



# Tucson Economic Blueprint Strategic Analysis Report

## Section 2: Regional Economic Overview

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Prepared for TREO

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## I. Overview

This section presents a supporting analysis of major economic growth trends in Tucson and Pima County. It begins with a picture of long-term economic growth trends in the region. This outlook is The big news in the UA's most recent forecast report is the 30-year population growth projection, which expects Arizona to move from being the 17<sup>th</sup> most populous state to the 5<sup>th</sup> most populous by the year 2036. By 2036, Arizona is expected to have a population of 14.6 million people, which will represent 3.6% of the nation's total population in 2036 versus 2.0% today.

The Tucson region, which just reached the 1 million population mark, is expected to have a population base of 1.75 million by 2036. Phoenix, according to the UA forecast, will see its population top 10 million in 30 years.

This rapid population growth raises many challenges and opportunities for both Tucson and Arizona. One major challenge, addressed in the Economic Blueprint, is to ensure that the region develops high quality, high income jobs to accompany the population explosion.

The UA economic report captures this important issue:

“During the next 30 years, Arizona will add another 8.5 million residents to the 6 million-plus who already call Arizona home. That will boost Arizona's population to more than today's Illinois, the fifth largest state. Arizona's growth is multi-faceted and unique, comparable only to Florida and Nevada; all three are long-standing high-growth states. The challenge to plan for and accommodate the tremendous growth yet to come has never been greater. It is in this sense that Arizona likely will continue to be 'overpopulated,' and its economy and infrastructure 'underdeveloped.’”

Based in large part upon the 3<sup>rd</sup> Quarter 2006 economic forecast prepared by the University of Arizona's Economic and Business Research Center (UA-EBRC).

*The Economic Blueprint must prepare the Tucson region to grow a future economic base that can support its 1.75 million residents in 2036.*

## II. State of Arizona Economic Forecast

The most recent UA economic forecast projects Arizona adding 3.7 million new jobs over the next thirty years (2006-2036), raising its total to 6.3 million jobs. Growth leaders, or industry sectors growing more rapidly than the overall state economic growth rate, are expected to include professional & business services; health care & social services; transportation & warehousing; leisure & hospitality; and trade. Industry sectors growing more slowly than average are expected to include government, utilities, mining, manufacturing, construction, other services, information and financial activities.

Arizona's traditional goods-producing sectors (mining, manufacturing and construction) are expected to account for a diminishing portion of jobs, continuing a long downward slide. This downturn is consistent with national trends in these sectors.

During the 1976-2006-period, statewide employment grew at a very brisk 4.2% average annual rate. Over the next thirty years (2006-2036), statewide employment will continue to grow at favorable rate of 3% average annual rate, which is a good bit slower than its growth rate over the past thirty years.

Arizona job growth has been robust in recent years, recently being ranked No. 1 in the nation for year-to-year improvement. The state

added 121,200 non-farm payroll jobs from October 2005 through last month for a 12-month growth rate of 4.73 percent.

State manufacturing employment growth is expected to slow considerably over the next six years, as it drops from a 2.1% annual growth rate in 2006 to 0.5% or less through the year 2012. Through 2012, the state is expected to add only 6,500 net new manufacturing jobs. Arizona's manufacturing employment growth is expected to be higher than the nation in the future, but down considerably from its earlier rate of increase.

### **III. Tucson Regional Economic Forecast**

The UA economic forecast foresees total non-farm employment growing more slowly in the Tucson region (Pima County) during the 2005-2012-period. These jobs are expected to slow from a 3% growth rate in 2005 to 2.3% in 2007 and slow even more to 1.8% in 2012.

In 2005, the region had 371,000 non-farm jobs. This number is expected to increase to 393,100 in 2007 and then continue to climb to 435,200 in 2012.

Manufacturing employment growth in the region is forecast to pick up from its -0.6% growth rate in 2005 to 3.1% in 2007 and then slow to 1.8% in 2012. This rate is ahead of the state's expected 0.5% or lower growth in manufacturing. Manufacturing employment in the Tucson region was estimated at 28,300 in 2005. It is expected to increase slightly to 30,000 in 2007 and 31,100 in 2012.

The region's two largest manufacturing industries, Computer and Electronic Products and Aerospace Products and Parts, are expected to remain very important to the regional economy. Computer and Electronic Products is expected to decline in employment from 4,800 in 2005 to 3,800 in 2012. Meanwhile, Aerospace Products and Parts employment is expected to grow

from 11,200 in 2005 to 13,000 in 2012. In 2005, Aerospace Products and Parts represented 39.5% of the region's total manufacturing jobs. In 2012, it is expected to represent 41.8% of the region's total manufacturing jobs. This is a significant level of concentration in both years.

Services are expected to continue to be the largest employment provider in the region over the six years, as the service-producing sector of Tucson's economy grows from 315,200 jobs in 2005 to 375,800 jobs in 2012. Trade, Transportation, and Utilities will also grow, with the biggest boost continuing to come from the Retail sector, which is expected to increase employment from 41,900 in 2005 to 50,300 in 2012. Information industries currently employ 7,300 people in the Tucson region, and is expected to employ 8,100 jobs in 2012. All the other service-based industries, including Financial Activities, Professional and Business Services, Education and Healthcare, and Leisure and Hospitality will see additional growth over the next six years. The details of this industry-based forecast are provided in Table 1 found immediately below.

