

ECONOMY OF TUCSON AND SOUTH TUCSON



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Center for Competitiveness and Prosperity Research
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W. P. Carey School of Business
Arizona State University
Tempe, Arizona



ARIZONA DEPARTMENT OF COMMERCE



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ECONOMY OF TUCSON AND SOUTH TUCSON (ZIP CODES 85641, 85701-34, 85740-41, 85744-51, 85754, 85757, 85775 AND 85777)

A variety of activities drive the Tucson-South Tucson economy. Aerospace manufacturing, tourism, call centers, military operations, the University of Arizona, and software development are among the most important. By a wide margin, government provides the most employment of any sector in Tucson-South Tucson.

Zip codes 85641, 85701-34, 85740-41, 85744-51, 85754, 85757, 85775 and 85777 include Tucson, South Tucson, and a dozen Census Designated Places (CDPs). The two cities have to be combined because the city of South Tucson entirely is in zip code 85713, which consists primarily of Tucson. The 1,360-square-mile land area of the zip codes is more extensive than the combined 396 square miles of the city of Tucson (195 square miles), city of South Tucson (1 square mile), and the CDPs. The 2000 decennial census count of 700,178 residents in these zip codes was 3 percent more than the 679,424 combined population of the city of Tucson (486,699 residents), city of South Tucson (5,490 residents), and the CDPs. The 2004 population of Tucson and South Tucson, as defined by these zip codes, is estimated at 756,385.

THE ECONOMY IN 2004

Total Employment

Total employment in Tucson and South Tucson is estimated to have been approximately 358,950 in 2004. Total employment was 475 per 1,000 residents — 1 percent less than the national average but 11 percent more than the Arizona average, and the 12th highest of the 83 incorporated cities and towns in Arizona. Excess employment was 35,475 relative to the Arizona average.

The relatively high per capita figure resulted from considerably more jobs being located in Tucson and South Tucson (in 2001) than the 318,925 employed residents counted in the 2000 census. Many residents of surrounding communities, such as Oro Valley and Marana, commuted into Tucson to work.

Agriculture and Government

Agriculture largely is a basic activity that includes agricultural support activities as well as farming and ranching. Agriculture employment in the Tucson-South Tucson zip codes in 2004 is estimated to have been around 525. Agriculture's employment per capita was nearly 90 percent less than the national and state averages.

The government sector represents a mix of basic and nonbasic activities. Most federal government employment (both civilian and military) is basic to both the community and the state. State government employment may be basic to the community, but is not basic to the state. Similarly, county government and community college employment may be basic to the community (for example, a portion of the employment at the county seat is basic in that some workers serve other communities in the county), but not to the county or the state. Other local government — municipal, tribal, school district and special district — only rarely is basic to a community.

Government employment in Tucson and South Tucson in 2004 was approximately 75,300, by far the highest employment of the 20 sectors. Government employment per 1,000 residents was a high 100 in Tucson-South Tucson — 24 to 38 percent higher than the state and

national averages. Excess employment was about 14,350 relative to the national average and 20,625 calculated against the Arizona average.

The University of Arizona was the largest single employer, with a workforce of around 18,625 (including student workers). School districts employed about 15,725, with the Tucson Unified School District employing nearly 8,700 and the Sunnyside district around 2,550.

Federal government employment was approximately 17,725. More than half were military personnel. Most of these were stationed at Davis-Monthan Air Force Base, but the Air National Guard also had a substantial number of military employees. Civilian employment associated with the military operations also was substantial, with around 4,000 working at Davis-Monthan or for the Air National Guard. Other sizable federal employers included the post office and Customs/Border Patrol.

County government employment was substantial since Tucson is the Pima County seat. The city of Tucson employed more than 6,000. Each of these public-sector organizations was among the larger employers in Tucson and South Tucson.

Nonagriculture Private-Sector Economy

Nonagriculture private-sector employment in Tucson and South Tucson was 283,100 in 2004. Among those not included in this number are the 900 employees of Union Pacific Railroad. Employment was 374 per 1,000 residents — 4 percent less than the national average but 7 percent above the state average and the 12th highest figure among Arizona's cities and towns. Excess employment was 18,825 relative to the state average.

Employment estimates for 2004 for the broad sectors of the Tucson and South Tucson economy are shown in Table 1. Other than government, the health care and social assistance, and retail trade sectors employed the most. Per capita employment was above the national average in nine of 20 sectors, with the highest figures in utilities and construction (see the "location quotient relative to nation" column of the table). In contrast, the location quotient was less than 0.5 in only three of the 20 sectors.

