9.7%	\$21,500	\$24,240	0.85	0.71	0.63	1.20
All Occupations	41,370	100.0%	\$25,160	\$34,135	1.00	1.00	0.74	1.00

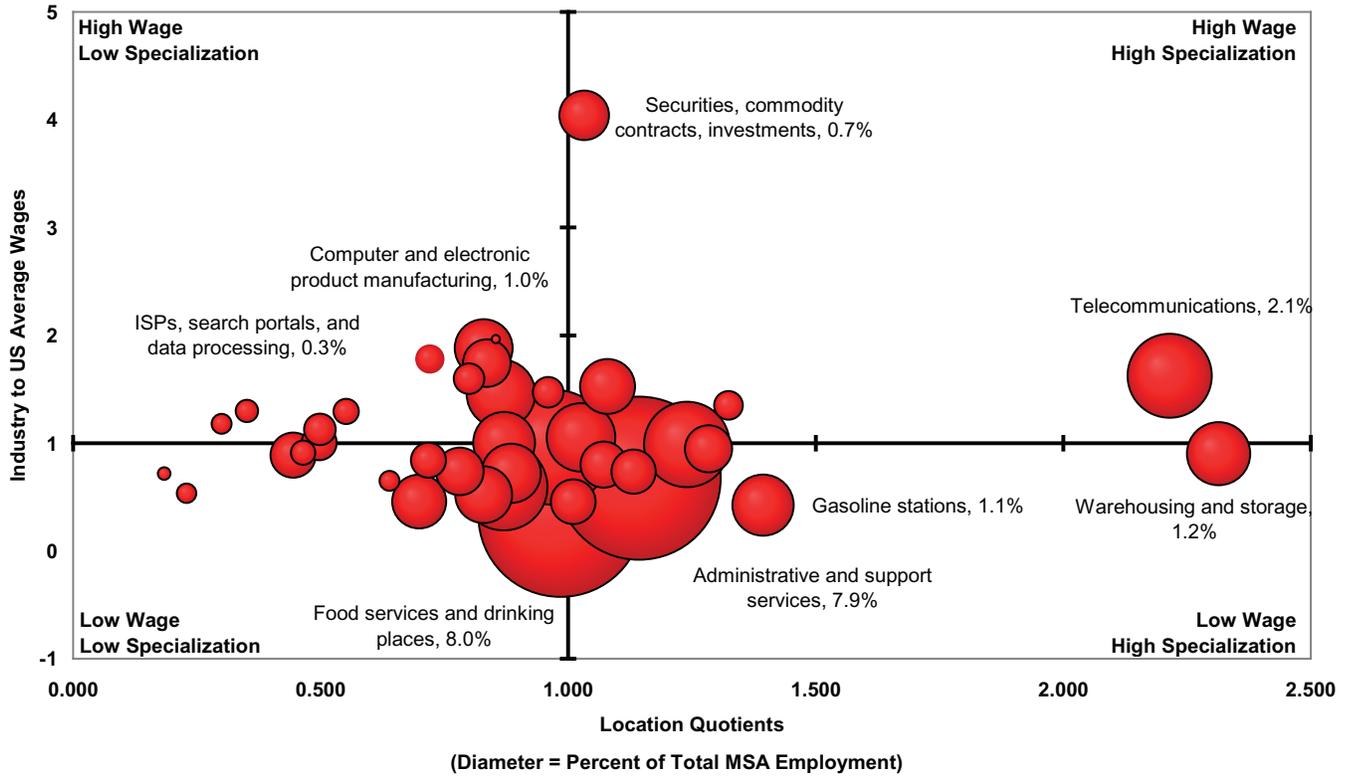
Source: Occupational Employment Statistics (OES) Survey, Bureau of Labor Statistics, Department of Labor. [Http://stat.bs.gov/oes/home.htm](http://stat.bs.gov/oes/home.htm)

**Little Rock-North Little Rock MSA, 2004**

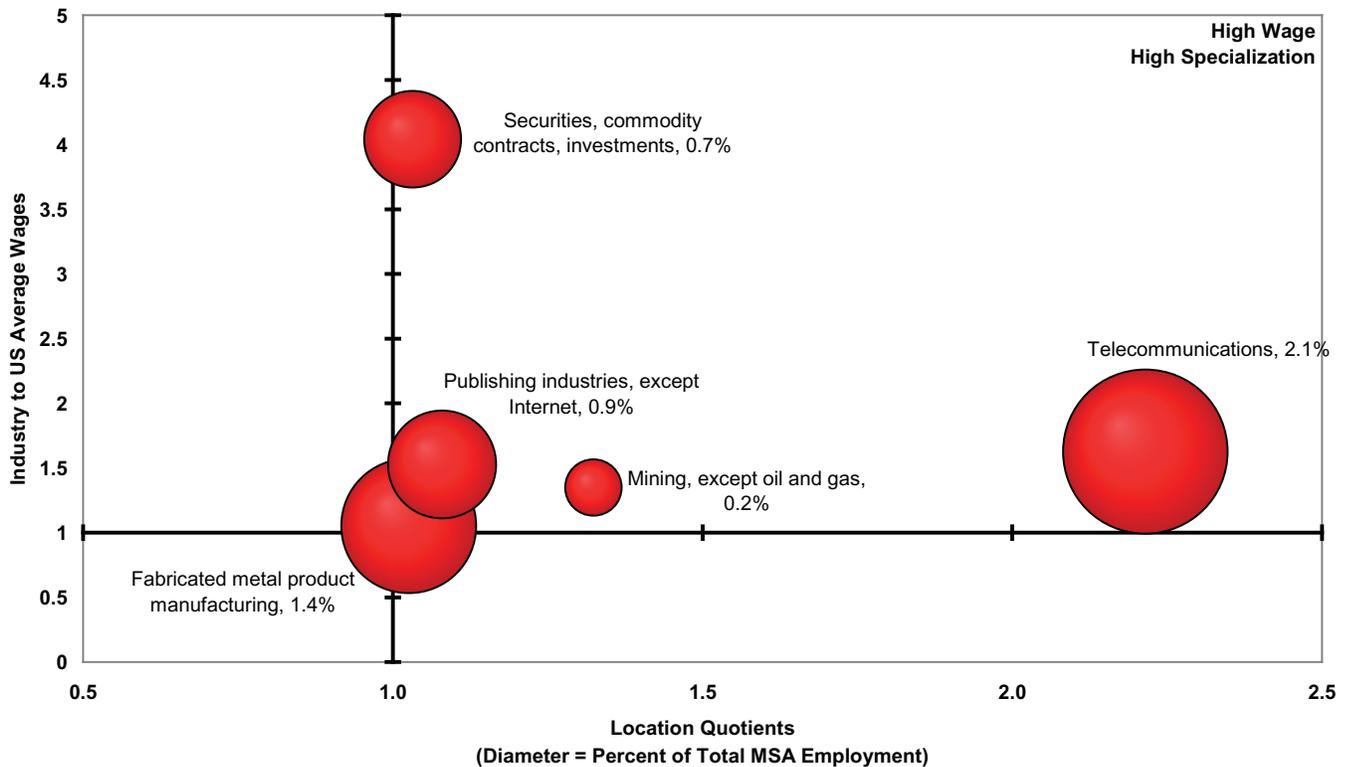
Title	MSA		MSA Avg Annual Wage		US		US Avg Annual Wage		AR		AR Avg Annual Wage		Employment LQ vs. Nation		Avg Annual Wage LQ vs. Nation		Employment LQ vs. State		Avg Annual Wage LQ vs. State	
	Emp#	Wage	Emp#	Wage	Emp#	Wage	Emp#	Wage	Emp#	Wage	Emp#	Wage	vs. Nation	vs. Nation	vs. State	vs. State	vs. Nation	vs. Nation	vs. State	vs. State
Total, all industries	248,797	\$32,928	108,490,066	\$39,134	942,044	\$29,802	8.813	0.589	0.973	1.021										
Goods-Producing	42,600	\$36,649	22,848,815	\$44,776	273,638	\$32,490	1.050	1.168	1.016											
Service-Providing	206,197	\$32,159	85,641,251	\$37,629	668,406	\$28,702	2.215	2.274	0.977											
NAICS 517 Telecommunications	5,216	\$52,337	1,026,957	\$63,635	8,684	\$49,561	1.026	0.747	1.051											
NAICS 332 Fabricated metal product manufacturing	3,502	\$36,408	1,488,713	\$41,189	17,740	\$34,800	1.080	1.312	0.695											
NAICS 511 Publishing industries, except Internet	2,247	\$34,924	907,542	\$59,764	6,487	\$29,177	1.032	2.208	0.741											
NAICS 523 Securities, commodity contracts, investments	1,811	\$98,607	765,202	\$158,145	3,105	\$84,373	1.324	1.150	1.090											
NAICS 212 Mining, except oil and gas	620	\$48,430	204,225	\$52,827	2,041	\$39,626	0.864	0.817	0.935											
NAICS 336 Transportation equipment manufacturing	3,494	\$44,887	1,763,438	\$57,082	16,199	\$33,146	0.871	1.323	0.865											
NAICS 531 Real estate	2,501	\$40,145	1,314,936	\$73,673	6,180	\$33,173	0.829	1.532	0.648											
NAICS 334 Computer and electronic product manufacturing	1,690	\$43,958	881,799	\$68,157	5,132	\$48,268	0.836	1.247	0.767											
NAICS 325 Chemical manufacturing	916	\$33,041	803,718	\$39,317	13,121	\$36,380	0.497	0.264	0.999											
NAICS 326 Plastics and rubber products manufacturing	747	\$32,505	653,623	\$44,087	6,499	\$28,165	0.498	0.435	0.876											
NAICS 339 Miscellaneous manufacturing	712	\$42,586	323,639	\$57,575	2,151	\$32,277	0.959	1.253	0.879											
NAICS 711 Performing arts and spectator sports	698	\$13,976	380,542	\$62,559	2,066	\$15,659	0.800	1.279	0.266											
NAICS 518 ISPs, search portals, and data processing	632	\$51,436	382,545	\$69,681	1,314	\$49,598	0.720	1.821	0.877											
NAICS 512 Motion picture and sound recording industries	481	\$22,830	380,300	\$50,606	1,220	\$14,847	0.552	1.493	0.536											
NAICS 331 Primary metal manufacturing	375	\$51,992	465,993	\$50,824	8,098	\$46,745	0.351	0.175	1.216											
NAICS 335 Electrical equipment and appliance mfg.	305	\$36,345	443,840	\$46,126	12,963	\$36,190	0.300	0.089	0.936											
NAICS 533 Lessors of nonfinancial intangible assets	51	\$33,993	26,043	\$76,915	91	\$55,093	0.854	2.122	0.525											
NAICS 561 Administrative and support services	19,667	\$17,406	7,503,531	\$26,455	48,819	\$17,682	1.143	1.525	0.782											
NAICS 441 Motor vehicle and parts dealers	5,406	\$37,035	1,901,282	\$38,697	17,745	\$31,809	1.240	1.154	1.137											
NAICS 493 Warehousing and storage	2,949	\$27,908	555,771	\$35,304	9,896	\$28,319	2.314	1.128	0.939											
NAICS 447 Gasoline stations	2,789	\$14,091	872,863	\$16,668	13,093	\$13,090	1.393	0.807	1.005											
NAICS 492 Couriers and messengers	1,641	\$36,388	557,491	\$37,117	3,257	\$34,746	1.284	1.908	1.165											
NAICS 532 Rental and leasing services	1,575	\$25,647	641,022	\$31,382	5,077	\$22,667	1.071	1.175	0.971											
NAICS 451 Sporting goods, hobby, book and music stores	1,497	\$15,417	646,085	\$17,846	4,259	\$13,974	1.010	1.331	1.027											
NAICS 442 Furniture and home furnishings stores	1,464	\$27,470	563,822	\$28,784	4,119	\$24,531	1.132	1.346	1.134											
NAICS 722 Food services and drinking places	19,939	\$11,328	8,829,636	\$13,099	70,770	\$10,285	0.985	1.067	1.028											
NAICS 238 Specialty trade contractors	9,814	\$31,081	4,402,873	\$37,641	29,887	\$28,901	0.972	1.243	0.981											
NAICS 623 Nursing and residential care facilities	5,607	\$19,969	2,810,169	\$23,234	25,670	\$18,059	0.870	0.827	1.021											
NAICS 813 Membership associations and organizations	2,632	\$28,234	1,297,153	\$28,199	6,289	\$21,687	0.885	1.585	1.190											
NAICS 812 Personal and laundry services	2,407	\$18,463	1,266,102	\$20,394	8,397	\$19,094	0.829	1.085	1.076											
NAICS 713 Amusements, gambling, and recreation	2,173	\$13,328	1,355,446	\$17,927	6,852	\$13,271	0.699	1.201	0.884											
NAICS 446 Health and personal care stores	1,685	\$25,400	940,725	\$28,912	6,041	\$26,206	0.781	1.056	1.044											
NAICS 311 Food manufacturing	1,519	\$39,150	1,490,443	\$34,758	51,711	\$26,819	0.444	0.111	1.339											
NAICS 321 Wood product manufacturing	902	\$27,535	547,973	\$32,965	13,890	\$30,278	0.718	0.246	0.993											
NAICS 454 Nonstore retailers	452	\$29,187	424,384	\$35,699	2,180	\$26,328	0.464	0.785	0.972											
NAICS 112 Animal production	306	\$28,491	208,871	\$25,492	3,841	\$29,943	0.639	0.302	1.328											
NAICS 111 Crop production	292	\$26,576	555,437	\$20,973	3,926	\$20,463	0.229	0.282	1.506											
NAICS 315 Apparel manufacturing	120	\$22,577	284,733	\$28,110	2,110	\$20,689	0.184	0.215	0.955											