**Table 1: Tucson Region Major Industry Growth Forecast**

SECTOR/INDUSTRY	2005	2006	2007	2008	2009	2010	2011	2012
	<i>Thousands</i>							
Nonfarm Employment	371.0	384.3	393.1	399.5	408.9	418.8	427.3	435.2
% change	3.0	3.6	2.3	1.6	2.4	2.4	2.0	1.8
Goods-Producing	55.8	58.3	58.5	57.4	58.0	58.8	59.2	59.4
% change	3.9	4.5	0.4	-1.8	0.9	1.4	0.6	0.3
Natural Resources and Mining	1.4	1.6	1.6	1.6	1.5	1.4	1.3	1.3
% change	9.4	9.6	1.9	-2.8	-5.0	-4.4	-4.7	-4.1
Construction	26.1	27.6	26.9	25.6	25.8	26.7	27.0	27.0
% change	8.8	5.7	-2.6	-4.9	1.0	3.2	1.5	-0.3
Manufacturing	28.3	29.1	30.0	30.3	30.7	30.8	30.8	31.1
% change	-0.6	3.1	3.1	0.9	1.2	0.2	0.2	1.1
Computer and Electronic Products	4.8	4.7	4.3	4.2	4.3	4.1	3.9	3.8
% change	-4.8	-2.0	-9.3	-2.4	2.1	-3.1	-5.1	-3.5
Aerospace Products and Parts	11.2	11.7	12.0	12.2	12.4	12.6	12.8	13.0
% change	-0.7	3.8	3.0	1.7	1.6	1.6	1.6	1.6
Service Providing	315.2	326.0	334.6	342.0	350.9	360.0	368.1	375.8
% change	2.9	3.4	2.6	2.2	2.6	2.6	2.3	2.1
Trade, Transportation and Utilities	59.4	61.4	62.7	64.3	66.1	67.8	69.2	70.5
% change	2.5	3.5	2.2	2.4	2.9	2.5	2.2	1.9
Wholesale Trade	8.4	8.7	8.8	9.0	9.1	9.2	9.4	9.5
% change	4.0	3.6	2.1	1.5	1.2	1.5	1.5	1.1
Retail Trade	41.9	43.6	44.5	45.6	47.0	48.3	49.4	50.3
% change	1.1	3.9	2.1	2.5	3.2	2.7	2.2	1.9
Information	7.3	7.1	7.2	7.3	7.6	7.8	8.0	8.1
% change	-4.1	-2.1	1.1	2.0	4.3	2.6	1.6	2.1
Financial Activities	16.7	17.6	17.9	18.0	18.7	19.6	20.2	20.7
% change	4.7	5.3	1.8	0.8	3.9	4.6	3.3	2.3
Professional and Business Services	45.6	47.4	50.1	51.3	52.3	54.0	55.7	57.1
% change	5.0	4.0	5.6	2.4	2.0	3.2	3.1	2.5
Education and Health Services	50.3	52.9	54.4	55.9	57.4	58.8	60.2	61.8
% change	5.3	5.1	2.8	2.8	2.8	2.4	2.4	2.6
Leisure and Hospitality	40.2	42.0	43.1	44.5	46.1	47.5	48.9	50.1
% change	2.8	4.5	2.7	3.1	3.6	3.1	2.8	2.5
Government	81.1	82.6	83.7	84.9	86.2	87.6	88.6	89.6
% change	1.5	1.8	1.3	1.4	1.6	1.6	1.1	1.2
Federal	10.2	10.5	10.7	10.9	11.1	11.5	11.6	11.8
% change	4.2	3.2	2.1	1.9	2.2	3.3	0.5	1.9
State and Local	70.9	72.1	73.0	74.0	75.1	76.1	77.0	77.8
% change	1.1	1.6	1.2	1.3	1.5	1.3	1.2	1.1

Source: University of Arizona Economic & Business Research Center, 3<sup>rd</sup> Quarter 2006 Economic Forecast

## IV. Population Growth Trends

As mentioned earlier, the most recent forecast report expects Arizona to move from being the 17<sup>th</sup> most populous state to the 5<sup>th</sup> most populous by the year 2036. By 2036, Arizona is expected to have a population of 14.6 million people, which will represent 3.6% of the nation's total population in 2036 versus 2.0% today.

The Tucson region, which just reached the 1 million population mark, is expected to have a population base of 1.75 million by 2036. Phoenix, according to the UA forecast, will see its population top 10 million in 30 years. Table 2 below provides an overview of general population growth trends over the past 15 years for Tucson and Arizona.

**Table 2: Population Growth Trends, 1970-2005**

Population Over Time	Tucson Region		Arizona			
	Year	Number	Percent of U.S.	Percent of AZ	Number	Percent of U.S.
2005		924,786	0.31%	15.57	5,939,292	2.00%
2000		843,746	0.30%	16.45	5,130,632	1.82%
1990		666,957	0.27%	18.20	3,665,339	1.47%
1980		531,443	0.23%	19.56	2,716,546	1.20%
1970		351,667	0.17%	19.81	1,775,399	0.87%
1990 to 2000 % change		26.50%			40.00%	
1980 to 2000 % change		58.80%			88.90%	
1970 to 2000 % change		139.90%			189.00%	

Source: DTIA analysis, US Census data.

The Tucson region's total population grew from 351,667 in 1970 to 843,746 in 2000. Since 1980, it has grown to 924,786, according to the official Census estimates. Tucson's share of the state's population has actually decreased from 19.8% to 15.6% between 1970 and 2005. Yet, Tucson's population accounts for a higher percent of the U.S. population total; going from 0.17% to 0.31% over the 1970-2005-period.

## V. Per Capita Personal Income Trends

Since 1974, Tucson's per capita personal income (PCPI) has grown from \$19,760 to \$27,244 in real dollar terms. Quite importantly, Tucson's PCPI dropped from 90.4% of the U.S.

average in 1974 to 82.4% in 2004. Arizona suffered a similar drop in its PCPI level of the 30-year-period.

*Tucson's PCPI level has lagged the state level consistently over the 30-year-period. The region's PCPI performance indicates a definite need for TREO and its partners to give even greater attention to developing more high wage jobs in the region in the future. This is perhaps one of the most important indications that Tucson needs this Blueprint to increase broad-based prosperity across the region.*

**Table 3: Per Capita Personal Income Trends, 1974-2004**

Per Capita Personal Income	Tucson Region			Arizona		
	Number	Rank in U.S.	Percent of U.S.	Number	Rank in U.S.	Percent of U.S.
Measure						
Per capita income - 2004	\$27,244	1109	82.40%	\$28,658	47	86.70%
Per capita income - 1994 (adj. for inflation)	\$23,968	1007	84.80%	\$24,488	46	86.60%
Per capita income - 1984 (adj. for inflation)	\$22,228	913	88.00%	\$23,428	36	92.80%
Per capita income - 1974 (adj. for inflation)	\$19,760	1052	90.40%	\$20,350	38	93.10%
10-year change %	13.70%	1750		17.00%	35	
20-year change %	22.60%	2089		22.30%	55	
30-year change %	37.90%	1963		40.80%	49	

Source: DTIA analysis and US Census data

## VI. Poverty Trends

The region's poverty rate for all persons has dropped from 15.9% of the population in 1998 to 14.3% in 2003. While the rate for children under 18 years of age has also declined, this rate has remained higher than that for the population as a whole.

