

Arrowhead Center

Leading Economic Development for New Mexico State



The Economic Base of the State of New Mexico

**PREPARED BY: The Office of Policy Analysis at Arrowhead Center,
New Mexico State University**

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New Mexico State University

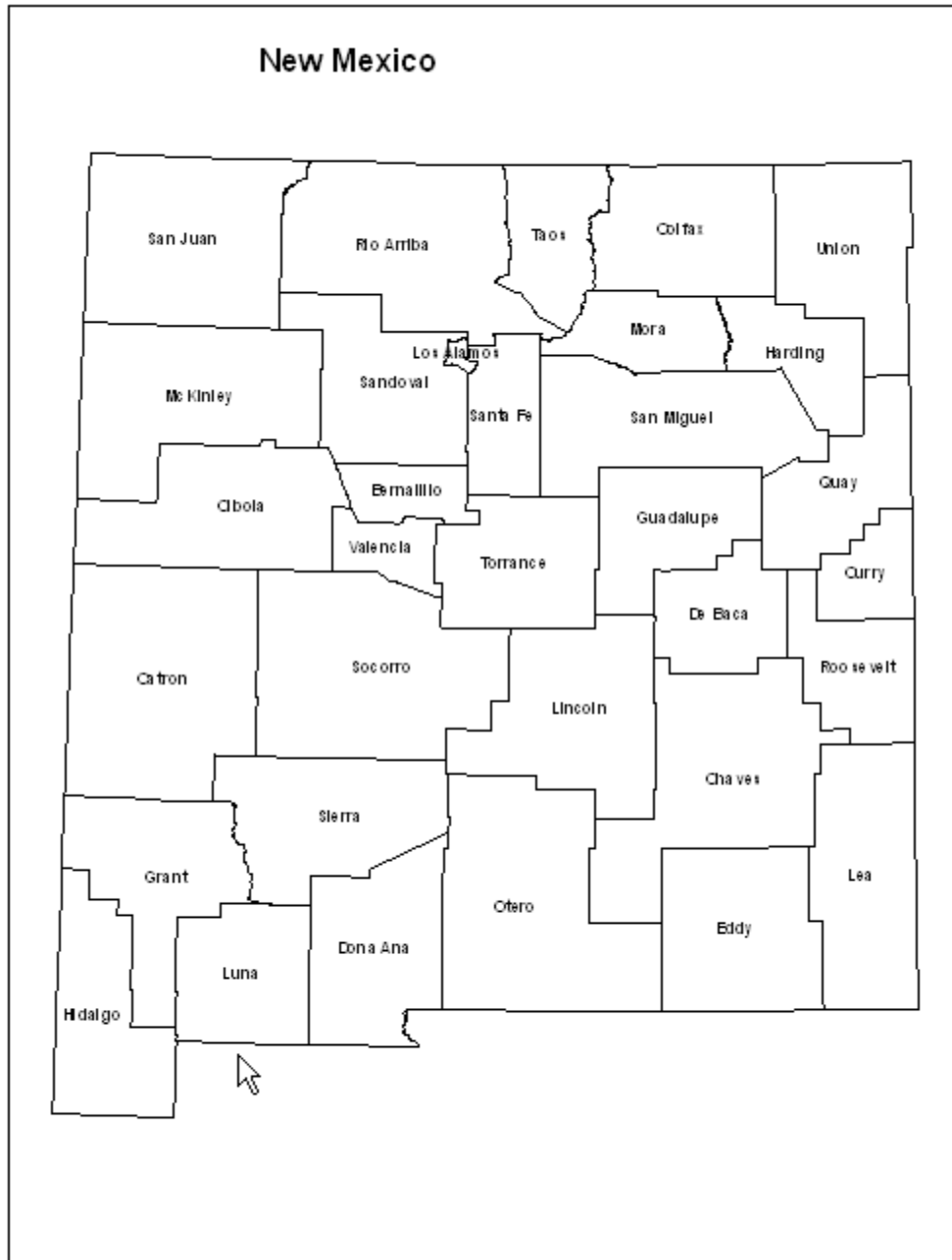
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Introduction