In addition to government, construction and accommodation and food services employed considerably more than if per capita employment in the sectors had been equal to the national per capita average (see the "excess employment relative to nation" column of the table). The other sectors with excess employment were health care and social assistance, retail trade, administrative support, real estate and rental, utilities, and arts, entertainment and recreation. While some of the excess employment in these sectors was basic, Tucson and South Tucson did not have excess employment relative to the U.S. average in several of the traditional largely basic sectors: agriculture, mining, manufacturing, wholesale trade, and transportation and warehousing.

More sectorally detailed data show that 17 industries provided excess employment of at least 1,000 in Tucson and South Tucson in 2004, 10 of which have at least a moderate basic component (see Table 2). Providing by far the most excess employment at more than 11,000 was the guided missile and space vehicle industry. Two establishments in this industry were among the 16 that had at least 1,000 employees in 2004, according to the Census Bureau. Local sources indicate that Raytheon employs around 10,000. A second manufacturing industry on the list was aircraft parts and auxiliary equipment. This industry included an establishment of more than 1,000 workers (Bombardier Aerospace). The other industry classified in manufacturing is smelting and refining of copper, which consisted of one establishment that employed more than 1,000.

TABLE 1
WAGE AND SALARY EMPLOYMENT BY SECTOR
Tucson and South Tucson (Zip Codes 85641, 85701-34, 85740-41, 85744-51, 85754, 85757, 85775 and 85777), 2004

Sector	Number of Establishments Employment		Relative to Nation		Relative to Arizona	
			Location Quotient	Excess Employment	Location Quotient	Excess Employment
TOTAL	17,808	358,938	0.99	0	1.11	35,463
AGRICULTURE	113	527	0.11	0	0.12	0
GOVERNMENT	24	75,302	1.24	14,341	1.38	20,613
TOTAL, NONAGRICULTURE PRIVATE SECTOR	17,671	283,109	0.96	0	1.07	18,831
Mining	17	242	0.20	0	0.23	0
Utilities	14	2,698	1.65	1,063	1.99	1,346
Construction	1,681	24,142	1.41	7,018	1.01	215
Manufacturing	691	27,637	0.78	0	1.28	5,964
Wholesale Trade	746	7,516	0.49	0	0.63	0
Retail Trade	2,590	41,688	1.05	2,144	1.09	3,427
Transportation and Warehousing	314	5,347	0.51	0	0.57	0
Information	297	7,054	0.79	0	1.07	474
Finance and Insurance	1,121	9,534	0.57	0	0.61	0
Real Estate and Rental and Leasing	1,119	6,446	1.20	1,073	1.13	763
Professional, Scientific and Technical Services	2,209	16,903	0.87	0	1.12	1,833
Management of Companies and Enterprises	100	6,642	0.91	0	0.87	0
Administrative, Support, Waste Management, Remediation Services	976	24,227	1.08	1,796	0.96	0
Educational Services	256	4,579	0.61	0	0.98	0
Health Care and Social Assistance	2,152	45,595	1.12	4,857	1.46	14,265
Arts, Entertainment and Recreation	241	5,625	1.16	759	1.01	65
Accommodation and Food Services	1,495	34,126	1.23	6,435	1.18	5,291
Other Services (except public administration)	1,572	13,047	0.94	0	1.24	2,509
Unclassified Establishments	80	62	0.44	0	0.71	0

Source: Nonagriculture private sector estimated from U.S. Department of Commerce, Census Bureau, *Zip Business Patterns 2004*. Agricultural production employees, most government employees, railroad employees, self-employed individuals and employees of private households are not included in this data source. The agriculture and government sectors are estimated — see Chapter I for details. The concept of establishment for agriculture and government differs from that used for the nonagriculture private sector.

TABLE 2
NONAGRICULTURE PRIVATE-SECTOR INDUSTRIES WITH EXCESS WAGE AND SALARY EMPLOYMENT OF AT LEAST 1,000*
Tucson and South Tucson (Zip Codes 85641, 85701-34, 85740-41, 85744-51, 85754, 85757, 85775 and 85777), 2004