**Table 4: Poverty Trends in Tucson Region, 1998-2003**

Poverty Estimates	Number	Rank in U.S.	5-Year % Change	Rank in % Change
Poverty rate in 2003	14.3	1140	--	--
In 1998	15.9	1092	-10.1%	1849
Poverty rate for children under 18 in 2003	21.7	1027	--	--
In 1998	24.4	822	-11.1%	2066

Source: DTIA analysis, US Census data

## VII. Labor Market Trends for Tucson Region

Workforce issues are critically important to the region's future economic development. Workforce development, also as known as human capital development, was one of the top ranking issues identified in the SWOT survey and various personal interviews and work groups engaged to help develop the Blueprint.

In 2005, the region had a total workforce of 435,462 people. Over the past 5 years the size of the workforce increased by 6.5% and it grew by 12.3% over the past decade. A key driver for this growth is the overall population growth that has taken place in the region.

415,500 Pima County residents in 2005 workforce were employed. This number is up 5.5% compared to 5 years ago and up 11% compared to a decade ago.

The region's unemployment rate was 4.6% in 2005 compared with a statewide average of 5.1%. Just under 20,000 people were identified as unemployed in the region in 2005.

**Table 5: Tucson Regional Workforce Trends, 1995-2005**

Labor Force Annual Averages in 2005	Number
Total Labor Force	435,462
5-year % change	6.50%
10-year % change	12.30%
Employed	415,513
5-year % change	5.50%
10-year % change	11.00%
Unemployed	19,949
5-year % change	30.90%
10-year % change	47.80%
Unemployment Rate	4.6
5-year % change	24.30%
10-year % change	31.40%

Source: DTIA analysis, US Bureau of Labor Statistics data

Workforce commuting patterns are very important to the region's ability to attract a competitive workforce for economic development. At the current time, the vast major of the region's (Pima County's) jobs are held by Pima County residents. This could change over time as the Phoenix and Tucson regions merge along I-10 forming a large integrated "megapolitan" area.

In 2000, the Tucson region had 368,745 workers living in Pima County. The lion's share (97.4%) of these workers also worked in the County. Only 2.6% of this total workforce resided outside the County.

Just over 9,000 people working in Pima County live outside the County. About 2,600 of these workers live in Pinal County. The

remainder of these in-bound workers come from other surrounding counties (Cochise, San Cruz, and Graham).

Table 6 immediately below provides supporting data for the observations made above.

**Table 6: Pima County Worker Commuting Trends, 2000**

Workers Living in Pima County in 2000	Number	Rank in U.S.	Pct Dist. in County	Rank of Pct Dist.
Total	368,745	62	100.00%	
Working in County	359,296	42	97.40%	24
Working Elsewhere	9,449	658	2.60%	3118

People Working in Pima County in 2000	Number	Rank in U.S.	Pct Dist. in County	Rank of Pct Dist.
Total	368,387	67	100.00%	
Living in County	359,296	42	97.50%	12
Living Elsewhere	9,091	580	2.50%	3130

Commuting Flows in 2000	Number	Rank in U.S.	Pct Dist.
Gross Flow (Living Elsewhere + Working Elsewhere)	18,540	634	100%
Net Flow (Living Elsewhere - Working Elsewhere)	-358	1334	
Largest Single Inflow : Pinal County	2,601		14.00%
Largest Single Outflow :Pinal County	1,974		10.60%

Source: DTIA analysis, US Census data

Table 7 below provides a profile of employment, employer establishments, and wages in the Tucson region.

Since 1995, the region has added 6,380 new business establishments for a total of 18,531 in 2005. Almost 130,000 new jobs were added in the region over the same time period, increasing regional employment from 223,936 to 353,338.

Average annual wages across all industry sectors grew from \$28,937 in 1995 to \$35,650 on an inflation adjusted basis. This

represents a 23.2% growth in average wages over the period. By comparison, average annual wages statewide grew by 18.2% on an inflation adjusted basis.

While the region's wages have improved from being 79.7% of the US average wage in 1995 to 87.6% in 2005, the region's wages remain below the national average, again underscoring the importance of a high-wage job development strategy for the region in the future.

**Table 7: Tucson Regional Employment, Establishment, and Wages Profile**

Annual Covered Employment and Wages Over Time (NAICS)	Establishments	Jobs	Average Wage	Rank in	Pct of U.S.
			Per Job (*adj)	U.S.	Avg Wage
2005	18,531	353,335	\$35,650	456	87.60%
2004	17,735	339,736	\$35,164	491	86.40%
2003	17,545	327,085	\$34,918	480	87.10%
2002	17,041	325,869	\$34,384	506	86.20%
2001	16,854	326,917	\$33,844	524	84.70%
2000	16,772	328,682	\$33,085	540	82.60%
1999	16,499	317,275	\$33,065	534	84.20%
1998	16,624	308,212	\$32,073	600	83.70%
1997	16,455	295,735	\$31,136	632	82.90%
1996	16,323	289,336	\$30,791	609	85.30%
1995	12,151	223,399	\$28,937	792	79.70%
10-Year Change	6,380	129,936	\$6,713		
10-Year Percent Change	52.50%	58.20%	23.20%		

Source: DTIA analysis, US Bureau of Labor Statistics data

Table 8 below identifies the average annual wage levels for the region's major industry sectors. While average wage data was suppressed by the government for some industries for confidentiality reasons, the wage leaders in Pima County in 2005 were Utilities, Mining, and Manufacturing. Because of the great number of part-time jobs, Accommodations, and Recreational and Entertainment jobs paid the lowest wages.