Source: <http://ftp.bls.gov/pub/special.requests/cew/>

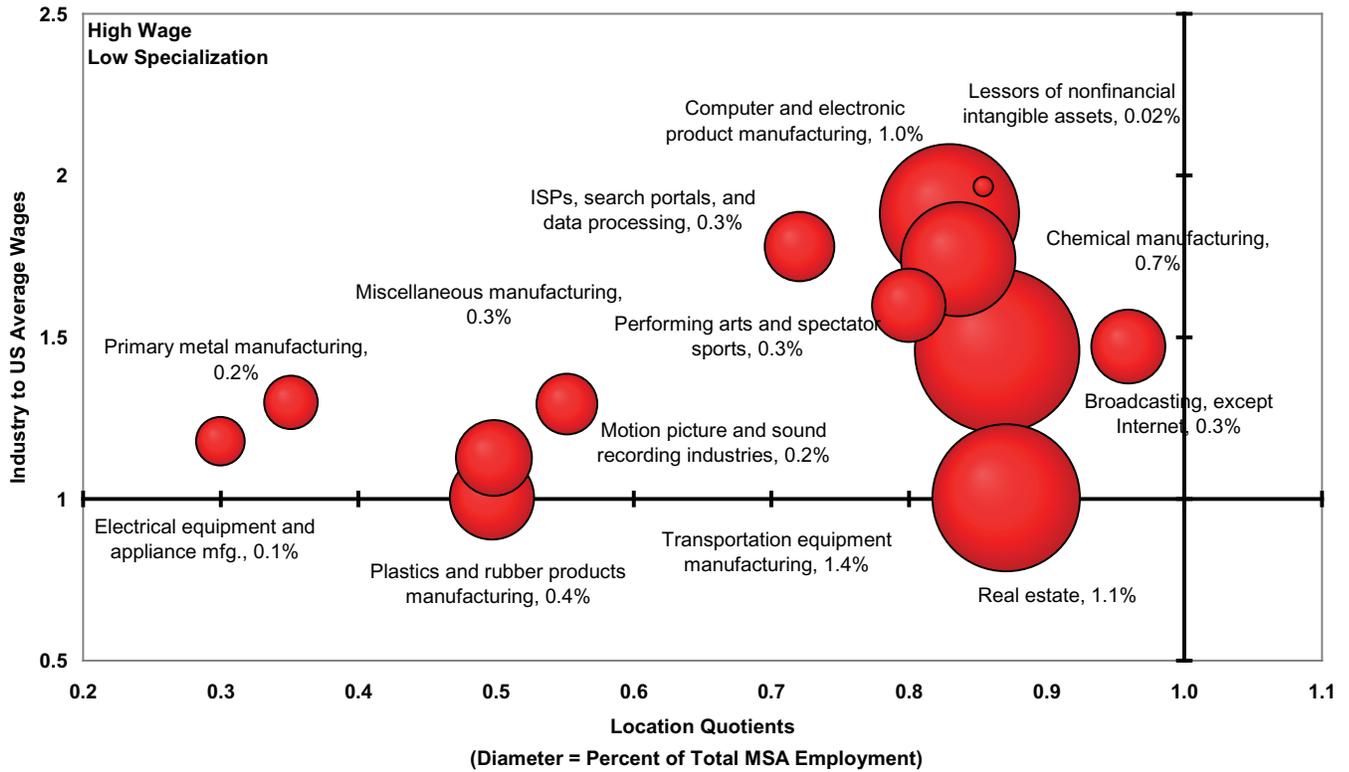
### Little Rock-North Little Rock MSA 2004 NAICS Three Digit



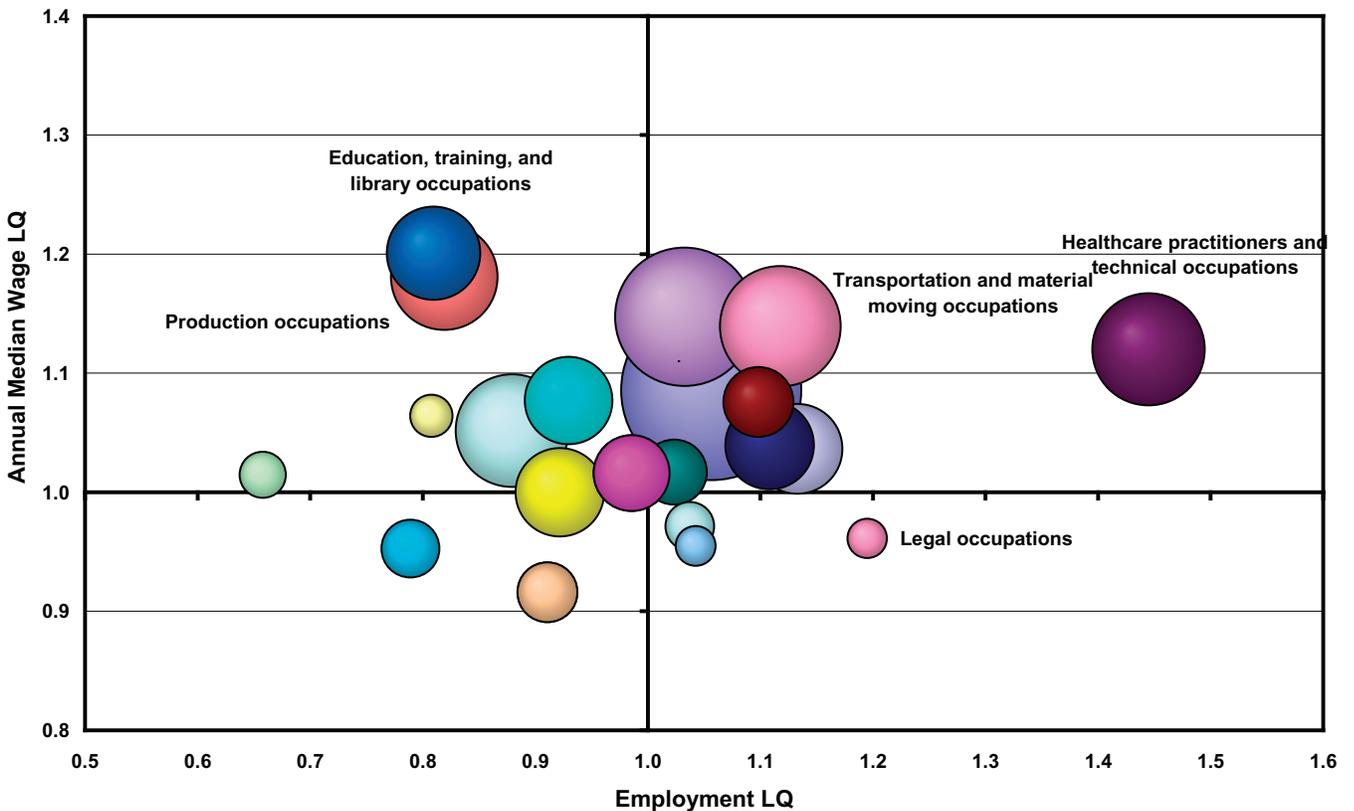
### Little Rock-North Little Rock MSA 2004 NAICS Three Digit (Detail)



### Little Rock-North Little Rock MSA 2004 NAICS Three Digit (Detail)



### Little Rock-North Little Rock MSA 2004 Occupation Wage and Employment LQs



**Little Rock-North Little Rock MSA, 2004**

Occupational Title	MSA EMP#	MSA EMP %	MSA Annual Median Wage	US Annual Median Wage	Ratio of MSA Occ Wage to MSA Median Wage	Ratio of US Occ Wage to US Median Wage	Ratio of MSA Occ Wage to US Median Wage	Median Wage LQ
Management occupations	13,660	4.4%	\$67,420	\$75,960	2.38	2.23	1.98	1.07
Business and financial operations occupations	14,370	4.6%	\$43,560	\$51,000	1.54	1.49	1.28	1.03
Computer and mathematical occupations	6,450	2.1%	\$47,890	\$63,440	1.69	1.86	1.40	0.91
Architecture and engineering occupations	3,790	1.2%	\$49,680	\$59,410	1.76	1.74	1.46	1.01
Life, physical, and social science occupations	2,880	0.9%	\$40,250	\$51,150	1.42	1.50	1.18	0.95
Community and social services occupations	4,210	1.4%	\$27,170	\$33,940	0.96	0.99	0.80	0.97
Legal occupations	2,810	0.9%	\$49,430	\$62,400	1.75	1.83	1.45	0.96
Education, training, and library occupations	15,580	5.0%	\$38,760	\$39,170	1.37	1.15	1.14	1.19
Arts, design, entertainment, sports, and media occupations	3,210	1.0%	\$31,920	\$36,400	1.13	1.07	0.94	1.06
Healthcare practitioners and technical occupations	22,570	7.3%	\$44,740	\$48,470	1.58	1.42	1.31	1.11
Healthcare support occupations	8,770	2.8%	\$19,460	\$21,950	0.69	0.64	0.57	1.07
Protective service occupations	7,560	2.4%	\$25,800	\$30,790	0.91	0.90	0.76	1.01
Food preparation and serving related occupations	22,590	7.3%	\$13,780	\$15,900	0.49	0.47	0.40	1.05
Building and grounds cleaning and maintenance occupations	10,290	3.3%	\$16,360	\$19,540	0.58	0.57	0.48	1.01
Personal care and service occupations	6,010	1.9%	\$14,350	\$18,280	0.51	0.54	0.42	0.95
Sales and related occupations	34,190	11.0%	\$20,670	\$21,860	0.73	0.64	0.61	1.14
Office and administrative support occupations	57,700	18.6%	\$24,120	\$26,960	0.85	0.79	0.71	1.08
Farming, fishing, and forestry occupations		0.0%		\$17,350	-	0.51	0.00	0.00
Construction and extraction occupations	14,030	4.5%	\$28,290	\$34,330	1.00	1.01	0.83	0.99
Installation, maintenance, and repair occupations	14,040	4.5%	\$30,430	\$35,520	1.08	1.04	0.89	1.03
Production occupations	20,160	6.5%	\$25,770	\$26,480	0.91	0.78	0.75	1.17
Transportation and material moving occupations	25,900	8.3%	\$22,760	\$24,240	0.80	0.71	0.67	1.13
All Occupations	310,770	100.0%	\$28,290	\$34,135	1.00	1.00	0.83	1.00

