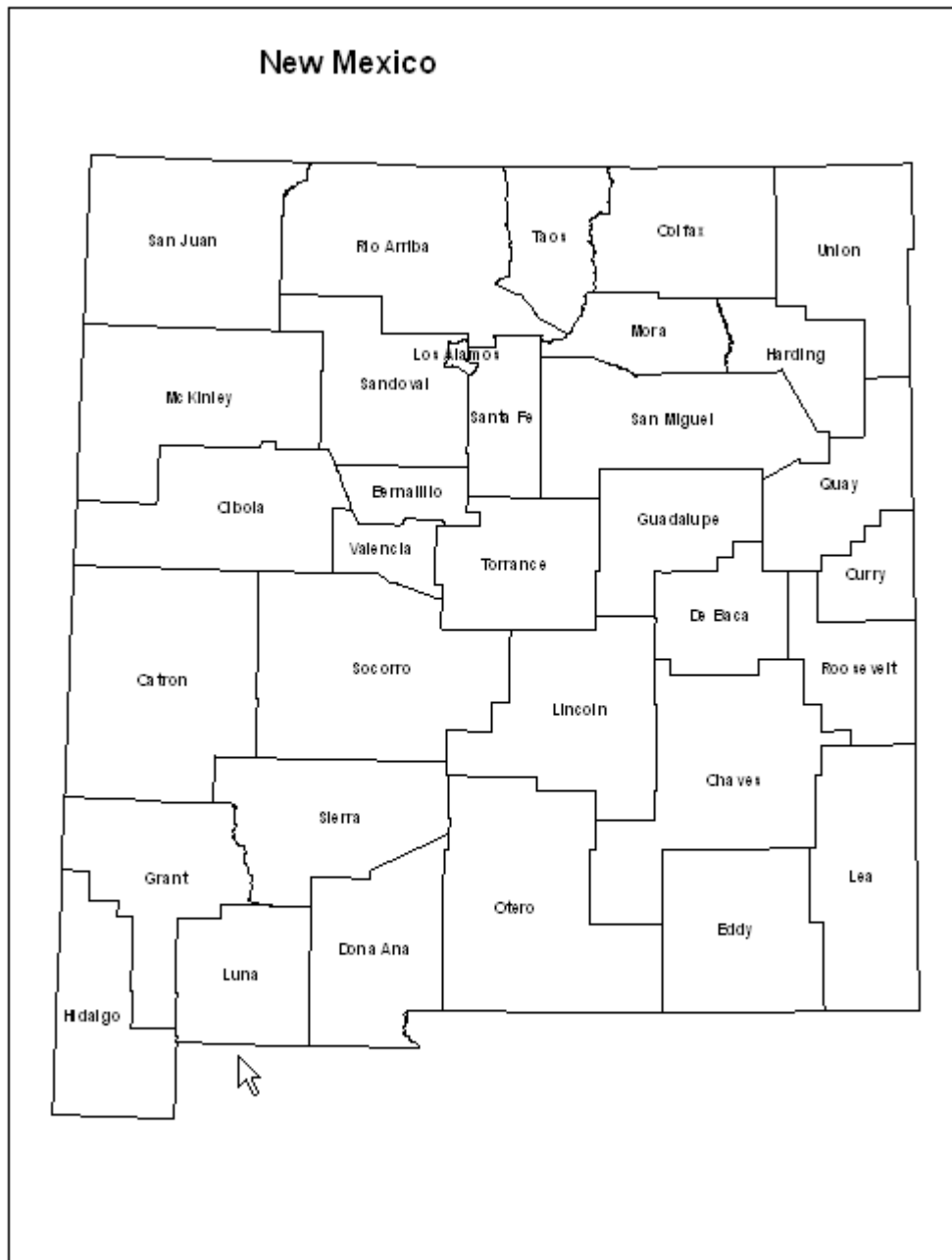




The Economic Base of the State of New Mexico

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Introduction

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

The reports have been prepared under the direction of James Peach, Director of the Office of Policy Analysis. Leonardo Delgado and Noel Martinez, graduate students in the NMSU Doctorate in Economic Development program, did much of the work on the updates. Comments and suggestions are welcome and are to 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:

- Understand regional economic growth
- Make short and long term forecasts
- Identify potential growth sectors
- Identify potential problem areas

According to economic base theory, any local economy may be divided into basic and non-basic industries. This theory also suggests that economic growth depends on sectors that export goods and services out of the region (basic industries), as opposed to those businesses whose services remain local, (non-basic industries). Basic industries promote local economic growth by bringing jobs and income into the local economy. Non-basic industries serve local residents and provide support to basic industries.