**Table 8: Pima County Average Annual Wages by Major Industry**

Annual Industry Distribution of Jobs & Avg. Wage in 2005	Establishments	Jobs	Pct Dist.	Annual Average Wage
			in County	Per Job
Total Covered Employment and Wages	18,531	353,335	100.00%	\$35,650
Private	18,333	284,046	80.40%	\$34,351
Agric., forestry, hunting	50	584	0.20%	\$25,923
Mining	29	1,340	0.40%	\$53,790
Construction	2,010	D	D	D
Manufacturing	682	28,247	8.00%	\$61,557
Wholesale trade	858	8,445	2.40%	\$43,240
Retail trade	2,189	D	D	D
Transportation, warehousing	325	D	D	D
Utilities	37	2,926	0.80%	\$57,696
Information	290	7,197	2.00%	\$48,121
Finance and Insurance	980	9,679	2.70%	\$55,821
Real Estate, rental, leasing	1,025	D	D	D
Professional, technical services	2,427	D	D	D
Mgmt. of companies, enterprises	65	2,876	0.80%	\$36,885
Administrative, waste services	1,109	27,665	7.80%	\$23,075

Educational services	263	D	D	D
Health care, social assistance	1,949	D	D	D
Arts, entertainment, recreation	249	7,541	2.10%	\$22,246
Accommodation and food services	1,385	34,006	9.60%	\$14,021
Other services, exc. public admin.	1,650	D	D	D

**Table 9: Labor Market Comparisons: Tucson Versus Key Competitors, 2000-2004**

Metro Area	Civilian labor force			
	Total			Percent Change
	2004	Change, 2000-2004	2000	2000-2004
<b>Tucson, AZ</b>	<b>439,127</b>	<b>29,961</b>	<b>409,166</b>	<b>7.3</b>
Albuquerque, NM	391,796	21,567	370,229	5.8
Austin-Round Rock, TX	778,097	39,898	738,199	5.4
Denver-Aurora, CO	1,296,362	78,429	1,217,933	6.4
Las Vegas-Paradise, NV	827,958	99,671	728,287	13.7
Phoenix-Mesa-Scottsdale, AZ	1,851,316	185,661	1,665,655	11.1
Salt Lake City, UT	534,889	13,744	521,145	2.6
San Diego-Carlsbad-San Marcos, CA	1,490,333	113,684	1,376,649	8.3

The Tucson region grew its total civilian labor force by about 30,000 during the 2000-2004-period. This represented a 7.3% gain, which did not keep pace with the region's 9.6% gain in population during the same time period. In the future, it will be important for the region to close the gap between its population growth rate and its labor force growth rate. There are two approaches to close this

gap: experience a real decline in the population growth rate or to increase the workforce growth rate. The important issue in any case is that the region increase the number of quality jobs (higher paying jobs) in the future. This will be the real challenge for the region.

Compared to its key competitor metropolitan areas, Tucson had a lower growth rate in its labor force than Las Vegas, Phoenix, and San Diego. It had a higher labor force growth rate than Albuquerque, Austin, Denver and Salt Lake City.

## VIII. Educational Attainment

Educational attainment is a driving factor for attracting and developing high-skill, high-wage jobs. The SWOT analysis examines this issue in much greater detail. We have included the 2000 Census educational attainment here in the Economic Overview.

**Table 9: Educational Attainment in Pima County, 2000**

Educational Attainment: Census 2000	Number	Percent of Population 25+	Rank of % in U.S.	U.S. % of Population 25+
Total Population 25 and Older	546,200	100.0%		100.00%
Less Than 9th Grade	34,722	6.4%	1976	7.50%
9th to 12th, No Diploma	55,761	10.2%	2253	12.10%
High School Graduate (incl. equiv.)	127,343	23.3%	2982	28.60%
Some College, No Degree	145,579	26.7%	257	21.00%
Associate Degree	36,687	6.7%	907	6.30%
Bachelor's Degree	86,752	15.9%	450	15.50%
Graduate or Professional Degree	59,356	10.9%	202	8.90%

Just over 16% of Pima County's age 25 and over population had less than a high school degree education. Another 23% had a high school diploma or its equivalent. 33% of this population had either some college education and no degree or an Associates Degree. Bachelor's Degrees were held by 16% of this population group. 11% of this group had a graduate or professional degree.

Compared to the state, 15% of the state's age 25 and over population had Bachelor's degrees and 8% had a graduate or professional degree.

## IX. Real Estate Construction Market Activity

This section reviews key construction trends in the Tucson region. Five key real estate construction market segments are discussed: single-family homes, apartments, retail, office, and industrial. In each case, the Tucson region, or Pima County, is compared to the real estate construction activities across the State of Arizona.

### A. Single-Family Home Construction

**Table 10: Pima County's Share of Arizona's Single-Family Home-Building Market, 2000-2005**

Permits	Pima	Arizona	Pima Share
2000	6,061	48,846	12.4
2001	6,501	50,930	12.8
2002	6,841	55,649	12.3
2003	8,010	65,649	12.2
2004	9,583	83,253	11.5
2005	11,036	85,073	13.0
Totals	48,032	389,400	12.3
Dollar Value (000)			
2000	\$ 814,233	\$ 6,428,614	12.7
2001	\$ 946,843	\$ 7,016,116	13.5
2002	\$ 1,034,480	\$ 8,014,004	12.9
2003	\$ 1,315,600	\$ 10,034,473	13.1
2004	\$ 1,605,470	\$ 13,392,513	12.0
2005	\$ 1,935,398	\$ 14,298,532	13.5
Totals	\$ 7,652,024	\$ 59,184,252	12.9

Source: DTIA analysis, ASU Real Estate Center data

The single-family home-building market in both Pima County and Arizona are growing briskly. The single-family home-building market in Pima County has grown from \$814.2 million in 2000 to \$1.94 billion in 2005.

Since 2000, Pima County's share of Arizona's single-family home-building market has increased from 12.4% to 13.0% in terms of the number of building permits and from 12.7% to 13.5% from dollar value perspective. Over the period, Pima County's share of Arizona's total single-family home-building was 12.3% from a permits standpoint and 12.9% from a dollar value perspective.