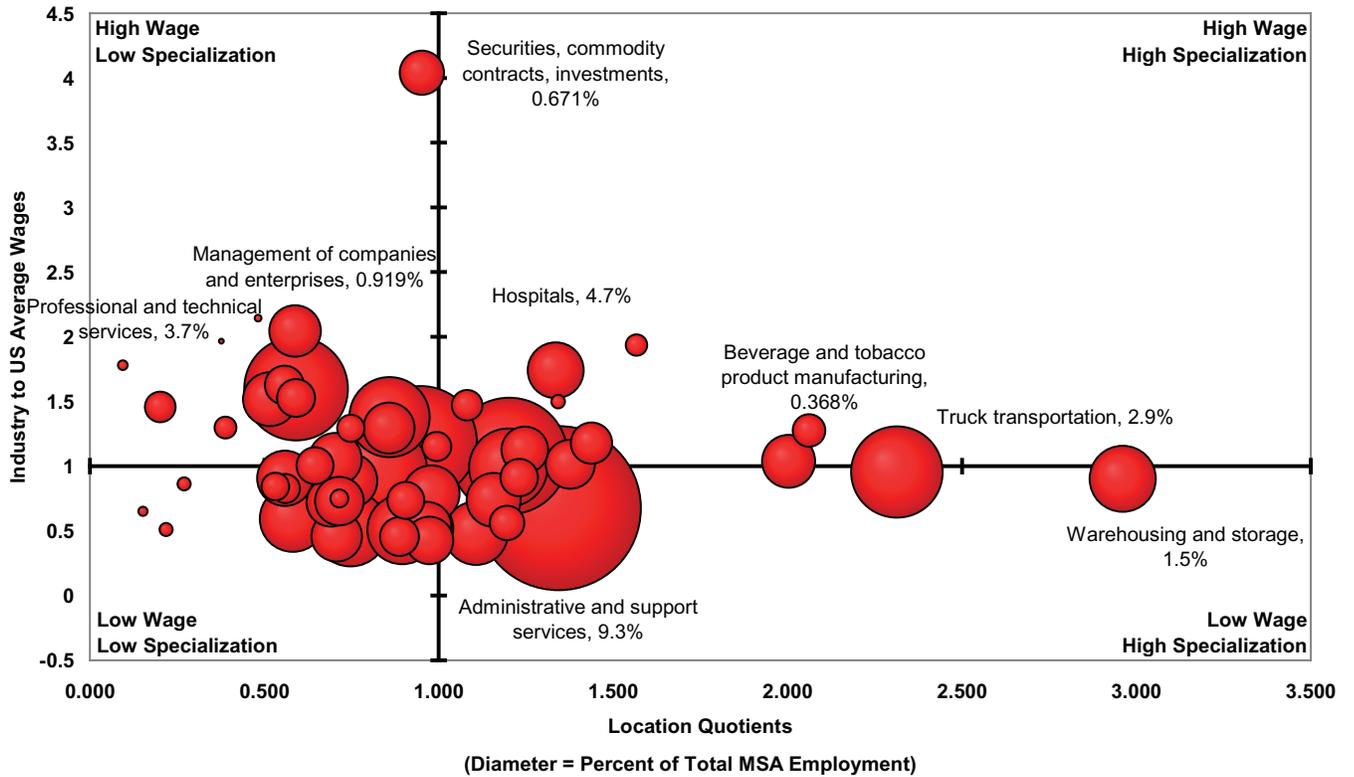
Source: Occupational Employment Statistics (OES) Survey, Bureau of Labor Statistics, Department of Labor. [Http://stat.bs.gov/oes/home.htm](http://stat.bs.gov/oes/home.htm)

**Memphis TN-AR-MS MSA, 2004**

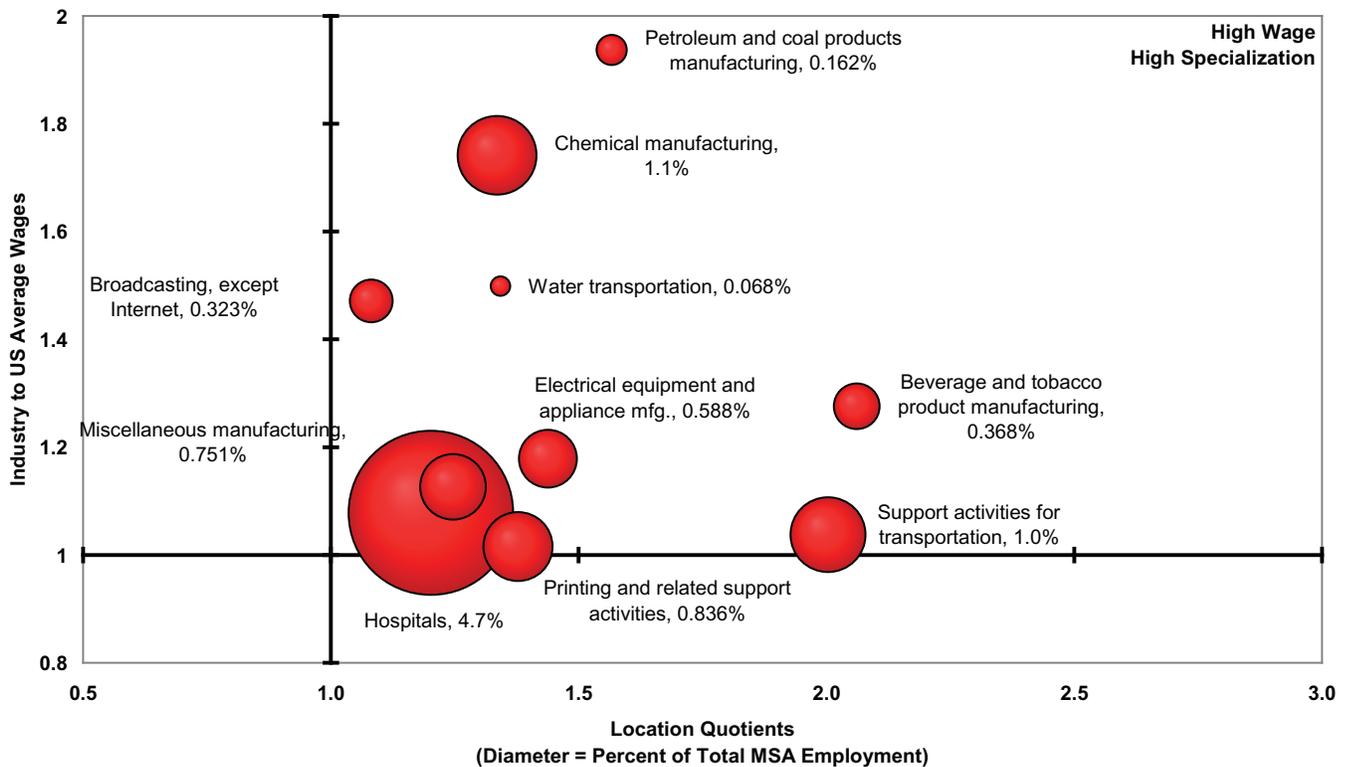
Title	MSA Emp#	MSA Avg Annual Wage	US Emp#	US Avg Annual Wage	AR Emp#	AR Avg Annual Wage	Employment LQ vs. Nation	Employment LQ vs. State	Avg Annual Wage LQ vs. Nation	Avg Annual Wage LQ vs. State
Total, all industries	508,715	\$38,005	108,490,066	\$39,134	942,044	\$29,802				
Goods-Producing	79,419	\$44,195	22,848,815	\$44,776	273,638	\$32,490	0.741	0.537	1.016	1.067
Service-Providing	429,296	\$36,860	85,641,251	\$37,629	668,406	\$28,702	1.069	1.189	1.009	1.007
NAICS 622 Hospitals	23,931	\$41,415	8,246,724	\$42,205	41,784	\$34,009	1.202	1.061	1.010	0.955
NAICS 325 Chemical manufacturing	5,521	\$57,041	881,799	\$68,157	5,132	\$48,268	1.335	1.992	0.862	0.927
NAICS 488 Support activities for transportation	4,984	\$36,829	530,614	\$40,605	4,815	\$36,032	2.003	1.917	0.934	0.802
NAICS 323 Printing and related support activities	4,253	\$42,077	658,480	\$39,751	4,775	\$32,932	1.377	1.649	1.090	1.002
NAICS 339 Miscellaneous manufacturing	3,820	\$59,598	653,623	\$44,087	6,499	\$28,165	1.246	1.088	1.392	1.659
NAICS 335 Electrical equipment and appliance mfg.	2,993	\$52,095	443,840	\$46,126	12,963	\$36,190	1.438	0.428	1.163	1.129
NAICS 312 Beverage and tobacco product manufacturing	1,872	\$48,515	193,682	\$49,929	1,252	\$35,976	2.061	2.769	1.001	1.057
NAICS 515 Broadcasting, except Internet	1,641	\$47,661	323,639	\$57,575	2,151	\$32,277	1.081	1.413	0.852	1.158
NAICS 324 Petroleum and coal products manufacturing	825	\$54,207	112,302	\$75,794	949	\$48,622	1.567	1.610	0.736	0.874
NAICS 483 Water transportation	346	\$45,667	54,969	\$58,660	114	\$40,519	1.342	5.620	0.802	0.884
NAICS 621 Ambulatory health care services	21,964	\$51,409	4,937,542	\$46,455	39,600	\$46,248	0.949	1.027	1.140	0.872
NAICS 541 Professional and technical services	18,762	\$45,875	6,768,868	\$62,547	33,697	\$44,010	0.591	1.031	0.755	0.817
NAICS 522 Credit intermediation and related activities	11,328	\$72,053	2,813,110	\$53,965	20,883	\$34,541	0.859	1.005	1.375	1.636
NAICS 524 Insurance carriers and related activities	5,149	\$50,853	2,127,872	\$59,371	11,457	\$42,814	0.516	0.832	0.882	0.931
NAICS 332 Fabricated metal product manufacturing	4,908	\$39,516	1,488,713	\$41,189	17,740	\$34,800	0.703	0.512	0.988	0.890
NAICS 551 Management of companies and enterprises	4,676	\$75,177	1,696,537	\$80,054	22,791	\$65,066	0.388	0.380	0.967	0.906
NAICS 333 Machinery manufacturing	4,571	\$41,357	1,136,771	\$50,679	13,977	\$33,649	0.858	0.606	0.840	0.964
NAICS 523 Securities, commodity contracts, investments	3,414	\$209,105	765,202	\$158,145	3,105	\$84,373	0.951	2.036	1.362	1.943
NAICS 517 Telecommunications	2,685	\$52,012	1,026,957	\$63,635	8,684	\$49,561	0.558	0.573	0.842	0.823
NAICS 511 Publishing industries, except Internet	2,516	\$39,201	907,542	\$59,764	6,487	\$29,177	0.591	0.718	0.675	1.054
NAICS 326 Plastics and rubber products manufacturing	2,431	\$40,058	803,718	\$39,317	13,121	\$36,380	0.645	0.343	1.049	0.863
NAICS 336 Transportation equipment manufacturing	1,670	\$35,320	1,763,438	\$57,082	16,199	\$33,146	0.202	0.191	0.637	0.836
NAICS 562 Waste management and remediation services	1,333	\$40,011	325,840	\$45,081	2,777	\$39,664	0.994	1.013	0.914	0.791
NAICS 512 Motion picture and sound recording industries	1,333	\$11,203	380,300	\$50,606	1,220	\$14,847	0.748	2.023	0.228	0.592
NAICS 331 Primary metal manufacturing	849	\$37,675	465,993	\$50,824	8,098	\$46,745	0.389	0.194	0.763	0.632
NAICS 418 ISPs, search portals, and data processing	169	\$47,468	382,545	\$69,681	1,314	\$28,548	0.094	0.238	0.701	0.750
NAICS 486 Pipeline transportation	85	\$65,638	37,581	\$83,932	984	\$51,119	0.482	0.160	0.805	1.007
NAICS 533 Lessors of nonfinancial intangible assets	46	\$62,822	26,043	\$76,915	91	\$55,093	0.377	0.936	0.841	0.894
NAICS 441 Motor vehicle and parts dealers	10,692	\$44,016	1,901,282	\$38,697	17,745	\$31,809	1.199	1.116	1.171	1.085
NAICS 238 Specialty trade contractors	17,043	\$34,441	4,402,873	\$37,641	29,887	\$28,901	0.826	1.056	0.942	0.934
NAICS 484 Truck transportation	14,652	\$41,693	1,350,775	\$37,415	33,442	\$34,954	0.213	0.811	1.147	0.935
NAICS 454 Nonstore retailers	5,450	\$28,512	424,384	\$35,699	33,442	\$26,328	1.231	2.080	0.822	0.849
NAICS 611 Educational services	2,449	\$30,080	2,079,232	\$35,444	7,989	\$25,191	0.559	1.263	0.874	0.936
NAICS 493 Warehousing and storage	7,716	\$33,454	555,771	\$35,304	9,896	\$28,319	2.961	1.444	0.976	0.926
NAICS 311 Food manufacturing	5,212	\$46,810	1,490,443	\$34,758	51,711	\$26,819	0.746	0.187	1.387	1.369
NAICS 313 Textile mills	301	\$40,391	237,774	\$33,789	364	\$41,700	0.270	1.531	1.231	0.760
NAICS 321 Wood product manufacturing	1,366	\$27,083	547,973	\$32,965	13,890	\$30,278	0.532	0.182	0.846	0.701
NAICS 337 Furniture and related product manufacturing	1,493	\$31,047	568,548	\$32,383	7,917	\$27,829	0.560	0.349	0.987	0.875
NAICS 811 Repair and maintenance	5,609	\$30,036	1,221,991	\$30,870	9,616	\$26,117	0.979	1.080	1.002	0.902
NAICS 314 Textile product mills	591	\$23,972	176,243	\$29,367	1,594	\$34,556	0.715	0.687	0.841	0.544
NAICS 446 Health and personal care stores	5,105	\$33,377	940,725	\$28,912	6,041	\$26,206	1.157	1.565	1.189	0.999
NAICS 442 Furniture and home furnishings stores	2,394	\$26,182	563,822	\$28,784	4,119	\$24,531	0.906	1.076	0.937	0.837
NAICS 444 Building material and garden supply stores	4,136	\$30,826	1,234,084	\$28,599	9,871	\$24,365	0.715	0.776	1.110	0.992
NAICS 813 Membership associations and organizations	4,202	\$28,554	1,297,153	\$28,199	6,289	\$21,682	0.691	1.237	1.043	1.032
NAICS 561 Administrative and support services	47,275	\$27,029	7,503,531	\$26,455	48,819	\$17,682	1.344	1.793	1.052	1.199
NAICS 112 Animal production	149	\$26,107	208,871	\$25,492	3,841	\$29,943	0.152	0.072	1.055	0.684
NAICS 623 Nursing and residential care facilities	7,666	\$21,805	2,810,169	\$23,234	25,670	\$18,059	0.582	0.553	0.966	0.947
NAICS 485 Transit and ground passenger transportation	2,121	\$25,884	378,352	\$21,984	931	\$15,759	1.196	4.219	1.212	1.288
NAICS 453 Miscellaneous store retailers	4,160	\$20,342	918,450	\$21,052	7,195	\$16,917	0.966	1.071	0.995	0.943
NAICS 445 Personal and laundry services	5,701	\$19,271	1,266,102	\$20,144	19,493	\$15,161	0.960	1.257	0.973	0.791
NAICS 445 Food and beverage stores	9,874	\$19,446	2,818,261	\$20,144	19,493	\$15,161	0.960	1.257	0.973	0.791
NAICS 624 Social assistance	8,441	\$17,573	2,011,296	\$20,029	21,552	\$15,811	0.895	0.725	0.903	0.872
NAICS 115 Agriculture and forestry support activities	317	\$30,995	309,217	\$20,014	3,475	\$25,658	0.219	0.169	1.595	0.947
NAICS 448 Clothing and clothing accessories stores	7,099	\$17,314	1,367,631	\$18,885	8,157	\$14,062	1.107	1.612	0.944	0.966
NAICS 713 Amusements, gambling, and recreation	4,498	\$20,280	1,355,446	\$17,927	6,852	\$13,271	0.708	1.216	1.165	1.198
NAICS 451 Sporting goods, hobby, book and music stores	2,688	\$19,159	646,085	\$17,846	4,259	\$13,974	0.887	1.169	1.105	1.075
NAICS 447 Gasoline stations	3,983	\$16,369	872,863	\$16,668	13,093	\$13,090	0.973	0.563	1.011	0.981