An industry classified as basic in one region may 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, a LQ for a single New Mexico industry (industry j) may be calculated as follows:

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

The LQ serves to illustrate the relative importance in the level of the local employment of that sector with respect to the benchmark economy, state or national. A LQ greater than 1.0 indicates that a particular industry employs proportionately more workers locally than it does at the state or national level. Conversely, a LQ of less than 1.0 indicates that the industry of note employs fewer workers locally as compared to the state or national average. For additional information on LQs, see <http://arrowheadcenter.nmsu.edu/wp-content/uploads/2015/06/WhatisaLocationQuotient.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 preceding years (2010-2010). In this report, basic industries are identified using general knowledge about the structure of the local economy combined with LQs greater than 1.0. LQs are described for the most recent year for which data were available and for the five preceding years (2011-2015). The data used in this report are from the U.S. Department of Commerce, Bureau of Economic Analysis (BEA), and the data can be found at www.bea.gov.

New Mexico

The State of New Mexico is located in the southwestern part of the United States, and contains 121,298 square miles. The population of New Mexico in 2015 was 2,085,109 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 557,448 contained 26.73 percent of the state's population in 2015, and remains the most populated city in the state. Between 2014 and 2015, New Mexico's populations increased by 0.33 percent, while the nation's population increased by 3.11 percent.

Per capita personal income in New Mexico in 2015 was \$37,938, or 78.85 percent of the national average of \$48,112. Despite having a relatively low per capita income, the growth rate of per capita income in New Mexico, between 2011 and 2015 (9.24 percent) was lower than the nation's per capita growth rate of 13.33 for the same time period.

Estimates of Gross Domestic Product (GDP) by state indicate that New Mexico contributed \$93.23 billion (0.52 percent) to the nation's \$17.95 trillion-dollar economy in 2015. New Mexico's GDP

increased by 4.45 percent between 2011 and 2015, which was a lower rate of growth compared to the national GDP growth rate of 16.35 percent over the same period.

Total employment in New Mexico in 2015 was 1,095,949. Total employment in New Mexico increased by 2.88 percent between 2011 and 2015, a lower rate of growth compared to the nation's employment growth rate which increased by 7.89 percent over the same period. New Mexico's 2015 employment to population ratio was 0.53, while the nation's ratio was 0.59.

The Private sector employed 78.34 percent of all workers in New Mexico in 2015, while Government and Government enterprises accounted for 19.03 percent, and Farm employment accounted for 2.63 percent of the total. The private industries with the highest percentages of total employment included: Retail Trade (10.56 percent of total employment), Health care and Social assistance (11.83), Accommodation and Food services (8.27), Construction (5.53), and Professional and Technical services (7.08). State and Local government were the largest employers in the public sector, at 5.38 percent and 9.45 percent of total employment, respectively. Federal/civilian and Military employment accounted for 2.66 percent and 1.54 percent of the total, respectively. New Mexico employment by sector is displayed in Table 2.

Basic and Non-Basic Industries in New Mexico

Table 3 contains Location Quotients for New Mexico from 2011 to 2015 calculated using data for the United States as the basis of comparison. In this analysis, an LQ greater than 1.0 (shaded in Table 3) qualifies an industry to be considered a basic industry for the State of New Mexico. 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 represented in the LQ of 4.14 in 2015. This industry contained LQs higher than 3.7 over the past five years thus reflecting the significance of both mineral and non-mineral mining throughout the state. The State of New Mexico ranked 1st in the nation in potash production; 2nd in copper production; and 12th in coal production in 2016 – according to the most recent available data. (New Mexico Energy, Minerals, & Natural Resources Department, 2016, 34). Additionally, the Mining industry employed 35,898 total workers throughout the state in 2015. For more information regarding New Mexico's commodity production, New Mexico Energy, Minerals, & Natural Resources Department Annual Report can be found at:

http://www.emnrd.state.nm.us/ADMIN/documents/Final_2016_EMNRD_AnnualReport.pdf

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 1.35 in 2015, and LQs exceeding 1.31 in all 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 2015 the utilities sector accounted for 4,573 total jobs in New Mexico.