Industry	Number of Establishments Employment		Relative to Nation		Relative to Arizona	
			Location Quotient	Excess Employment	Location Quotient	Excess Employment
Guided missile & space vehicle manufacturing	4	11,189	91.37	11,067	7.09	9,612
Hotels (except casino hotels) & motels	116	6,337	1.75	2,713	1.18	945
Telemarketing bureaus	16	3,452	4.04	2,597	1.83	1,565
General medical & surgical hospitals	8	14,937	1.19	2,356	1.62	5,733
Engineering services	170	4,504	2.04	2,293	2.23	2,488
Fossil fuel electric power generation	2	2,049	10.24	1,849	3.72	1,499
Drywall and insulation contractors	60	2,498	3.30	1,741	1.45	775
Limited-service restaurants	535	10,047	1.19	1,637	1.21	1,750
Full-service restaurants	501	12,558	1.14	1,576	1.12	1,353
All other travel arrangement & reservation services	7	1,814	7.19	1,561	3.48	1,292
Other aircraft part & auxiliary equipment manufacturing	5	1,597	6.98	1,369	3.70	1,165
Software publishers	31	2,147	2.54	1,301	3.19	1,474
Vocational rehabilitation services	32	1,931	2.33	1,102	4.00	1,448
Primary smelting & refining of copper	1	1,061	195.58	1,056	7.73	924
Framing contractors	36	1,432	3.43	1,014	0.85	0
Telephone answering services	4	1,165	7.51	1,010	5.05	934
Offices of physicians (except mental health specialists)	671	5,960	1.15	786	1.49	1,967

* Relative to either the national or Arizona average

Note: Those entries in bold with a gray background have a high proportion of sales to customers outside the region and are considered basic (export) economic activities. Those not in bold with a gray background have a moderate proportion of sales to non-residents. Other industries largely serve local residents.

Source: Estimated from U.S. Department of Commerce, Census Bureau, *Zip Business Patterns 2004*. Agricultural production employees, most government employees, railroad employees, self-employed individuals and employees of private households are not included in this data source.

Tourism is represented on the list by four industries. The hotels and motels industry had the second-most excess employment. Since some of the sales at restaurants are made to tourists and seasonal residents, these industries are partially basic. Two restaurants industries are shown in Table 2. These three industries accounted for most of the excess employment in the accommodation and food services sector.

The other tourism industry is travel arrangement and reservation services, which included an employer of more than 1,000. This industry is part of the administrative support sector. Two call centers industries — telemarketing bureaus and telephone answering services — also are in this sector. A telemarketing bureau employed more than 1,000 in 2004 (probably Afni). These three industries largely accounted for the excess employment in the administrative support sector.

The other industry with substantial excess basic employment was software publishers, part of the information sector, which overall did not have excess employment in 2004. One software establishment employed more than 1,000 in 2004 (Intuit).

The other industries in Table 2 largely serve the local market. Two are in the construction sector, which had excess employment of a little more than 7,000 relative to the national average. Generally, little of the construction sector can be considered basic. Three industries from the health care and social assistance sector, which had excess employment of around 4,850 in 2004, are listed. This is another economic activity that generally has little of a basic component. The hospitals industry was the major employer in this sector in 2004, with six hospitals having more than 1,000 employees, including University Medical Center, Carondelet Health, TMC Healthcare, Southern Arizona Veterans Administration, and the Northwest Medical Center.

The fossil fuels electric power generation industry accounted for the excess in the utilities sector. Tucson Electric Power is one of the community's larger employers, with more than 1,000 workers currently. This is not considered to have much of a basic component in Tucson since it largely serves the Tucson area. Other major employers included an engineering services firm and a corporate or regional managing office. Depending on the nature of the business, these activities may have an export component.

A variety of basic activities drive the Tucson and South Tucson economy. Some manufacturing activities (most notably aerospace), tourism, call centers, and software are among the most important. Military operations and the University of Arizona are important public-sector contributors.

Tucson-South Tucson v. Comparison Cities

Employment per 1,000 residents in Tucson and South Tucson in 2004 — both overall and in the nonagriculture private sector — was 13 percent more than the regional average, the highest in the region. Of the region's nine geographic areas, this major population center was the only one to exceed the regional average.

Average nonfarm private-sector payroll per employee in Tucson and South Tucson in 2004 was \$29,200 — 19 percent less than the national average, 9 percent less than the Arizona average, but 1 percent more than the regional average. Tucson and South Tucson's figure was second in the region, below Oro Valley.

In most sectors, location quotients in Tucson and South Tucson were average or below average among the region's nine cities. Tucson and South Tucson ranked second in government, utilities, and transportation and warehousing, but with location quotients well below 1 in the two

latter sectors. Its high location quotient in accommodation and food services was less than the figures in Jerome and Sedona.

Five comparison areas were selected, independent of region. Cities and towns of similar size (between 50 percent and 150 percent of the 2004 estimated population of Tucson and South Tucson) located nearby (within 50 miles) generally were selected. These comparison areas were supplemented as necessary with larger nearby cities and towns, smaller nearby cities and towns, and similarly sized cities and towns more than 50 miles away. The magnitude of the difference in city size, distance, and industrial mix also was considered.