Source: <http://ftp.bls.gov/pub/special.requests/cew/>

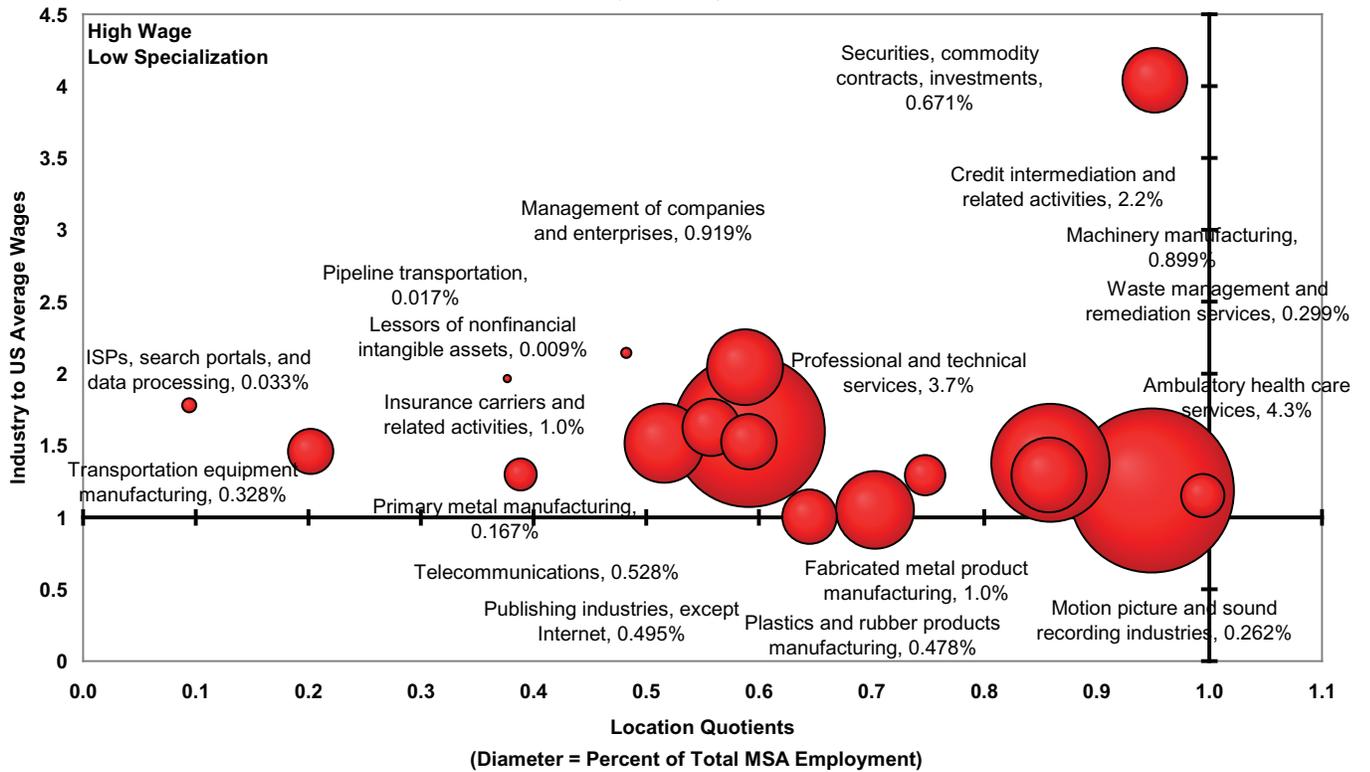
### Memphis, TN-AR-MS MSA 2004 NAICS Three Digit (Detail)