Agriculture and related industries, including Farm employees, as well as Forestry, fishing, and related activities, should be considered a basic economic sector in New Mexico. The LQ for Farm employment was 1.89 in 2015 and has been greater than 1.71 in all years considered. Forestry, fishing, and related activities had a LQ of 1.06 in 2015 and had LQs greater than 1.01 in 2011 and 2013. The LQs for 2011 and 2012 were slightly below 1.0 and then above 1.0 in 2015. This results in the Forestry, fishing, and related activities industry to be considered a basic sector for the state in 2015. In this analysis, Agriculture and related industries comprised of Farm as well as Forestry, fishing, and related activities employment for 2015. These two sectors accounted for 34,656 employees throughout New Mexico in 2015.

Accommodation and Food services, with an LQ of 1.12 in 2015 and LQs exceeding 1.10 in all 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 2015, the Accommodation and Food services sector accounted for 90,601 total employees.

Other industries in the private sector with LQs higher than 1.0 in 2015 include: Construction (1.06), Professional and Technical services (1.02), Health care and Social assistance (1.06), and Retail Trade (1.05). In general, the Construction and Professional and Technical Services industries are best viewed as a support 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 an aggregate of the other government categories. In 2015, all of the government sectors had LQs greater than 1.00. In each year considered, the LQ for federal civilian employment exceeded 1.80, and the LQ

for Military employment exceeded 1.44, reflecting the large employment 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 accounts 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 1.93 in 2015, and LQs exceeding 1.83 in all 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.

The Local government industry had an LQ of 1.28 in 2015. However, local government is generally categorized as non-basic given that all local governments collect taxes from residents to provide for the services to the community, including employment. Following this practice, local government for the State of New Mexico will be considered as a non-basic industry.

The data and analysis suggest that the following industries should be considered basic industries in the State of New Mexico for 2015:

1. Mining accounted for 35,898 jobs.
2. Utilities accounted for 4,573 jobs.
3. Agriculture and related industries, 28,772 Farm employees and 5,884 Forestry, fishing, and related activities employees, accounted for 34,656 total jobs
4. Accommodation and Food services accounted for 90,601 jobs.
5. Federal government employment, including 16,917 military jobs and 29,200 federal civilian jobs, accounted for 46,117 total jobs.
6. State government accounted for 58,916 total jobs.

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 is 4.05 (1,095,949/ 270,761). This ratio suggests that the addition of each basic sector job in New Mexico would be associated 4.05 additional 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 (4.05) 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 (NM Spaceport), broke ground on June 19, 2009 and completed construction in 2015. In 2011, NM Spaceport operations commenced with preview tours and flights launched by Armadillo Aerospace conducted at the facility. In 2013, Spaceport hired a full complement of contractors necessary in the pre-operations of the spaceport. This 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://arrowheadcenter.nmsu.edu/wp-content/uploads/2015/06/spaceportbusinessplan.pdf>).

Further New Mexico economic development activities encompass the Santa Teresa Intermodal Terminal that began construction in August 2011 and was completed in May 2014. This new state-of-the-art rail facility will position New Mexico as a key inland port for the first time. Facilities will include an intermodal ramp, fueling facilities and an intermodal block swap/switching yard. It is expected that numerous transportation, logistical and support industries might also develop around this intermodal terminal.

Summary of Changes from Prior Year

This document has been revised to reflect data figures obtained from the BEA for the economic and population data. The population of New Mexico in 2015 was 2,085,109 and decreased by 0.02 percent from 2,085,567 in 2014. Per capita personal income in New Mexico rose by 3.5 percent from \$36,656 in 2014 to \$37,938 in 2015.