## B. Apartment Construction

**Table 11: Pima County's Share of Arizona's Apartment Construction Market, 2000-2005**

Units	Pima	Arizona	Pima Share
2000	824	9,879	8.3
2001	811	9,925	8.2
2002	793	8,216	9.7
2003	117	6,582	1.8
2004	859	8,029	10.7
2005	170	8,168	2.1
Totals	3,574	50,799	7.0
Dollar Value (000)			
2000	\$ 49,356	\$ 579,390	8.5
2001	\$ 36,582	\$ 530,008	6.9
2002	\$ 47,456	\$ 505,419	9.4
2003	\$ 5,204	\$ 422,109	1.2
2004	\$ 58,917	\$ 528,941	11.1
2005	\$ 55,185	\$ 581,934	9.5
Totals	\$ 252,700	\$ 3,147,801	8.0

Source: DTIA analysis, ASU Real Estate Center data

The apartment construction markets in both Pima County and Arizona are growing slowly. The market grew in Pima County from just under \$50 million in 2000 to \$55.2 million in 2005. Since 2000, Pima County's share of Arizona's apartment unit building market fell from 8.3% in 2000 to only 2.1% in 2005 from a

number of unit construction standpoint, and yet its share from a dollar value standpoint increased from 8.5% to 9.5%.

## C. Retail Construction

**Table 12: Pima County's Share of Arizona's Retail Construction Market, 2000-2005**

Permits	Pima	Arizona	Pima Share
2000	64	748	8.6
2001	54	675	8.0
2002	82	816	10.0
2003	140	894	15.7
2004	152	1,063	14.3
2005	134	1,342	10.0
Totals	626	5,538	11.3
Dollar Value (000)			
2000	\$ 46,975	\$ 586,491	8.0
2001	\$ 25,845	\$ 625,574	4.1
2002	\$ 69,245	\$ 547,350	12.7
2003	\$ 69,131	\$ 575,652	12.0
2004	\$ 42,682	\$ 688,702	6.2
2005	\$ 67,115	\$ 977,782	6.9
Totals	\$ 320,993	\$ 4,001,551	8.0

Retail construction activity is growing in both the Tucson region and Arizona. The pace of retail construction is greater for Arizona than the Tucson region, as the dollar value of statewide retail construction climbed from \$586 million in 2000 to \$978 million in 2005. In Tucson, retail construction increased from \$47 million in 2000 to \$67 million in 2005. Tucson's share of the state retail construction market grew from 8% in 2001 to 12.7% in 2002 and then has dropped since then to 6.9% in 2005.

## D. Office Building Construction

**Table 13: Pima County's Share of Arizona's Office Building Construction Market, 2000-2005**

Units	Pima	Arizona	Pima Share
2000	71	542	13.1
2001	80	605	13.2
2002	123	647	19.0
2003	173	935	18.5
2004	223	1,075	20.7
2005	258	1,354	19.1
Totals	928	5,158	18.0
Dollar Value (000)			
2000	\$ 40,958	\$ 585,468	7.0
2001	\$ 32,540	\$ 593,070	5.5
2002	\$ 35,423	\$ 427,388	8.3
2003	\$ 78,331	\$ 574,785	13.6
2004	\$ 65,714	\$ 511,412	12.8
2005	\$ 108,849	\$ 875,428	12.4
Totals	\$ 361,815	\$ 3,567,551	10.1

Source: DTIA analysis, ASU Real Estate Center data

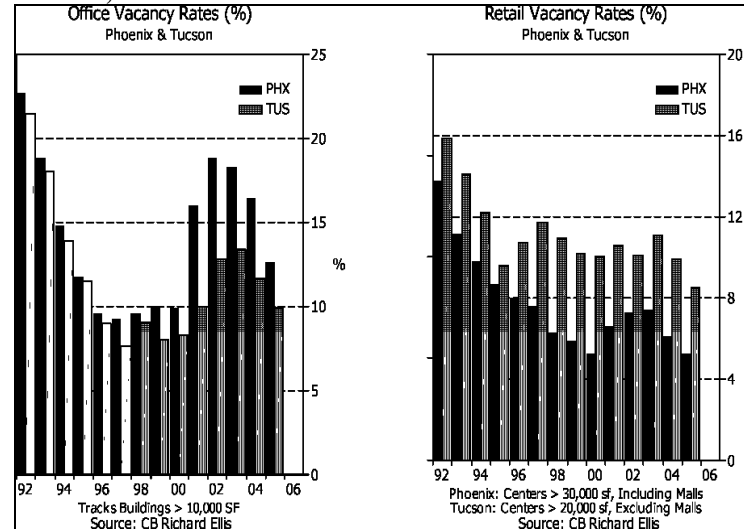
Office building construction activity has grown in both Tucson and Arizona since 2000. Arizona's office building market was \$585 million in 2000 and \$875 million in 2005. Over the 2000-2005-period, new office construction across Arizona totaled \$3.57 billion compared to \$362 million in the Tucson region over the same period. Tucson's share of the statewide office building market has grown from 7% in 2000 to 12.4% in 2005. Over the six-year period, Tucson averaged a 10.1% share of the Arizona office building construction market.

Figure 1 shows office and retail vacancy rates for the Tucson and Phoenix markets during the 1992-2006 period.

These rates were the highest in both markets during the recessionary period in the early 1990s. These rates dropped in both markets for the office sector following that recession.

For the most part, office vacancy rates have been higher in Phoenix than Tucson. Meanwhile, retail vacancies have been lower in the Phoenix market than Tucson since the end of the early 1990s recession.

**Figure 1: Office and Retail Vacancy Rates in Tucson and Phoenix, 1992-2006**



## E. Industrial Construction

Industrial construction has ebbed and flowed during the 2000-2005 period in both the Tucson region and Arizona. Over the period, Arizona put into place \$1.45 billion in new industrial construction. 5.8% (\$84 million) of that total occurred in the Tucson region. 2001 was by far the strongest industrial construction year for both Tucson and Arizona.