### Memphis, TN-AR-MS MSA 2004 NAICS Three Digit (Detail)



## Memphis, TN-AR-MS MSA 2004 NAICS Three Digit (Detail)

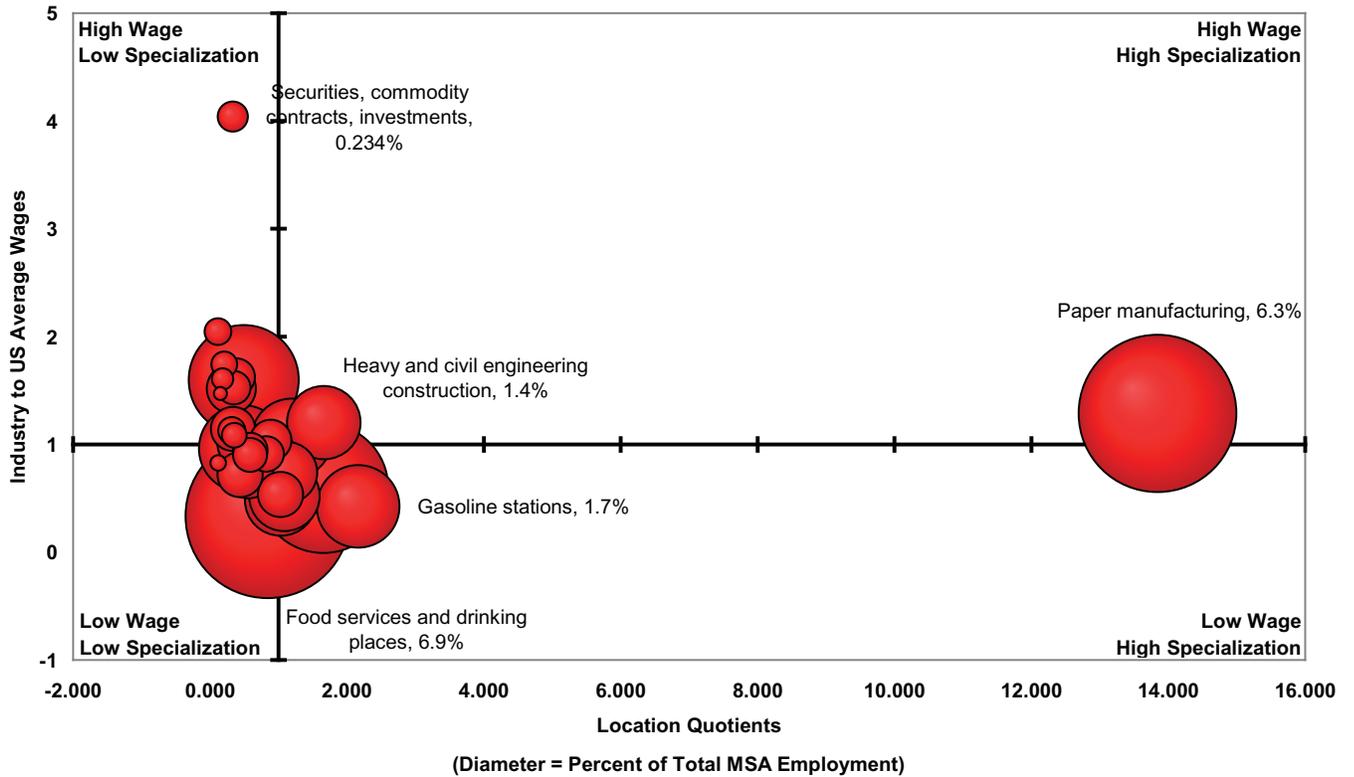


**Pine Bluff MSA, 2004**

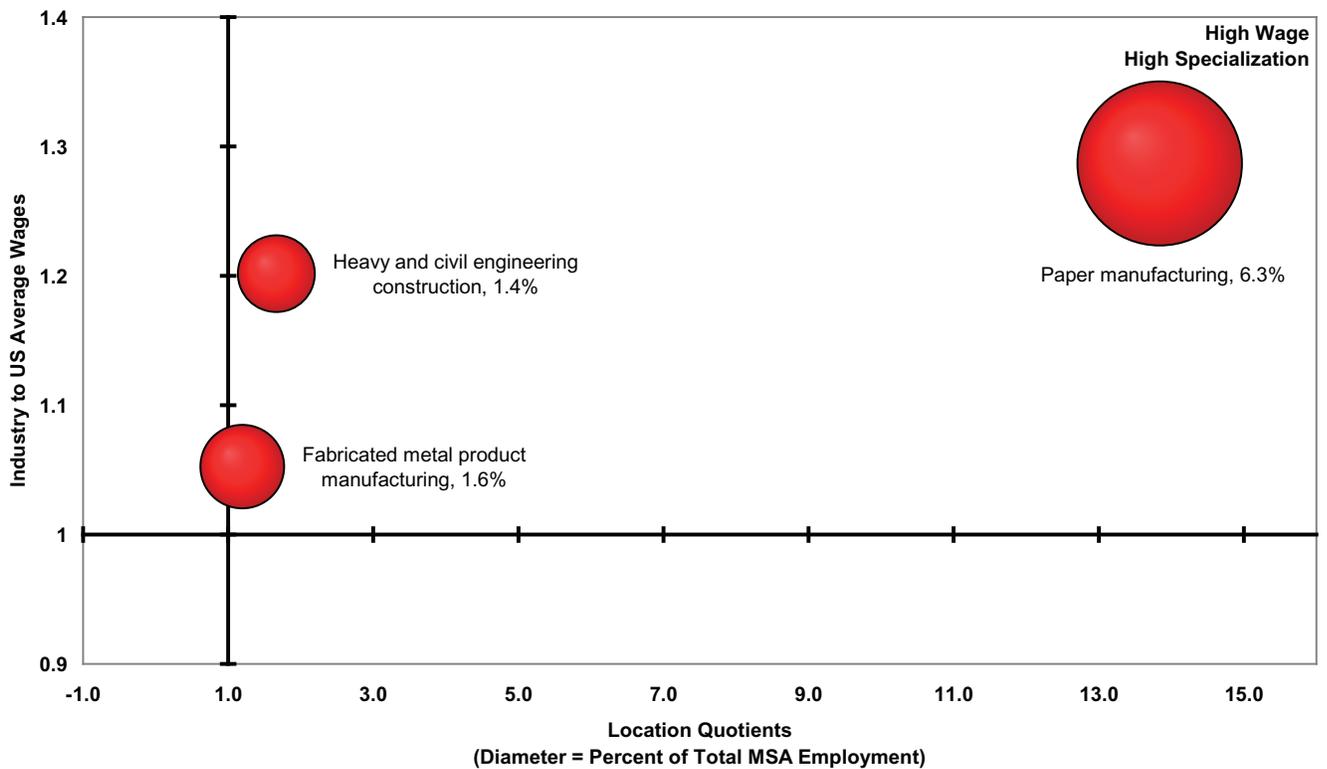
Title	MSA		MSA Avg Annual Wage		US		US Avg Annual Wage		AR		AR Avg Annual Wage		Employment LQ vs. Nation		Avg Annual Wage LQ vs. Nation	
	Emp#	Wage	Emp#	Wage	Emp#	Wage	Emp#	Wage	Emp#	Wage	vs. Nation	vs. State	vs. Nation	vs. State	vs. Nation	vs. State
Total, all industries	29,077	\$28,530	108,490,066	\$39,134	942,044	\$29,802	1,513	1,097	1,084	1,138	1.084	1.138				
Goods-Producing	9,265	\$35,399	22,848,815	\$44,776	273,638	\$32,490	863	0.960	0.923	0.921	0.923	0.921				
Service-Providing	19,812	\$25,318	85,641,251	\$37,629	668,406	\$28,702	1,384	4.849	1.531	1.214	1.531	1.214				
NAICS 322 Paper manufacturing	1,830	\$56,218	493,341	\$50,357	12,226	\$48,360	1,193	0.869	1.293	1.165	1.293	1.165				
NAICS 332 Fabricated metal product manufacturing	476	\$38,814	1,488,713	\$41,189	17,740	\$34,800	1,663	1.336	0.904	0.990	0.904	0.990				
NAICS 237 Heavy and civil engineering construction	399	\$30,987	894,976	\$47,027	9,679	\$32,679	0.492	0.859	0.833	0.902	0.833	0.902				
NAICS 541 Professional and technical services	893	\$37,998	6,768,868	\$62,547	33,697	\$44,010	1,457	0.503	0.878	0.927	0.503	0.927				
NAICS 524 Insurance carriers and related activities	178	\$38,000	2,127,872	\$59,371	11,457	\$42,814	0.460	0.699	0.775	0.907	0.460	0.907				
NAICS 531 Real estate	174	\$22,188	1,410,422	\$39,263	8,061	\$25,550	1,766	0.402	0.913	0.930	0.402	0.930				
NAICS 236 Construction of buildings	146	\$29,796	1,618,549	\$44,757	11,766	\$33,464	0.886	0.848	0.888	0.762	0.848	0.888				
NAICS 488 Support activities for transportation	126	\$26,280	530,614	\$40,605	4,815	\$36,032	0.381	0.392	0.867	0.848	0.381	0.848				
NAICS 517 Telecommunications	105	\$40,238	1,026,957	\$63,635	8,684	\$49,561	6.487	0.420	0.569	0.887	0.420	0.887				
NAICS 511 Publishing industries, except Internet	84	\$24,779	907,542	\$59,764	6,487	\$29,177	3.105	0.710	0.389	0.556	0.710	0.389				
NAICS 523 Securities, commodity contracts, investments	68	\$44,877	765,202	\$158,145	3,105	\$84,373	0.320	0.279	0.908	1.082	0.320	1.082				
NAICS 339 Miscellaneous manufacturing	56	\$29,170	653,623	\$44,087	6,499	\$28,165	0.117	0.075	0.856	0.802	0.117	0.802				
NAICS 551 Management of companies and enterprises	53	\$49,984	1,696,537	\$80,054	22,791	\$65,066	0.207	0.309	0.722	0.776	0.207	0.776				
NAICS 325 Chemical manufacturing	49	\$35,872	881,799	\$68,157	5,132	\$48,268	0.352	0.343	1.071	1.005	0.352	1.005				
NAICS 327 Nonmetallic mineral product manufacturing	47	\$33,123	498,486	\$42,419	4,445	\$34,439	0.181	0.133	1.191	0.837	0.181	0.837				
NAICS 425 Electronic markets and agents and brokers	34	\$54,560	700,390	\$62,863	8,292	\$68,073	0.150	0.196	0.487	0.662	0.150	0.662				
NAICS 515 Broadcasting, except Internet	13	\$20,451	323,639	\$57,575	2,151	\$32,277	29.887	0.606	0.952	0.944	29.887	0.606				
NAICS 238 Specialty trade contractors	559	\$26,123	4,402,873	\$37,641	29,887	\$28,901	0.589	0.875	1.233	1.003	0.589	1.003				
NAICS 492 Couriers and messengers	88	\$33,374	557,491	\$37,117	3,257	\$34,746	0.818	1.382	0.786	0.811	0.818	0.811				
NAICS 454 Nonstore retailers	93	\$20,448	424,384	\$35,699	2,180	\$26,328	0.584	0.285	0.854	0.811	0.584	0.811				
NAICS 493 Warehousing and storage	87	\$21,975	555,771	\$35,304	9,896	\$28,319	0.118	0.074	0.721	0.639	0.118	0.639				
NAICS 337 Furniture and related product manufacturing	18	\$17,020	568,548	\$32,383	7,917	\$27,829	1.115	1.507	0.983	0.826	1.115	0.826				
NAICS 446 Health and personal care stores	281	\$20,714	940,725	\$28,912	6,041	\$26,206	0.559	0.607	1.097	0.981	0.559	0.981				
NAICS 444 Building material and garden supply stores	185	\$22,876	1,234,084	\$28,599	9,871	\$24,365	0.440	0.788	0.728	0.721	0.440	0.721				
NAICS 813 Membership associations and organizations	153	\$14,963	1,297,153	\$28,199	6,289	\$21,687	1.656	1.574	1.067	1.045	1.656	1.045				
NAICS 623 Nursing and residential care facilities	1,247	\$18,066	2,810,169	\$23,234	25,670	\$18,059	1.028	1.263	1.616	1.261	1.028	1.261				
NAICS 111 Crop production	153	\$24,710	555,437	\$20,973	3,926	\$20,463	1.087	1.424	1.562	1.271	1.087	1.271				
NAICS 812 Personal and laundry services	369	\$23,227	1,266,102	\$20,394	8,397	\$19,094	1.031	1.501	1.256	1.284	1.031	1.284				
NAICS 448 Clothing and clothing accessories stores	378	\$17,291	1,367,631	\$18,885	8,157	\$14,062	2.163	1.252	0.940	0.912	2.163	0.912				
NAICS 447 Gasoline stations	506	\$11,423	872,863	\$16,668	13,093	\$13,090	0.843	0.913	0.988	0.958	0.843	0.958				
NAICS 722 Food services and drinking places	1,995	\$9,437	8,829,636	\$13,099	70,770	\$10,285										