Tables 1 to 4 appear on pages 7-10

Table 1. United States Percent of Employment by Sectors 2011-2015					
Description	2011	2012	2013	2014	2015
By type					
Wage and salary employment	77.78	78.02	77.86	77.79	77.62
Proprietors employment	22.22	21.98	22.14	22.21	22.38
Farm proprietors employment	1.06	1.03	1.02	0.99	0.96
Nonfarm proprietors employment	21.16	20.95	21.13	21.23	21.42
By industry					
Farm employment	1.50	1.46	1.45	1.42	1.39
Nonfarm employment	98.50	98.54	98.55	98.58	98.61
Private nonfarm employment	84.72	85.08	85.36	85.66	85.92
Forestry, fishing, and related activities	0.49	0.49	0.50	0.51	0.51
Mining	0.71	0.87	0.88	0.86	0.79
Utilities	0.33	0.32	0.32	0.31	0.31
Construction	4.98	4.99	5.07	5.15	5.23
Manufacturing	7.03	7.04	7.00	6.93	6.88
Wholesale trade	3.49	3.49	3.48	3.53	3.57
Retail trade	10.19	10.10	10.08	10.07	10.07
Transportation and warehousing	3.22	3.28	3.30	3.37	3.47
Information	1.83	1.80	1.79	1.79	1.78
Finance and insurance	5.53	5.42	5.38	5.17	5.07
Real estate and rental and leasing	4.50	4.39	4.42	4.52	4.59
Professional, scientific, and technical services	6.79	6.82	6.88	6.91	6.96
Management of companies and enterprises	1.18	1.22	1.24	1.27	1.28
Administrative and waste management services	6.10	6.16	6.23	6.30	6.32
Educational services	2.34	2.34	2.37	2.41	2.45
Health care and social assistance	11.02	11.23	11.25	11.19	11.20
Arts, entertainment, and recreation	2.20	2.22	2.22	2.25	2.26
Accommodation and food services	7.00	7.08	7.18	7.28	7.38
Other services, except public administration	5.80	5.82	5.77	5.85	5.80
Government and government enterprises	13.78	13.46	13.19	12.92	12.69
Federal, civilian	1.66	1.61	1.55	1.50	1.48
Military	1.18	1.15	1.11	1.06	1.03
State and local	10.94	10.71	10.52	10.36	10.19
State government	2.99	2.93	2.88	2.84	2.79
Local government	7.96	7.77	7.64	7.52	7.40
Total employment	100.00	100.00	100.00	100.00	100.00

Source: Bureau of Economic Analysis at www.bea.gov, table CA25N and author's calculation

Table 2. New Mexico Percent of Employment by Sectors 2011-2015					
Description	2011	2012	2013	2014	2015
By type					
Wage and salary employment	78.60	78.65	78.72	78.80	78.45
Proprietors employment	21.40	21.35	21.28	21.20	21.55
Farm proprietors employment	1.94	2.01	2.00	1.97	1.94
Nonfarm proprietors employment	19.46	19.34	19.28	19.23	19.61
By industry					
Farm employment	2.56	2.66	2.72	2.60	2.63
Nonfarm employment	97.44	97.34	97.28	97.40	97.37
Private nonfarm employment	77.36	77.50	77.69	78.06	78.34
Forestry, fishing, and related activities	0.49	0.48	0.49	0.53	0.54
Mining	2.66	3.21	3.42	3.53	3.28
Utilities	0.43	0.43	0.43	0.42	0.42
Construction	5.57	5.43	5.51	5.52	5.53
Manufacturing	3.36	3.35	3.30	3.14	3.11
Wholesale trade	2.49	2.48	2.48	2.54	2.61
Retail trade	10.47	10.48	10.49	10.54	10.56
Transportation and warehousing	2.28	2.38	2.37	2.39	2.41
Information	1.55	1.54	1.49	1.45	1.46
Finance and insurance	3.34	3.29	3.24	3.20	3.16
Real estate and rental and leasing	3.73	3.58	3.58	3.63	3.69
Professional, scientific, and technical services	7.28	7.13	7.06	7.03	7.08
Management of companies and enterprises	0.52	0.51	0.51	0.52	0.53
Administrative and waste management services	5.14	5.00	5.08	5.03	4.94
Educational services	1.53	1.51	1.52	1.54	1.60
Health care and social assistance	11.42	11.54	11.51	11.54	11.83
Arts, entertainment, and recreation	2.17	2.22	2.21	2.22	2.27
Accommodation and food services	7.73	7.80	7.95	8.17	8.27
Other services, except public administration	5.18	5.12	5.05	5.11	5.07
Government and government enterprises	20.07	19.85	19.60	19.34	19.03
Federal, civilian	3.06	2.96	2.82	2.72	2.66
Military	1.70	1.70	1.71	1.62	1.54
State and local	15.31	15.18	15.07	15.00	14.82
State government	5.47	5.39	5.37	5.43	5.38
Local government	9.84	9.79	9.70	9.57	9.45
Total employment	100.00	100.00	100.00	100	100
<i>Source: Bureau of Economic Analysis at www.bea.gov, table CA25N and author's calculations</i>					