This report is one of 35 economic base studies prepared by the Office of Policy Analysis at NMSU's Arrowhead Center. Of the 35 reports, 33 describe the economic base of New Mexico's counties. There are separate reports for the Albuquerque Metropolitan Statistical Area (MSA), and the State of New Mexico. New Mexico has three additional MSAs (Las Cruces, Santa Fe and Farmington) but each of these are single county MSAs and separate reports for these MSAs were not prepared. All 35 reports may be found at: <http://arrowheadcenter.nmsu.edu/policy/>

The reports have been prepared under the direction of Anthony V. Popp and James Peach, Co-Directors of the Office of Policy Analysis and Leo Delgado, Policy Analyst at Arrowhead Center. Graduate students employed by Arrowhead Center who contributed to the reports include: Ilana Boivie, Hector J. Aguirre, and Amanda J. Alaniz. Comments and suggestions are welcome and should be sent to: jpeach@nmsu.edu. Our intent is to update these reports on an annual basis.

An economic base study is a descriptive tool used to analyze the composition of local economic activity. Economic base studies are often conducted to help guide local economic development activities and to help economic development officials make decisions such as what type of firms they should attempt to attract to local areas. Economic base studies can also help local and regional businesses better understand local and export product markets.

The specific purposes of economic base studies include:

- Understanding regional economic growth
- Making short and long term forecasts
- Identifying potential growth sectors
- Identifying potential problem areas

According to economic base theory, economic development depends on industries that export goods and services out of the region (basic industries), as opposed to those businesses whose services remain local (non-basic). Basic activities—often said to include mining, agriculture, tourism, and manufacturing, among other sectors—promote economic growth by bringing jobs and income into the local economy. Non-basic activities do not drive the economy in the same way that basic activities do.

Non-basic activities serve local residents and provide support for basic industries. Examples of non-basic industries typically include activities such as health care, finance, and real estate.

An industry classified as basic in one region may easily be identified as non-basic in another region. One common means of identifying local basic activity is through the use of location quotients (LQs). LQs are calculated as a single industry's percent of total local employment divided by that industry's percent of total state or national employment. For example, an LQ for a single New Mexico industry may be calculated as follows:

$$\text{LQ} = \frac{\text{Employment in industry } j \text{ in NM} / \text{total employment in NM}}{\text{Employment in industry } j \text{ in US} / \text{total employment in US}}$$

The LQ serves to illustrate the relative importance of that sector locally as compared to the state or national economy. In this report LQs are calculated for industries within New Mexico with national employment serving as the basis for comparison (Table 2).

An LQ greater than 1.0 (shaded in Table 2) indicates that a particular industry employs proportionately more workers locally than it does at the national level. Conversely, an LQ of less than 1.0 signifies that the industry of note employs fewer workers locally as compared to the state or national average. In this report, an LQ > 1.0 combined with judgment about the structure of the local economy is used to identify basic industries. For additional information on LQs, including a discussion of common criticisms of this approach, see

<http://arrowheadcenter.nmsu.edu/policy/faq/Locationpercent20Quotients.pdf>.

A common criticism of economic base studies and the LQ approach to identifying basic industries is that the LQs often change over time. In this report, LQs are described for the most recent year for which data are available and the four years preceding (2003-2007).

The data used in this report are from the U.S. Department of Commerce, Bureau of Economic Analysis, and Regional Economic Information System (BEA). The data are available at: www.bea.gov.

New Mexico

The state of New Mexico is located in the south western United States, and contains 121,355 square miles. The population of New Mexico in 2007 was 1,964,402 or 0.65 percent of the total U.S. population. The city of Albuquerque, with a population estimated by the U.S. Census Bureau to be 518,271 contained 26.4 percent of the state population in 2007, and remains the most populated city in the state. Between 2003 and 2007, New Mexico's population increased by 5.17 percent, while the nation's population increased by 3.82 percent.