Source: <http://ftp.bls.gov/pub/special.requests/cew/>

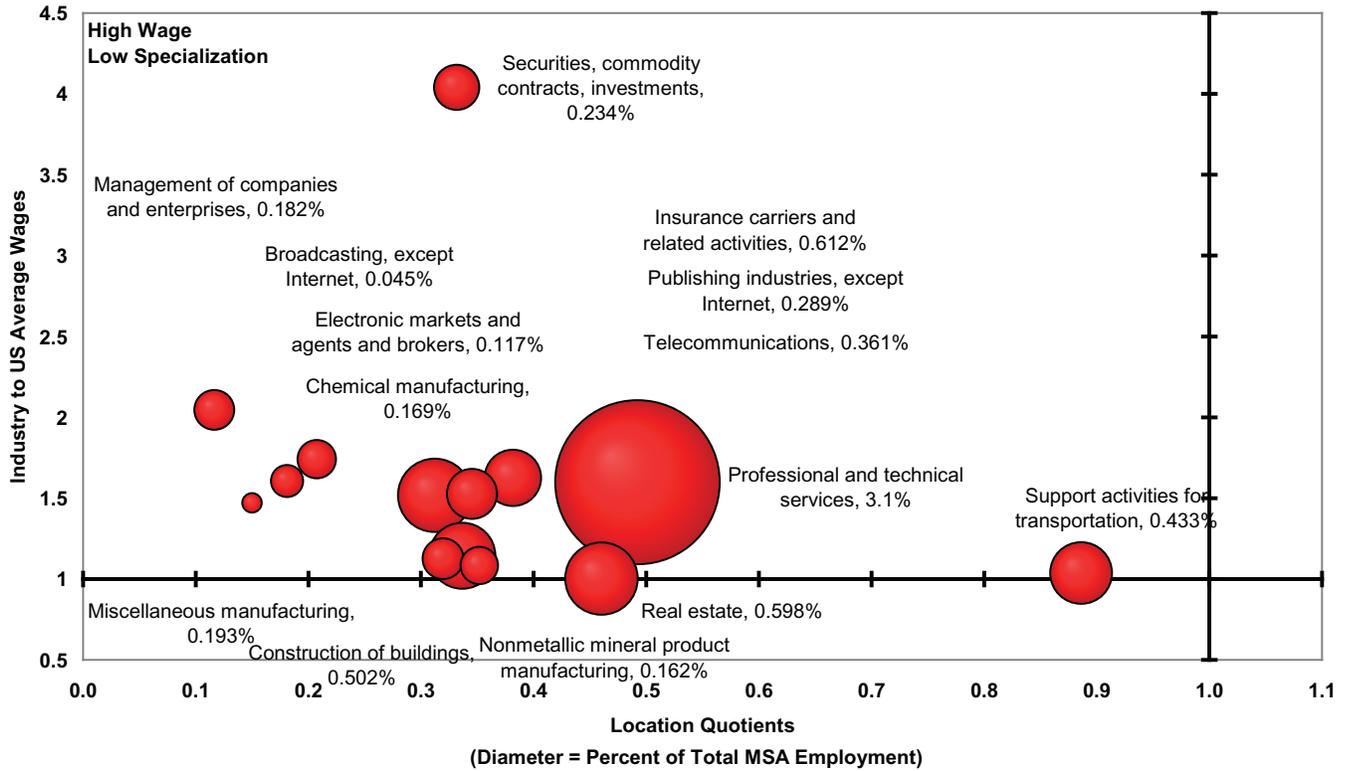
### Pine Bluff MSA 2004 NAICS Three Digit



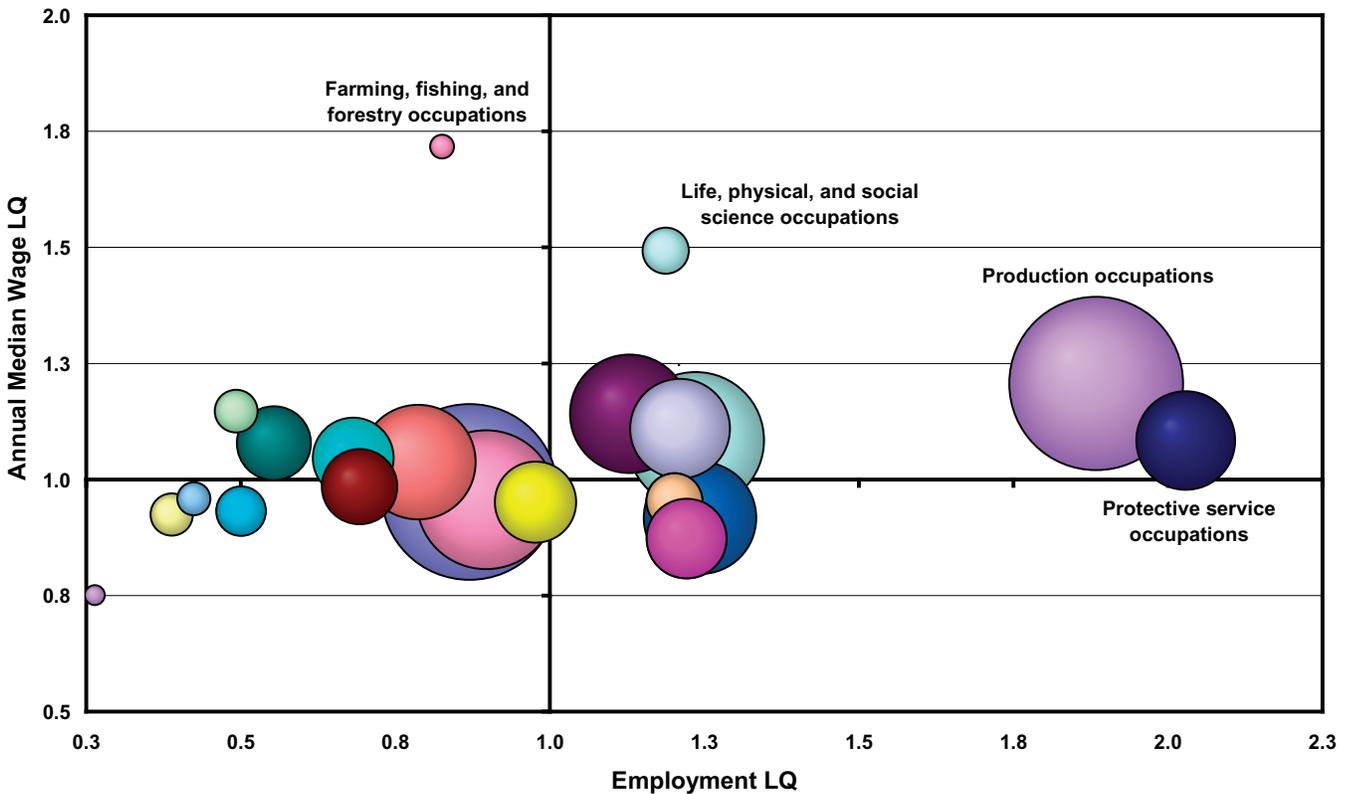
### Pine Bluff MSA 2004 NAICS Three Digit (Detail)



### Pine Bluff MSA 2004 NAICS Three Digit (Detail)



### Pine Bluff MSA 2004 Occupation Wage and Employment LQs



**Pine Bluff MSA, 2004**

Occupational Title	MSA EMP#	MSA EMP %	MSA Annual Median Wage	US Annual Median Wage	Ratio of MSA Occ Wage to MSA Median Wage	Ratio of US Occ Wage to US Median Wage	Ratio of MSA Occ Wage to US Median Wage	Median Wage LQ
Management occupations	1,130	3.2%	\$64,870	\$75,960	2.33	2.23	1.90	1.05
Business and financial operations occupations	990	2.8%	\$40,980	\$51,000	1.47	1.49	1.20	0.98
Computer and mathematical occupations	310	0.9%	\$47,850	\$63,440	1.72	1.86	1.40	0.92
Architecture and engineering occupations	320	0.9%	\$55,630	\$59,410	2.00	1.74	1.63	1.15
Life, physical, and social science occupations	370	1.1%	\$62,320	\$51,150	2.24	1.50	1.83	1.49
Community and social services occupations	550	1.6%	\$26,400	\$33,940	0.95	0.99	0.77	0.95
Legal occupations	70	0.2%	\$38,240	\$62,400	1.37	1.83	1.12	0.75
Education, training, and library occupations	2,450	7.0%	\$36,490	\$39,170	1.31	1.15	1.07	1.14
Arts, design, entertainment, sports, and media occupations	190	0.5%	\$28,470	\$36,400	1.02	1.07	0.83	0.96
Healthcare practitioners and technical occupations	2,190	6.2%	\$36,280	\$48,470	1.30	1.42	1.06	0.92
Healthcare support occupations	1,100	3.1%	\$15,630	\$21,950	0.56	0.64	0.46	0.87
Protective service occupations	1,690	4.8%	\$27,240	\$30,790	0.98	0.90	0.80	1.08
Food preparation and serving related occupations	2,280	6.5%	\$13,460	\$15,900	0.48	0.47	0.39	1.04
Building and grounds cleaning and maintenance occupations	1,150	3.3%	\$15,170	\$19,540	0.54	0.57	0.44	0.95
Personal care and service occupations	430	1.2%	\$13,900	\$18,280	0.50	0.54	0.41	0.93
Sales and related occupations	3,350	9.5%	\$17,060	\$21,860	0.61	0.64	0.50	0.96
Office and administrative support occupations	5,360	15.2%	\$21,410	\$26,960	0.77	0.79	0.63	0.97
Farming, fishing, and forestry occupations	100	0.3%	\$24,310	\$17,350	0.87	0.51	0.71	1.72
Construction and extraction occupations	950	2.7%	\$30,210	\$34,330	1.08	1.01	0.89	1.08
Installation, maintenance, and repair occupations	1,730	4.9%	\$32,170	\$35,520	1.15	1.04	0.94	1.11
Production occupations	5,230	14.9%	\$26,080	\$26,480	0.94	0.78	0.76	1.21
Transportation and material moving occupations	3,230	9.2%	\$21,450	\$24,240	0.77	0.71	0.63	1.08
All Occupations	35,170	100.0%	\$27,855	\$34,135	1.00	1.00	0.82	1.00