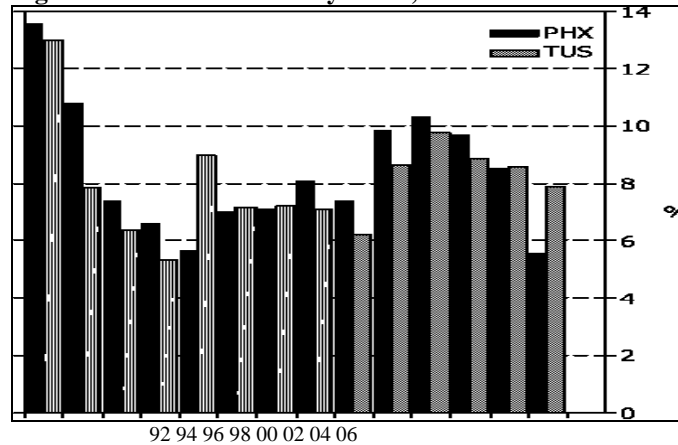
**Table 14: Pima County's Share of Arizona's Industrial Construction Market, 2000-2005**

Permits	Pima	Arizona	Pima Share
2000	17	348	4.9
2001	21	232	9.1
2002	45	224	20.1
2003	30	190	15.8
2004	56	303	18.5
2005	32	344	9.3
<b>Totals</b>	<b>201</b>	<b>1,641</b>	<b>12.2</b>
Dollar Value (000)			
2000	\$ 16,748	\$ 294,978	5.7
2001	\$ 23,526	\$ 395,720	5.9
2002	\$ 10,766	\$ 125,716	8.6
2003	\$ 8,717	\$ 131,106	6.6
2004	\$ 16,202	\$ 191,398	8.5
2005	\$ 8,546	\$ 316,815	2.7
<b>Totals</b>	<b>\$ 84,505</b>	<b>\$ 1,455,733</b>	<b>5.8</b>

Source: DTIA analysis, ASU Real Estate Center data

Figure 2 compares industrial vacancy rates for Tucson and Phoenix over the 1992-2006-period. These rates were the highest (above 12%) in recessionary period in 1992. They dropped to their lowest levels in 3 to 4 years following the end of that recession. Since then, these rates have been in the 8-10% rate in both markets.

**Figure 2: Industrial Vacancy Rates, Tucson and Phoenix**



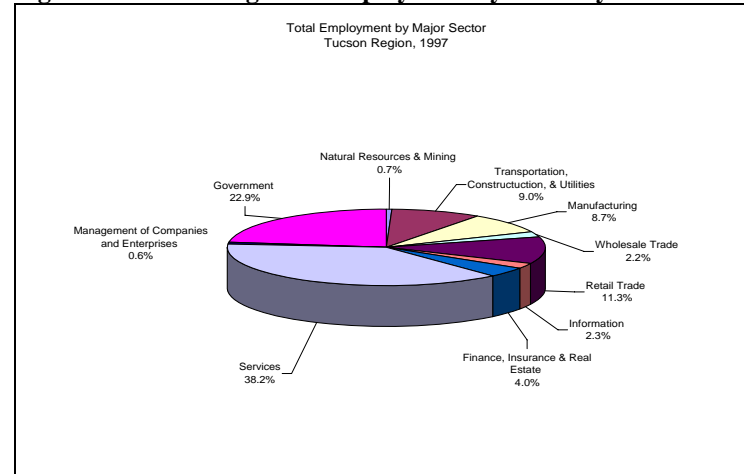
Source: CB Richard Ellis

## X. Major Industry Sector Employment Growth

The final section of the Economic Overview examines employment by industry trends between 1997 and 2006 and projections for 2006 and 2015. Figures 3, 4, and 5 below describe employment changes in the Tucson region's major industry sectors in 1997, 2006, and 2015.

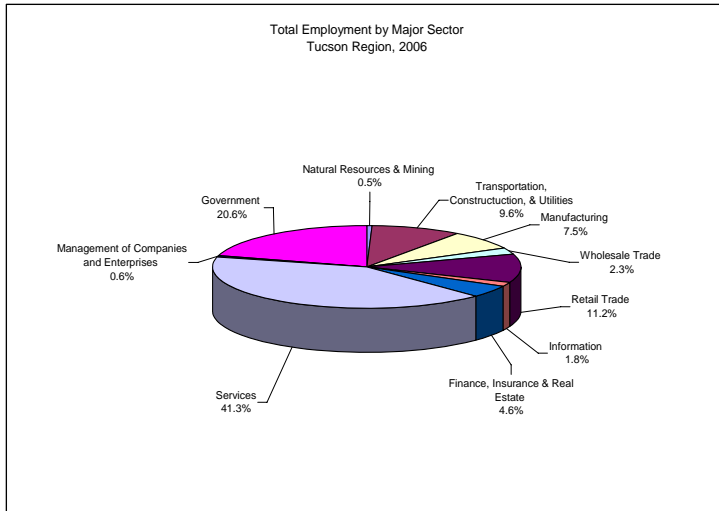
According to Economy.com data used in this analysis, total non-farm employment in the Tucson region grew from 315,457 in 1997 to 381,255 in 2006, and is expected to climb to 471,104 in 2015. These numbers compare favorably with the University of Arizona Economic and Business Research Center's most recent economic forecast, which sees total non-farm employment in the Tucson region growing from 384,000 in 2006 to 470,000 in 2016. During the 1997-2006-period, total employment increased by 65,798 (20.9% growth). Total non-farm employment is projected to increase by 89,849 (23.6% growth) during the 2006-2015-period.

**Figure 3: Tucson Regional Employment by Industry 1997**



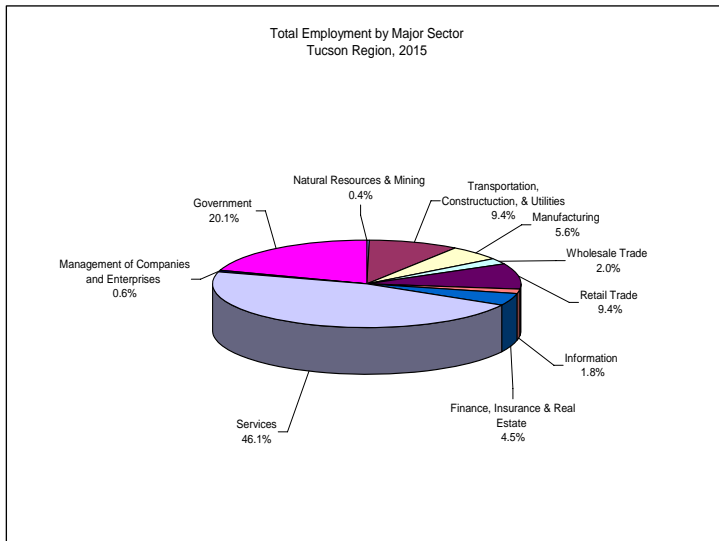
Source: DTIA analysis, Economy.com data

**Figure 4: Tucson Regional Employment by Industry 2006**



Source: DTIA analysis, Economy.com data

**Figure 5: Tucson Regional Employment by Industry 2015**



Source: DTIA analysis, Economy.com data

By comparison, Arizona's total non-farm employment grew from 1,984,309 to 2,620,665 during the 1997-2006 period (32.1% growth). Statewide total non-farm employment is expected to climb to 3,303,037 by 2015 for an increase of 26%.