Per capita personal income in New Mexico in 2007 was \$30,706, or 79.5 percent of the national average of \$38,615. Despite having a relatively low per capita income, the growth rate of per capita income in New Mexico between 2003 and 2007, 22.95 percent, has been slightly higher than the nation's per capita income growth rate of 22.47 percent.

Estimates of Gross Domestic Product (GDP) by state (www.bea.gov) indicate that New Mexico contributed \$75,192 billion (0.55 percent) to the nation's \$13.715 trillion dollar economy in 2007. New Mexico's GDP increased by 30.8 percent between 2003 and 2007, significantly faster than the national growth of 26 percent over the same period.

Total employment in New Mexico in 2007 was 1,115,677. Total employment in New Mexico increased by 10.1 percent between 2003 and 2007—a rate of growth higher than that of the national growth of 8.0 percent over the same period. New Mexico's 2007 employment to population ratio was 0.568, while the nation's ratio was 0.601.

The private sector employed 79.0 percent of all workers in New Mexico in 2007, while government and government enterprises accounted for 18.8 percent, and farm employment accounted for 2.2 percent of the total. The private industries with the highest percentages of total employment included retail trade (10.9 percent of total employment), health care and social assistance (10.3 percent of total employment), accommodation and food services (7.7 percent of total employment), construction (7.4 percent of total employment), and professional and technical services (7.3 percent of total employment). State and local government were the largest employers in the public sector, at 5.3 percent and 9.4 percent of total employment, respectively; while federal/civilian and military employment

accounted for 2.7 percent and 1.4 percent of the total, respectively. New Mexico employment by sector is displayed in Table 1.

Basic and Non-Basic Industries in New Mexico

Table 2 contains Location Quotients for New Mexico from 2003 to 2007 calculated using data for the United States as the basis of comparison. An LQ greater than 1.0 (shaded in Table 2) qualifies an industry for consideration as a basic industry. Industries with LQs very near to 1.0 as well as industries such as local government and construction that typically support the local economy rather than export goods and services outside the region are not included here as basic industries.

The importance of mining to the economic base of New Mexico is obvious in Table 2, in which those sectors with an LQ greater than 1.0 have been shaded. The mining sector had an LQ of 4.05 in 2007, and LQs higher than 3.8 in all five years considered, reflecting the significance of both mineral and non-mineral mining throughout the state. The state of New Mexico ranks first in the nation in potash, crude perlite, and zeolite production; rivals Colorado as the top producer in coal bed methane; third in copper production; fifth in natural gas production; 35th in carbon dioxide emission production; sixth in crude oil production; 13th in coal production; 10th in silver production; sixth in molybdenum production; and 9th in gold production (US Geological Services, <http://minerals.usgs.gov/minerals/pubs/stat/index.htm>; US Energy Information Administration, http://www.eia.doe.gov/emeu/states/_seds_production.html). In 2007 the mining industry employed 24,596 total workers throughout the state.

Also due to the significance of energy mining to New Mexico, the utilities industry may be considered a basic economic activity within the state. The utilities sector had an LQ of 1.24 in 2007, and LQs exceeding 1.1 in all five years considered. These high LQs reflect the several very large power plants located throughout the state, including the Four Corners Power Plant and the San Juan Power Plant, both located in San Juan County, as well as the Cunningham Power Plant, located in Lea County. In 2007 the utilities sector accounted for 4,397 total jobs in New Mexico.

Agriculture and related industries, including farm proprietors, farm employees, and forestry, fishing, and related activities, should also be considered a basic economic sector in New Mexico. The LQ

for farm proprietors was 1.36 in 2007 and exceeded 1.3 in all five years considered, while the LQ for farm employees was 1.40 in 2007 and has been greater than 1.3 in all five years considered. The relatively large LQs for forestry, fishing, and related activities 1.13 in 2007 and greater than 1.1 in all five years considered—suggest that this sector too should be considered as a basic sector. In combination, these sectors accounted for 49,113 employees throughout New Mexico in 2007.