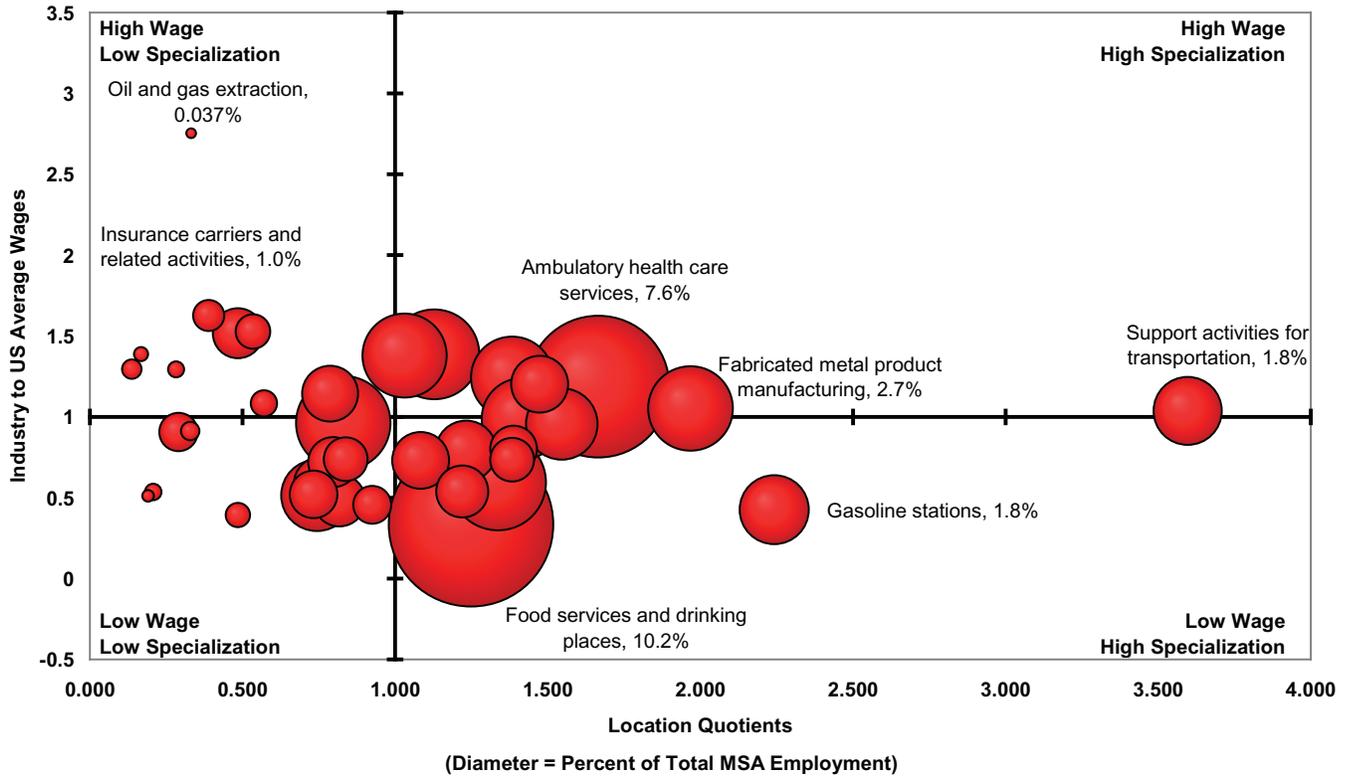
Source: Occupational Employment Statistics (OES) Survey, Bureau of Labor Statistics, Department of Labor. [Http://stat.bs.gov/oes/home.htm](http://stat.bs.gov/oes/home.htm)

**Texarkana AR-TX MSA, 2004**

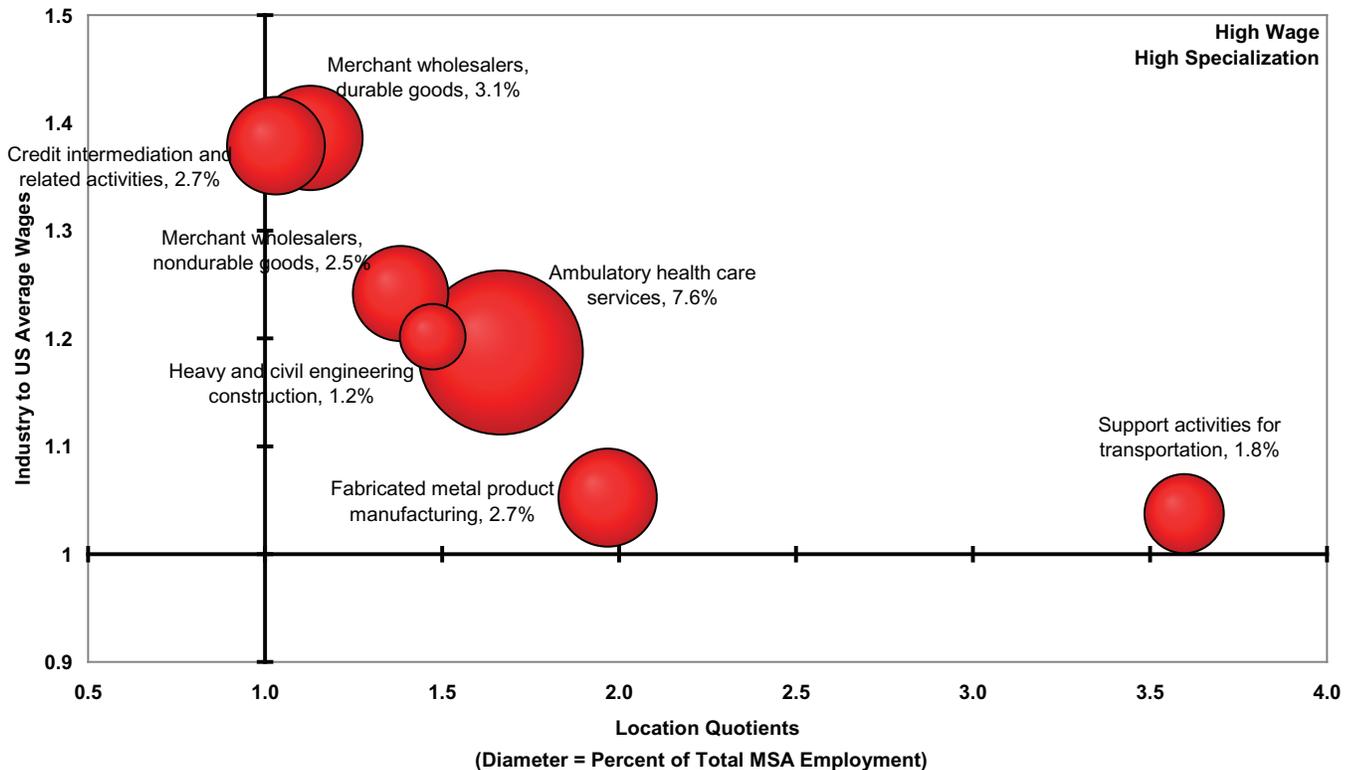
Title	MSA		MSA Avg Annual Wage		US		US Avg Annual Wage		AR		AR Avg Annual Wage		Employment LQ vs. State		Avg Annual Wage LQ vs. State	
	Emp#	Wage	Emp#	Wage	Emp#	Wage	Emp#	Wage	Emp#	Wage	vs. Nation	vs. State	vs. Nation	vs. State	vs. Nation	vs. State
Total, all industries	40,477	\$28,604	108,490,066	\$39,134	942,044	\$29,802	0.940	0.682	1.218	1.278						
Goods-Producing	8,017	\$39,865	22,848,815	\$44,776	273,638	\$32,490	1.016	1.130	0.939	0.937						
Service-Providing	32,460	\$25,823	85,641,251	\$37,629	668,406	\$28,702	1.665	1.803	1.243	0.951						
NAICS 621 Ambulatory health care services	3,068	\$42,222	4,937,542	\$46,455	39,600	\$46,248	1.128	1.363	0.949	0.976						
NAICS 423 Merchant wholesalers, durable goods	1,238	\$37,613	2,942,167	\$54,239	21,133	\$40,169	1.968	1.434	1.296	1.168						
NAICS 332 Fabricated metal product manufacturing	1,093	\$39,005	1,488,713	\$41,189	17,740	\$34,800	1.031	1.206	0.933	1.110						
NAICS 522 Credit intermediation and related activities	1,082	\$36,790	2,813,110	\$33,965	20,883	\$34,541	1.383	1.455	1.089	1.129						
NAICS 424 Merchant wholesalers, nondurable goods	1,032	\$38,684	1,999,979	\$48,599	16,512	\$35,704	3.597	3.441	1.362	1.169						
NAICS 488 Support activities for transportation	712	\$40,435	530,614	\$40,605	4,815	\$36,032	1.473	1.183	0.826	0.905						
NAICS 237 Heavy and civil engineering construction	492	\$28,384	894,976	\$47,027	9,679	\$32,679	1.787	0.940	0.866	0.882						
NAICS 236 Construction of buildings	475	\$28,336	1,618,549	\$44,757	11,766	\$33,464	0.485	0.782	1.053	1.112						
NAICS 524 Insurance carriers and related activities	385	\$45,694	2,127,872	\$59,371	11,457	\$42,814	6.487	6.649	0.542	0.845						
NAICS 511 Publishing industries, except Internet	181	\$23,668	907,542	\$59,764	6,487	\$29,177	8.684	8.561	1.023	1.000						
NAICS 517 Telecommunications	149	\$47,572	1,026,957	\$63,635	8,684	\$49,561	0.570	0.555	0.882	0.828						
NAICS 327 Nonmetallic mineral product manufacturing	106	\$27,361	498,486	\$42,419	4,445	\$34,439	0.137	0.097	0.756	0.867						
NAICS 333 Machinery manufacturing	58	\$28,000	1,136,771	\$50,679	13,977	\$33,649	1.220	0.763	0.437	1.135						
NAICS 512 Motion picture and sound recording industries	40	\$16,180	380,300	\$50,606	1,220	\$14,847	0.167	0.679	0.745	0.629						
NAICS 481 Air transportation	32	\$29,571	513,180	\$54,304	1,097	\$48,978	0.331	0.938	1.078	1.766						
NAICS 211 Oil and gas extraction	15	\$84,921	121,346	\$107,803	372	\$50,114	1.248	1.352	1.155	1.120						
NAICS 722 Food services and drinking places	4,112	\$11,056	8,829,636	\$13,099	70,770	\$10,285	1.337	1.271	1.012	0.992						
NAICS 623 Nursing and residential care facilities	1,402	\$17,194	2,810,169	\$23,234	25,670	\$18,059	0.830	1.062	0.961	0.953						
NAICS 238 Specialty trade contractors	1,364	\$26,428	4,402,873	\$37,641	29,887	\$28,901	1.417	1.318	1.247	1.155						
NAICS 441 Motor vehicle and parts dealers	1,005	\$35,259	1,901,282	\$38,697	17,745	\$31,809	1.744	0.934	1.201	1.215						
NAICS 445 Food and beverage stores	782	\$17,680	2,818,261	\$20,144	19,493	\$15,161	1.546	0.542	1.168	0.952						
NAICS 484 Truck transportation	779	\$31,931	1,350,775	\$37,415	33,442	\$34,954	2.242	1.298	1.312	1.272						
NAICS 447 Gasoline stations	730	\$15,980	872,863	\$16,668	13,093	\$13,090	1.233	1.360	1.009	0.908						
NAICS 811 Repair and maintenance	562	\$22,770	1,221,991	\$30,870	9,616	\$26,117	0.761	1.075	0.603	0.787						
NAICS 721 Accommodation	507	\$9,990	1,785,041	\$22,660	10,980	\$13,220	1.084	1.177	1.153	1.031						
NAICS 444 Building material and garden supply stores	499	\$24,100	1,234,084	\$28,599	9,871	\$24,365	1.220	1.352	1.289	1.222						
NAICS 453 Miscellaneous store retailers	418	\$19,836	918,450	\$21,052	7,195	\$16,917	0.817	1.190	1.122	1.148						
NAICS 448 Clothing and clothing accessories stores	417	\$15,490	1,367,631	\$18,885	8,157	\$14,062	0.798	1.428	0.519	0.514						
NAICS 813 Membership associations and organizations	386	\$10,696	1,297,153	\$28,199	6,289	\$21,687	0.732	0.959	1.091	0.887						
NAICS 812 Personal and laundry services	346	\$16,259	1,266,102	\$20,394	8,397	\$19,094	1.388	1.522	1.263	1.331						
NAICS 532 Rental and leasing services	332	\$28,964	641,022	\$31,382	5,077	\$22,667	0.838	1.133	1.212	1.018						
NAICS 446 Health and personal care stores	294	\$25,608	940,725	\$28,912	6,041	\$26,206	1.383	1.644	1.002	0.896						
NAICS 442 Furniture and home furnishings stores	291	\$21,086	563,822	\$28,784	4,119	\$24,531	0.290	0.655	0.727	0.779						
NAICS 611 Educational services	225	\$18,826	2,079,232	\$35,444	7,989	\$25,191	0.925	1.219	1.028	1.000						
NAICS 451 Sporting goods, hobby, book and music stores	223	\$13,409	646,085	\$17,846	4,259	\$13,974	0.485	1.461	1.434	0.927						
NAICS 814 Private households	91	\$16,116	502,754	\$15,377	1,450	\$18,119	0.328	0.555	0.923	0.953						
NAICS 454 Nonstore retailers	52	\$24,092	424,384	\$35,699	2,180	\$26,328	0.207	0.255	1.199	0.936						
NAICS 111 Crop production	43	\$18,382	555,437	\$20,973	3,926	\$20,463	0.191	0.147	1.666	0.990						
NAICS 115 Agriculture and forestry support activities	22	\$24,369	309,217	\$20,014	3,475	\$25,658										