Based on the percentage of the population employed, the service sector is the dominant sector of the Tucson regional economy. In 1997, it accounted for 38.2% of total employment. Today (2006) the service sector represents 41.3% of total employment. The service sector is expected to continue to grow in the future and remain the region's largest employment source with over 46% of total jobs in 2015.

Manufacturing employment, following the national trend, is expected to account for a smaller percent of the region's future jobs, dropping from 8.7% of total employment in 1997 to 7.5% in 2006, and then continuing to drop share to 5.6% in 2015.

While losing share, the region's manufacturing sector gained 1,191 jobs between 1997 and 2006. Manufacturing is expected to lose over 2,000 jobs between 2006 and 2015, according to the Economy.com forecasts used in this study.

Most of the other major industry sectors are not expected to change their shares to any great extent over the 1997-2015-period, although some changes in sectoral employment shares are expected. Retail trade's share of total employment is expected to drop by 1.9% between 1997 and 2015. Government's share is expected to decline by 2.8%. The Information sector is expected to see a 0.5% decline in its regional employment share over the 1997-2015 period.

Another important economic indicator for the Tucson region is whether the region's share of various Arizona industries is growing or declining. Tables 15 and 16 below identify those industries

where Tucson increased and decreased its share of Arizona's industries the most during the past decade.

Table 15 identifies all Tucson industries that increased their state shares by 5% or more over the past decade.

**Table 15: Tucson Industries Gaining State Share by 5% or More, 1997-2006**

NAICS	Title	Employment (Pima)		Employment (Arizona)		Percent Share		Change in Share 1997-2006
		1997	2006	1997	2006	1997	2006	
5232	Securities and Commodity Exchanges	2	10	24	19	8.6%	53.9%	45.3%
7132	Gambling Industries	10	22	573	54	1.8%	40.2%	38.4%
3341	Computer and Peripheral Equipment Manufacturing	1,652	1,934	3,474	2,752	47.6%	70.3%	22.7%
3359	Other Electrical Equipment and Component Manufacturing	198	341	1,409	995	14.1%	34.3%	20.2%
7115	Independent Artists, Writers, and Performers	46	176	445	596	10.4%	29.5%	19.0%
3346	Manufacturing and Reproducing Magnetic and Optical Media	60	93	270	245	22.2%	38.1%	15.9%
3352	Household Appliance Manufacturing	86	90	288	197	29.9%	45.6%	15.7%
6211	Monetary Authorities - Central Bank	0	23	4	107	6.2%	21.1%	14.9%
3332	Industrial Machinery Manufacturing	231	403	2,619	1,731	8.8%	23.3%	14.4%
4855	Charter Bus Industry	42	97	556	497	7.5%	19.6%	12.1%
2122	Metal Ore Mining	2,161	2,180	11,403	7,061	18.9%	30.9%	11.9%
7139	Other Amusement and Recreation Industries	1,744	4,976	18,003	23,142	9.7%	21.5%	11.8%
6243	Vocational Rehabilitation Services	607	1,499	2,879	4,575	21.1%	32.8%	11.7%
2111	Oil and Gas Extraction	1	2	2	5	26.8%	38.5%	11.6%
3331	Agriculture, Construction, and Mining Machinery Manufacturing	234	250	1,928	1,073	12.2%	23.3%	11.2%
3314	Nonferrous Metal (except Aluminum) Production and Primary Metal Industries	48	117	3,010	1,063	1.6%	11.0%	9.4%
8112	Electronic and Precision Equipment Repair and Maintenance	94	446	1,815	3,178	5.2%	14.0%	8.8%
6241	Individual and Family Services	1,974	4,146	7,722	12,097	25.6%	34.3%	8.7%
8133	Social Advocacy Organizations	160	632	826	2,271	19.4%	27.8%	8.4%
2212	Natural Gas Distribution	266	412	1,250	1,414	21.3%	29.1%	7.8%
4248	Beer, Wine, and Distilled Alcoholic Beverage Merchant Wholesalers	184	559	1,807	3,117	10.2%	17.9%	7.8%
4233	Lumber and Other Construction Materials Merchant Wholesalers	285	1,096	3,974	7,702	7.2%	14.2%	7.1%
3325	Hardware Manufacturing	332	66	850	145	39.0%	45.8%	6.8%
6417	Scientific Research and Development Services	1,373	1,744	3,399	3,707	40.4%	47.1%	6.7%
3364	Aerospace Product and Parts Manufacturing	8,188	10,795	24,510	27,008	33.4%	40.0%	6.6%
5614	Business Support Services	4,860	8,513	21,732	29,483	22.4%	28.9%	6.5%
5323	General Rental Centers	41	121	652	956	6.4%	12.7%	6.3%
2211	Electric Power Generation, Transmission and Distribution	932	1,588	7,898	8,850	11.8%	17.9%	6.2%
3333	Commercial and Service Industry Machinery Manufacturing	240	326	1,233	1,291	19.4%	25.3%	5.8%
4532	Office Supplies, Stationery, and Gift Stores	1,666	2,132	7,732	7,805	21.6%	27.3%	5.8%
6222	Psychiatric and Substance Abuse Hospitals	231	394	1,050	1,423	22.0%	27.7%	5.7%
4852	Interurban and Rural Bus Transportation	115	212	565	821	20.3%	25.9%	5.5%
3351	Electric Lighting Equipment Manufacturing	14	36	584	460	2.4%	7.8%	5.4%
2131	Support Activities for Mining	21	36	181	209	11.5%	16.8%	5.3%
3219	Other Wood Product Manufacturing	293	756	5,245	6,950	5.6%	10.9%	5.3%
4854	School and Employee Bus Transportation	59	163	232	532	25.4%	30.7%	5.3%
6244	Child Day Care Services	1,479	2,628	9,325	12,499	15.9%	21.0%	5.2%
3342	Communications Equipment Manufacturing	53	74	1,868	942	2.9%	7.8%	5.0%