Accommodation and food services, with an LQ of 1.13 in 2007 and LQs exceeding 1.1 in all five years considered, can also be considered a basic industry in New Mexico. The consistently high LQs reflect the large tourism base of destinations such as Albuquerque and Santa Fe, ski areas including Ruidoso and Taos, and national parks and monuments such as Carlsbad Caverns National Park and White Sands National Monument. In 2007 the accommodation and food services sector accounted for 85,528 total employees.

Other sectors with LQs higher than 1.0 in 2007 include construction (1.15), professional and technical services (1.12), health care and social assistance (1.03), and retail trade (1.02). In general, construction is best viewed as a support industry, as well as the professional and technical services industry. By providing skills and knowledge to business organizations, to the public, and other organizations in general, the professional and technical services industry makes these two attributes available on a project basis. The other industries had LQs so consistently close to 1.0 as to not warrant inclusion as basic activities. Hence, for this analysis these industries are not included as basic economic sectors.

The entry labeled government and government enterprises is not a separate industry but merely the sum of the other government categories. In 2007, all of the government sectors had LQs greater than 1.0. In each year considered, the LQ for federal civilian employment exceeded 1.70, and the LQ for military employment exceeded 1.2, reflecting the large employment bases of Cannon, Holloman, and Kirtland Air Force Bases, as well as the White Sands Missile Range. Sandia National Laboratory, part of the Department of Energy, also helps to account for the high federal civilian employment LQ. Federal government employment is therefore classified as a basic industry in New Mexico.

State government employment had an LQ of 1.85 in 2007, and LQs exceeding 1.8 in all five years considered, reflecting, in part, the large employment base of the numerous state colleges and universities in New Mexico, including the University of New Mexico, New Mexico State University, Western New Mexico University, Eastern New Mexico University, and the New Mexico Institute of Mining and Technology. The Los Alamos National Laboratory (LANL), a government-owned national security research laboratory, employs many state workers as well. Many of the LANL workers classified as state employees are actually employees of the State of California. For this analysis, state government employment is considered a basic economic sector.

Local government had an LQ of 1.20 in 2007, but is still best considered a non-basic economic activity.

In brief, the data and analysis suggest that the following industries should be considered basic industries in the state of New Mexico:

1. Mining, which accounted for 24,596 total jobs in 2007.
2. Utilities, which accounted for 4,397 total jobs in 2007.
3. Agriculture and related industries, including 17,519 farm proprietors, 24,508 farm employees, and 7,086 jobs in the forestry, fishing, and related activities sector for a total of 49,113 jobs in 2007.
4. Accommodation and food services, which accounted for 85,528 total jobs in 2007.
5. Federal government employment, including 15,119 military jobs and 30,332 federal civilian jobs, for a total of 45,451 jobs in 2007.
6. State government employment, which accounted for 59,478 total jobs in 2007.

It is common in economic base studies to calculate an export-base multiplier. This multiplier is obtained by dividing total employment by basic sector employment. In the case of New Mexico the multiplier = $1,115,677 / 268,563 = 4.15$. This ratio suggests that the addition of each basic sector job in New Mexico would be associated with an additional 4.15 non-basic sector jobs. Caution in the interpretation of this multiplier is appropriate. This ratio may or may not apply in future years. Further,

since farm proprietors have been included in the basic sector, it should be pointed out that farm proprietors often have more than one occupation and this fact may bias the 'multiplier' upward.

The export base multiplier 4.15 calculated above reinforces the importance of basic (exporting) industries to the New Mexico economy. Local economic development policy actions such as the creation of industrial parks, tax abatement and financing, and workforce development projects are often used by local communities to expand an area's economic base. The appropriate mix of such policies is often a result of public and private sector interaction in the context of the development of a community economic development plan.