Table 3. Location Quotients for New Mexico (2011-2015)					
US Based	2010	2011	2012	2013	2014
By type					
Wage and salary employment	1.01	1.01	1.01	1.01	1.01
Proprietors employment	0.96	0.97	0.96	0.95	0.96
Farm proprietors employment	1.83	1.95	1.97	1.99	2.03
Nonfarm proprietors employment	0.92	0.92	0.91	0.91	0.92
By industry					
Farm employment	1.71	1.81	1.87	1.83	1.89
Nonfarm employment	0.99	0.99	0.99	0.99	0.99
Private nonfarm employment	0.91	0.91	0.91	0.91	0.91
Forestry, fishing, and related activities	1.01	0.97	0.98	1.04	1.06
Mining	3.77	3.70	3.89	4.12	4.14
Utilities	1.31	1.33	1.37	1.36	1.35
Construction	1.12	1.09	1.09	1.07	1.06
Manufacturing	0.48	0.48	0.47	0.45	0.45
Wholesale trade	0.71	0.71	0.71	0.72	0.73
Retail trade	1.03	1.04	1.04	1.05	1.05
Transportation and warehousing	0.71	0.72	0.72	0.71	0.69
Information	0.85	0.86	0.83	0.81	0.82
Finance and insurance	0.60	0.61	0.60	0.62	0.62
Real estate and rental and leasing	0.83	0.82	0.81	0.80	0.80
Professional, scientific, and technical services	1.07	1.05	1.03	1.02	1.02
Management of companies and enterprises	0.44	0.42	0.41	0.41	0.41
Administrative and waste management services	0.84	0.81	0.81	0.80	0.78
Educational services	0.65	0.65	0.64	0.64	0.65
Health care and social assistance	1.04	1.03	1.02	1.03	1.06
Arts, entertainment, and recreation	0.99	1.00	0.99	0.99	1.01
Accommodation and food services	1.10	1.10	1.11	1.12	1.12
Other services, except public administration	0.89	0.88	0.88	0.87	0.87
Government and government enterprises	1.46	1.47	1.49	1.50	1.50
Federal, civilian	1.85	1.85	1.82	1.81	1.80
Military	1.44	1.48	1.53	1.53	1.50
State and local	1.40	1.42	1.43	1.45	1.45
State government	1.83	1.84	1.86	1.91	1.93
Local government	1.24	1.26	1.27	1.27	1.28
Total employment	1.00	1.00	1.00	1.00	1.00
<i>Source: Author's Calculations based on Table 1 and 2</i>					

Table 4: New Mexico Employment by Industry 2011-2015

Number of jobs by industry	2011	2012	2013	2014	2015
By type					
Wage and salary employment	837,281	839,789	846,896	852,861	859,738
Proprietors employment	228,010	227,968	228,971	229,416	236,211
Farm proprietors employment	20,715	21,436	21,547	21,322	21,311
Nonfarm proprietors employment	207,295	206,532	207,424	208,094	214,900
By industry					
Farm employment	27,323	28,370	29,218	28,111	28,772
Nonfarm employment	1,037,968	1,039,387	1,046,649	1,054,166	1,067,177
Private nonfarm employment	824,157	827,488	835,812	844,809	858,620
Forestry, fishing, and related activities	5,237	5,138	5,247	5,682	5,884
Mining	28,362	34,232	36,831	38,198	35,898
Utilities	4,554	4,583	4,667	4,591	4,573
Construction	59,382	58,032	59,248	59,713	60,555
Manufacturing	35,750	35,771	35,469	34,032	34,076
Wholesale trade	26,513	26,486	26,694	27,496	28,567
Retail trade	111,583	111,908	112,808	114,086	115,724
Transportation and warehousing	24,333	25,361	25,505	25,846	26,447
Information	16,508	16,473	16,059	15,723	16,006
Finance and insurance	35,632	35,138	34,903	34,602	34,612
Real estate and rental and leasing	39,760	38,275	38,513	39,253	40,479
Professional, scientific, and technical services	77,591	76,152	75,940	76,094	77,546
Management of companies and enterprises	5,491	5,449	5,503	5,632	5,814
Administrative and waste management services	54,746	53,440	54,622	54,418	54,184
Educational services	16,280	16,152	16,404	16,716	17,553
Health care and social assistance	121,675	123,264	123,782	124,943	129,672
Arts, entertainment, and recreation	23,142	23,722	23,743	24,052	24,885
Accommodation and food services	82,391	83,232	85,532	88,375	90,601
Other services, except public administration	55,227	54,680	54,342	55,357	55,544
Government and government enterprises	213,811	211,899	210,837	209,357	208,557
Federal, civilian	32,611	31,631	30,389	29,462	29,200
Military	18,057	18,178	18,350	17,518	16,917
State and local	163,143	162,090	162,098	162,377	162,440
State government	58,306	57,523	57,763	58,753	58,916
Local government	104,837	104,567	104,335	103,624	103,524
Total employment	1,065,291	1,067,757	1,075,867	1,082,277	1,095,949

Source: Bureau of Economic Analysis at www.bea.gov, table CA25N