Source: <http://ftp.bls.gov/pub/special.requests/cew/>

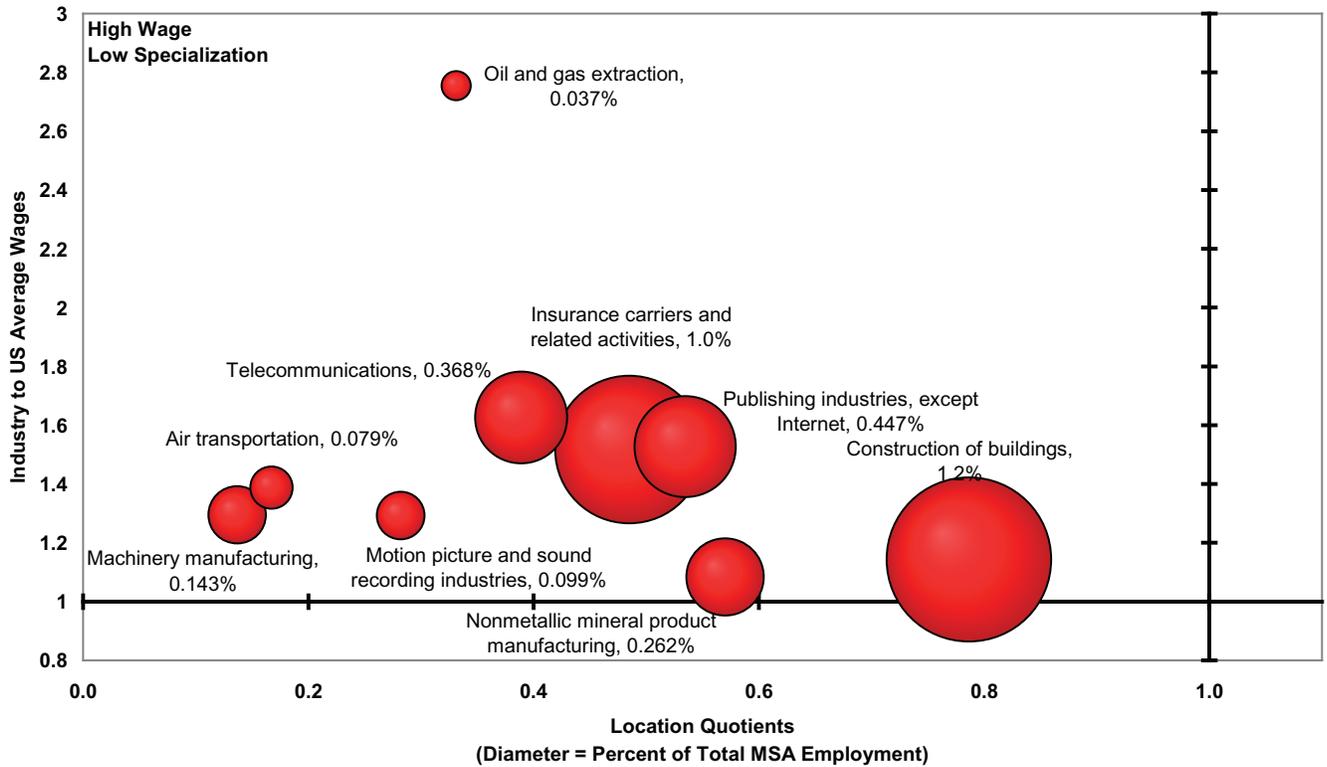
### Texarkana AR-TX MSA 2004 NAICS Three Digit



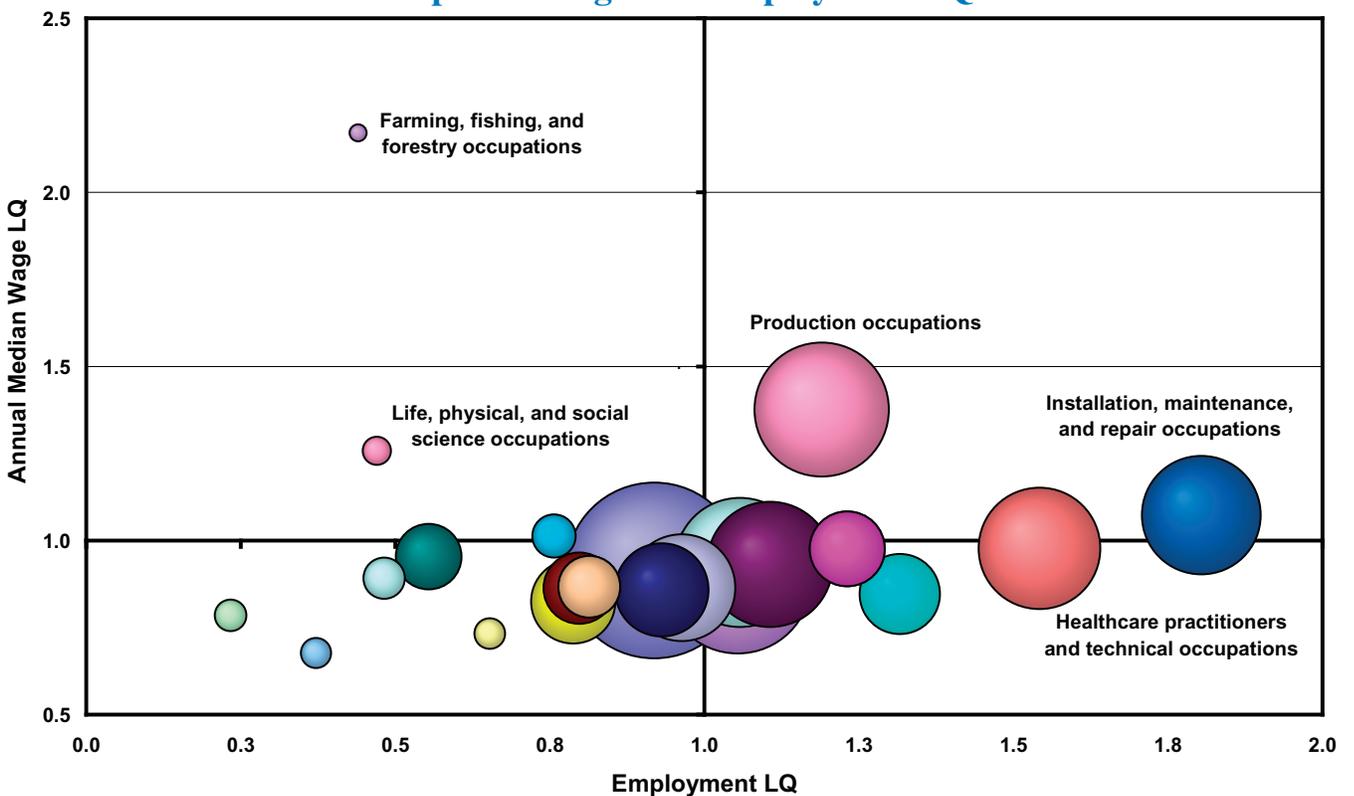
### Texarkana AR-TX MSA 2004 NAICS Three Digit (Detail)



### Texarkana AR-TX MSA 2004 NAICS Three Digit (Detail)



### Texarkana AR-TX MSA 2004 Occupation Wage and Employment LQs



## Texarkana AR-TX MSA, 2004

Occupational Title	MSA EMP#	MSA EMP %	MSA Annual Median Wage	US Annual Median Wage	Ratio of MSA Occ Wage to MSA Median Wage	Ratio of US Occ Wage to US Median Wage	Ratio of MSA Occ Wage to US Median Wage	Median Wage LQ
Management occupations	1,960	3.7%	\$56,740	\$75,960	1.84	2.23	1.66	0.83
Business and financial operations occupations	1,190	2.3%	\$44,030	\$51,000	1.42	1.49	1.29	0.95
Computer and mathematical occupations	280	0.5%	\$45,100	\$63,440	1.46	1.86	1.32	0.79
Architecture and engineering occupations	470	0.9%	\$47,970	\$59,410	1.55	1.74	1.41	0.89
Life, physical, and social science occupations	220	0.4%	\$58,250	\$51,150	1.88	1.50	1.71	1.26
Community and social services occupations	520	1.0%	\$31,140	\$33,940	1.01	0.99	0.91	1.01
Legal occupations	260	0.5%	\$41,400	\$62,400	1.34	1.83	1.21	0.73
Education, training, and library occupations	3,140	5.9%	\$30,670	\$39,170	0.99	1.15	0.90	0.86
Arts, design, entertainment, sports, and media occupations	250	0.5%	\$22,320	\$36,400	0.72	1.07	0.65	0.68
Healthcare practitioners and technical occupations	4,080	7.7%	\$42,890	\$48,470	1.39	1.42	1.26	0.98
Healthcare support occupations	1,780	3.4%	\$16,820	\$21,950	0.54	0.64	0.49	0.85
Protective service occupations	1,540	2.9%	\$27,210	\$30,790	0.88	0.90	0.80	0.98
Food preparation and serving related occupations	4,600	8.7%	\$13,490	\$15,900	0.44	0.47	0.40	0.94
Building and grounds cleaning and maintenance occupations	1,410	2.7%	\$15,270	\$19,540	0.49	0.57	0.45	0.86
Personal care and service occupations	1,050	2.0%	\$14,360	\$18,280	0.46	0.54	0.42	0.87
Sales and related occupations	5,910	11.2%	\$17,520	\$21,860	0.57	0.64	0.51	0.89
Office and administrative support occupations	8,500	16.1%	\$22,310	\$26,960	0.72	0.79	0.65	0.91
Farming, fishing, and forestry occupations	80	0.2%	\$34,100	\$17,350	1.10	0.51	1.00	2.17
Construction and extraction occupations	2,400	4.5%	\$26,670	\$34,330	0.86	1.01	0.78	0.86
Installation, maintenance, and repair occupations	3,870	7.3%	\$34,510	\$35,520	1.12	1.04	1.01	1.07
Production occupations	4,960	9.4%	\$32,990	\$26,480	1.07	0.78	0.97	1.38
Transportation and material moving occupations	4,340	8.2%	\$20,450	\$24,240	0.66	0.71	0.60	0.93
All Occupations	52,810	100.0%	\$30,905	\$34,135	1.00	1.00	0.91	1.00

Source: Occupational Employment Statistics (OES) Survey, Bureau of Labor Statistics, Department of Labor. [Http://stat.bs.gov/oes/home.htm](http://stat.bs.gov/oes/home.htm)



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