The economic landscape of New Mexico may change drastically in the coming years, due to the development of several new projects and research parks. The New Mexico spaceport, which officially began groundbreaking on June 19, 2009, will have effects in Sierra County as well as surrounding areas. (For more information and a comprehensive analysis of the economic impact of the spaceport, see http://www.spaceportamerica.com/NMSU_Report.pdf.) Also, the new 72,500 square foot Civic Center, located in downtown Santa Fe which opened in September 2008, will very possibly increase the tourism base of Santa Fe and nearby areas.

Summary of Changes from Prior Year

This document has been revised to reflect new data figures obtained from the BEA (www.bea.gov) for the 2007 year. The following are significant changes for the state of New Mexico for the years preceding 2007.

The population of New Mexico in 2007 was 1,964,402, or 0.65 percent of the total U.S. population, and increased by 1.37 percent from 1,937,916 in 2006. The city of Albuquerque, with a population estimated by the U.S. Census Bureau to be 518,271, contained 26.4 of the state population in 2007, and remains the most populated city in the state. Per capita personal income in New Mexico increased by 4.6 percent in 2007 to \$30,706, or 79.5 percent of the national average of \$38,615.

Mining is very important to the state of New Mexico. The mining sector had an LQ of 4.05 in 2007, with a slight decrease from 4.14 in 2006. The utilities sector had an LQ of 1.24 in 2007, and

increased slightly from 1.18 in 2006. The LQ for farm proprietors was 1.36 in 2007, a small increase from the previous year (LQ 1.32); while the LQ for farm employees was 1.40 in 2007, which also increased slightly from 1.38 in 2006. The LQ for forestry, fishing, and related activities of 1.13 in 2007 has fallen from 1.15 in 2006. Accommodation and food services, with an LQ of 1.13 in 2007 was slightly down from 2006 (1.15). Other sectors with LQs higher than 1.0 in 2007 include construction (1.15), professional and technical services (1.12), and retail trade (1.02). The LQ's for these industries increased slightly from 2006 to 2007. The health care and social assistance LQ (1.03) was unchanged for 2007.

In 2007, all of the government sectors had LQs greater than 1.0. In each year considered, the LQ for federal civilian employment exceeded 1.7, and the LQ for military employment exceeded 1.2. State government employment had an LQ of 1.85 in 2007, but fell from 2.01 in 2006. Local government had an LQ of 1.20 in 2007, but is still best considered a non-basic economic activity, and had little change in all five years considered.

Tables 1 to 4 appear on pages 11-14

Table 1: New Mexico County Employment by Sector, 2007

Industry	Employment	Percent of Total Employment
Wage and salary employment	887,936	79.6
Proprietors employment	227,741	20.4
Farm proprietors employment	17,519	1.6
Nonfarm proprietors employment	210,222	18.8
Farm employment	24,508	2.2
Nonfarm employment	1,091,169	97.8
Private employment	881,017	79.0
Forestry, fishing, related activities, and other	7,086	0.6
Mining	24,596	2.2
Utilities	4,397	0.4
Construction	82,275	7.4
Manufacturing	42,563	3.8
Wholesale trade	30,243	2.7
Retail trade	121,257	10.9
Transportation and warehousing	27,625	2.5
Information	18,663	1.7
Finance and insurance	32,460	2.9
Real estate and rental and leasing	41,905	3.8
Professional and technical services	81,750	7.3
Management of companies and enterprises	6,105	0.5
Administrative and waste services	60,687	5.4
Educational services	16,645	1.5
Health care and social assistance	115,090	10.3
Arts, entertainment, and recreation	22,823	2.0
Accommodation and food services	85,528	7.7
Other services, except public administration	59,319	5.3
Government and government enterprises	210,152	18.8
Federal, civilian	30,332	2.7
Military	15,119	1.4
State and local	164,701	14.8
State government	59,478	5.3
Local government	105,223	9.4
Total employment	1,115,677	100.0

Source: Regional Economic Information System, Bureau of Economic Analysis, and author calculations.