Per capita employment in Tucson and South Tucson was the fifth highest of the six cities in this comparison group, greater than in Chino Valley and the unincorporated area. Per capita nonagriculture private-sector employment in Tucson and South Tucson was in the middle of the group, less than in Cottonwood and Williams and about the same as Parker. Though low from a state and national perspective, payroll per employee in Tucson and South Tucson was similar to that of most of the comparison cities.

Some of the export sectors are shown in Chart 1. Tucson and South Tucson's location quotient was in the middle (ranked third or fourth) in each of these sectors. Except in accommodation and food services, export activities are rare in this group of cities.

CHANGES IN THE ECONOMY BETWEEN 2001 AND 2004

Between 2001 and 2004, Tucson and South Tucson's employment rose around 13,325 (4 percent). Employment per 1,000 residents slipped, but the location quotients relative to the national and state averages went up a little.

Tucson and South Tucson experienced an increase of 4 percent in nonfarm private-sector employment between 2001 and 2004, similar to the regional and Arizona averages of 5 percent, and higher than the barely positive national change. The location quotient relative to the U.S. average rose 0.02 between 2001 and 2004 in Tucson and South Tucson, the same as the regional average. In contrast, the state's location quotient dropped marginally.

The town's employment growth was accompanied by an increase in inflation-adjusted payroll per employee. The 8 percent rise was above the regional average of 7 percent, and the decreases in the state and national figures.

Several sectors experienced a change in excess employment between 2001 and 2004, though the utilities sector was the only one with much of a change in location quotient (see Table 3). The increase in health care and social assistance largely resulted from the general hospitals and specialty hospitals industries. The electric power generation industry accounted for the gain in utilities. The large loss in the administrative support industry resulted from declines in several industries, especially temporary help, but also telephone answering services and repossession services.

CHART 1 LOCATION QUOTIENTS IN 2004 Selected Sectors in Tucson-South Tucson and Comparison Cities

Source: Estimated from U.S. Department of Commerce, Census Bureau, *Zip Business Patterns 2004*. The agriculture sector was separately estimated — see Chapter I for details.

TABLE 3
2001-TO-2004 CHANGE IN WAGE AND SALARY EMPLOYMENT BY SECTOR
Tucson and South Tucson (Zip Codes 85641, 85701-34, 85740-41, 85744-51, 85754, 85757, 85775 and 85777)

Sector	Number of		Relative to Nation		Relative to Arizona	
	Establishments	Employment	Location Quotient	Excess Employment	Location Quotient	Excess Employment
TOTAL, NONFARM PRIVATE SECTOR	637	10,344	0.01	0	0.03	7,928
Forestry, Fishing and Hunting, and Agricultural Support Services	-2	-6	-0.01	0	-0.02	0
Mining	-11	97	0.08	0	0.13	0
Utilities	1	1,280	0.79	1,063	0.95	1,287
Construction	58	2,423	0.08	1,644	0.05	215
Manufacturing	3	-2,795	0.02	0	0.11	1,751
Wholesale Trade	-45	-288	-0.01	0	-0.02	0
Retail Trade	-16	1,887	-0.01	-167	-0.02	-491
Transportation and Warehousing	23	1,178	0.06	0	0.15	0
Information	-20	-404	0.00	0	0.12	474
Finance and Insurance	119	741	0.01	0	0.03	0
Real Estate and Rental and Leasing	147	86	-0.05	-218	0.00	22
Professional, Scientific and Technical Services	177	1,833	0.03	0	0.17	1,833
Management of Companies and Enterprises	6	1,488	0.20	0	-0.04	0
Administrative, Support, Waste Management, Remediation Services	-20	-4,536	-0.18	-4,152	-0.16	-3,149
Educational Services	10	376	-0.02	0	-0.17	-544
Health Care and Social Assistance	283	6,029	0.04	1,886	-0.01	1,739
Arts, Entertainment and Recreation	28	493	0.01	109	-0.07	-340
Accommodation and Food Services	112	2,731	-0.02	148	0.05	1,663
Other Services (except public administration)	-54	513	0.01	0	0.09	883
Unclassified Establishments	-128	-146	-0.35	0	-0.23	0

Source: Nonagriculture private sector estimated from U.S. Department of Commerce, Census Bureau, *Zip Business Patterns 2004* and *2001*. Agricultural production employees, most government employees, railroad employees, self-employed individuals and employees of private households are not included in this data source. The agriculture and government sectors are estimated — see Chapter I for details. The concept of establishment for agriculture and government differs from that used for the nonagriculture private sector.