Table 2: New Mexico Location Quotients by sector (US Based): 2003-2007

	2003	2004	2005	2006	2007
Total Employment	1.000	1.000	1.000	1.000	1.00
Wage and salary employment	0.990	0.991	1.005	0.998	0.99
Proprietors employment	1.046	1.038	0.980	1.009	1.02
Farm proprietors employment	1.313	1.312	1.333	1.317	1.36
Nonfarm proprietors employment	1.026	1.019	0.955	0.989	1.00
Farm employment	1.302	1.322	1.396	1.382	1.40
Nonfarm employment	0.994	0.994	0.993	0.994	0.99
Private employment	0.911	0.910	0.908	0.921	0.93
Forestry, fishing, related	1.181	1.158	1.163	1.146	1.13
Mining	3.882	3.986	4.182	4.135	4.05
Utilities	1.166	1.155	1.182	1.178	1.24
Construction	1.068	1.082	1.092	1.134	1.15
Manufacturing	0.459	0.452	0.459	0.473	0.48
Wholesale trade	0.724	0.723	0.733	0.733	0.74
Retail Trade	1.017	1.019	1.014	1.007	1.02
Transportation and warehousing	0.747	0.758	0.741	0.739	0.76
Information	0.825	0.795	0.800	0.849	0.86
Finance and insurance	0.652	0.647	0.632	0.624	0.62
Real estate and rental and leasing	0.890	0.879	0.829	0.845	0.83
Professional and technical services	1.008	1.008	0.986	1.062	1.12
Management of companies	0.509	0.488	0.570	0.550	0.50
Administrative and waste services	0.902	0.882	0.868	0.881	0.88
Educational services	0.696	0.714	0.700	0.700	0.70
Health care and social assistance	1.027	1.044	1.042	1.030	1.03
Arts, entertainment, and recreation	1.018	1.017	0.989	0.990	0.9905
Accommodation and food services	1.181	1.155	1.147	1.145	1.13
Other services, except public administration	0.928	0.926	0.936	0.937	0.95
Government and government enterprises	1.492	1.504	1.520	1.453	1.41
Federal, civilian	1.750	1.749	1.787	1.788	1.77
Military	1.364	1.374	1.329	1.259	1.201
State and local	1.467	1.482	1.501	1.425	1.37
State government	2.207	2.210	2.234	2.013	1.85
Local government	1.193	1.212	1.230	1.210	1.20

Source: Author calculations from Tables 3 and 4

Table 3: New Mexico Employment by sector: 2003-2007

	2003	2004	2005	2006	2007
Total Employment	1,013,107	1,038,845	1,065,237	1,099,401	1,115,677
Wage and salary employment	822,438	838,544	854,854	878,157	887,936
Proprietors employment	190,669	200,301	210,383	221,244	227,741
Farm proprietors employment	17,035	16,972	17,159	17,094	17,519
Nonfarm proprietors employment	173,634	183,329	193,224	204,150	210,222
Farm employment	23,855	23,757	24,550	24,319	24,508
Nonfarm employment	989,252	1,015,088	1,040,687	1,075,082	1,091,169
Private employment	775,615	797,520	821,932	860,556	881,017
Forestry, fishing, related	7,080	7,132	7,164	6,995	7,086
Mining	18,875	19,025	21,150	22,903	24,596
Utilities	4,120	4,063	4,084	4,149	4,397
Construction	63,927	68,145	73,920	80,317	82,275
Manufacturing	41,770	40,954	41,454	43,272	42,563
Wholesale trade	26,761	27,441	28,717	30,112	30,243
Retail Trade	113,827	115,746	118,237	118,923	121,257
Transportation and warehousing	23,920	24,980	25,583	26,406	27,625
Information	17,942	17,238	17,391	18,867	18,663
Finance and insurance	31,515	31,844	32,438	32,847	32,460
Real estate and rental and leasing	32,319	34,859	38,093	41,672	41,905
Professional and technical services	64,443	67,459	68,046	76,459	81,750
Management of companies	5,423	5,354	5,893	6,299	6,105
Administrative and waste services	53,077	54,423	55,678	58,035	60,687
Educational services	13,936	14,838	15,427	16,213	16,645
Health care and social assistance	102,830	107,352	109,215	112,315	115,090
Arts, entertainment, and recreation	20,722	21,479	22,185	22,757	22,823
Accommodation and food services	79,733	80,498	81,528	84,396	85,528
Other services, except public administration	53,395	54,690	55,729	57,619	59,319
Government and government enterprises	213,637	217,568	218,755	214,526	210,152
Federal, civilian	29,871	29,822	30,107	30,554	30,332
Military	17,405	17,426	16,258	15,764	15,119
State and local	166,361	170,320	172,390	168,208	164,701
State government	67,614	68,600	69,113	63,870	59,478
Local government	98,747	101,720	103,277	104,338	105,223

Source: Regional Economic Information System, Bureau of Economic Analysis, www.bea.gov

Table 4: United States Employment by sector: 2003-2007

	2003	2004	2005	2006	2007
Total Employment	167,553,500	170,512,700	174,228,400	177,817,600	180,943,800
Wage and salary employment	137,406,000	138,847,000	140,973,000	143,321,000	144,815,000
Proprietors employment	30,147,500	31,665,700	33,255,400	34,496,600	36,128,800
Farm proprietors employment	2,146,000	2,124,000	2,133,000	2,115,000	2,094,000
Nonfarm proprietors employment	28,001,500	29,541,700	31,122,400	32,381,600	34,034,800
Farm employment	3,031,000	2,949,000	2,913,000	2,867,000	2,841,000
Nonfarm employment	164,522,500	167,563,700	171,315,400	174,950,600	178,102,800
Private employment	140,836,500	143,819,700	147,466,400	150,930,600	153,845,800
Forestry, fishing, related	991,300	1,010,500	1,028,400	1,018,500	1,014,400
Mining	804,200	783,400	836,600	932,200	984,900
Utilities	584,200	577,400	571,900	572,700	576,500
Construction	9,901,300	10,333,600	10,993,800	11,438,900	11,641,100
Manufacturing	15,063,000	14,873,900	14,819,200	14,774,200	14,512,000
Wholesale trade	6,110,500	6,230,500	6,385,500	6,534,800	6,657,800
Retail Trade	18,505,100	18,649,500	18,980,800	19,121,800	19,282,000
Transportation and warehousing	5,296,500	5,406,800	5,603,300	5,747,900	5,887,700
Information	3,595,400	3,561,100	3,569,700	3,553,500	3,537,000
Finance and insurance	7,996,500	8,075,000	8,243,300	8,414,800	8,429,700
Real estate and rental and leasing	6,008,500	6,511,300	7,125,100	7,468,500	8,142,400
Professional and technical services	10,572,300	10,988,900	11,243,100	11,631,800	11,866,300
Management of companies	1,762,500	1,800,400	1,858,200	1,901,700	1,965,200
Administrative and waste services	9,729,400	10,132,000	10,372,500	10,759,500	11,180,300
Educational services	3,312,800	3,413,300	3,555,800	3,690,500	3,833,000
Health care and social assistance	16,552,100	16,871,600	17,224,300	17,739,900	18,204,900
Arts, entertainment, and recreation	3,367,800	3,466,700	3,529,300	3,634,400	3,736,900
Accommodation and food services	11,169,700	11,443,800	11,714,100	12,008,200	12,253,000
Other services, except public administration	9,513,400	9,690,000	9,811,500	9,986,800	10,140,700
Government and government enterprises	23,686,000	23,744,000	23,849,000	24,020,000	24,257,000
Federal, civilian	2,823,000	2,798,000	2,790,000	2,784,000	2,782,000
Military	2,110,000	2,082,000	2,026,000	2,040,000	2,041,000
State and local	18,753,000	18,864,000	19,033,000	19,196,000	19,434,000
State government	5,066,000	5,094,000	5,127,000	5,154,000	5,205,000
Local government	13,687,000	13,770,000	13,906,000	14,042,000	14,229,000

Source: Regional Economic Information System, Bureau of Economic Analysis, www.bea.gov