Source: Economy.com data, DTIA analysis

Tucson gained share in both large and small industries. It is significant to note that Tucson gained significant share in Computers and Peripherals Mfg., Metal Ore Mining, Other Amusement and Recreation Industries, Scientific Research and Development Services, Aerospace Products and Parts Manufacturing, and Business Support Services. All are important industries for the Tucson region. This point is discussed further in the Industry Cluster Analysis Chapter of the Strategic Analysis Report. Tucson also lost significant share in a number of statewide industries. These industries are identified in Table 16.

**Table 16: Tucson Industries Losing State Share by 5% or More, 1997-2006**

NAICS	Title	Employment (Pima)		Employment (Arizona)		Percent Share		Change in Share 1997-2006
		1997	2006	1997	2006	1997	2006	
3161	Leather and Hide Tanning and Finishing	119	17	177	120	67.2%	13.8%	-53.4%
3169	Other Leather and Allied Product Manufacturing	207	13	302	87	68.6%	15.3%	-53.3%
7131	Amusement Parks and Arcades	12	97	27	1,341	43.0%	7.2%	-35.7%
3162	Footwear Manufacturing	20	33	21	53	93.1%	62.5%	-30.6%
3271	Clay Product and Refractory Manufacturing	331	132	715	803	46.3%	16.4%	-29.9%
5174	Satellite Telecommunications	19	44	31	127	60.5%	34.8%	-25.7%
4853	Taxi and Limousine Service	337	158	567	414	59.4%	38.1%	-21.4%
3369	Other Transportation Equipment Manufacturing	31	-	154	238	20.2%	0.0%	-20.2%
4812	Nonscheduled Air Transportation	125	48	482	714	25.9%	6.7%	-19.2%
8122	Death Care Services	563	385	1,542	2,083	36.5%	18.5%	-18.0%
6239	Other Residential Care Facilities	1,598	1,202	3,010	3,342	53.1%	36.0%	-17.1%
5181	Internet Service Providers and Web Search Portals	386	697	949	2,877	40.7%	24.2%	-16.5%
4529	Other General Merchandise Stores	1,989	3,360	7,394	31,841	26.9%	10.6%	-16.3%
4889	Other Support Activities for Transportation	83	92	237	483	35.0%	19.0%	-16.0%
4859	Other Transit and Ground Passenger Transportation	255	188	776	1,069	32.8%	17.6%	-15.3%
4422	Home Furnishings Stores	1,148	977	4,421	7,397	26.0%	13.2%	-12.8%
3151	Apparel Knitting Mills	27	1	144	13	18.4%	6.3%	-12.1%
6242	Community Food and Housing, and Emergency and Oth	596	524	2,293	3,372	26.0%	15.5%	-10.5%
4541	Electronic Shopping and Mail-Order Houses	714	997	3,262	8,694	21.9%	11.5%	-10.4%
5179	Other Telecommunications	3	0	22	17	12.9%	2.6%	-10.3%
4533	Used Merchandise Stores	698	698	2,643	4,286	26.4%	16.3%	-10.1%
7223	Special Food Services	2,483	2,265	7,810	10,204	31.6%	22.2%	-9.6%
5619	Other Support Services	683	224	3,836	2,695	17.8%	8.3%	-9.5%
3322	Cutlery and Handtool Manufacturing	102	81	220	219	46.2%	36.8%	-9.4%
6117	Educational Support Services	97	308	468	2,613	20.6%	11.8%	-8.9%
3323	Architectural and Structural Metals Manufacturing	2,154	1,684	7,375	8,234	29.2%	20.5%	-8.8%
3259	Other Chemical Product and Preparation Manufacturing	58	16	522	694	11.1%	2.4%	-8.7%
4452	Specialty Food Stores	731	467	3,344	3,427	21.8%	13.6%	-8.2%
3335	Metalworking Machinery Manufacturing	553	446	1,768	1,932	31.3%	23.1%	-8.2%
5311	Lessors of Real Estate	2,709	1,649	10,614	9,325	25.5%	17.7%	-7.8%
6231	Securities and Commodity Contracts Intermediation and	581	351	4,777	8,093	12.2%	4.3%	-7.8%
5622	Waste Treatment and Disposal	104	32	1,078	1,644	9.7%	1.9%	-7.7%
4231	Motor Vehicle and Motor Vehicle Parts and Supplies Me	774	397	4,864	4,843	15.9%	8.2%	-7.7%
4483	Jewelry, Luggage, and Leather Goods Stores	647	433	2,995	3,086	21.6%	14.0%	-7.6%
3119	Other Food Manufacturing	126	85	1,000	1,630	12.6%	5.2%	-7.4%
3315	Foundries	135	8	1,781	1,244	7.6%	0.7%	-6.9%
5175	Cable and Other Program Distribution	202	199	1,594	3,391	12.7%	5.9%	-6.8%
4539	Other Miscellaneous Store Retailers	1,076	887	6,390	8,588	16.8%	10.3%	-6.5%
5151	Radio and Television Broadcasting	1,099	778	3,978	3,680	27.6%	21.1%	-6.5%
4811	Scheduled Air Transportation	1,400	409	15,682	15,176	8.9%	2.7%	-6.2%
8121	Personal Care Services	2,067	2,364	9,454	15,118	21.9%	15.6%	-6.2%
3326	Spring and Wire Product Manufacturing	79	56	468	514	17.0%	10.8%	-6.2%
4884	Support Activities for Road Transportation	174	274	1,011	2,460	17.2%	11.1%	-6.1%
3141	Textile Furnishings Mills	47	31	370	459	12.7%	6.8%	-5.9%
3111	Animal Food Manufacturing	31	20	258	337	11.9%	6.0%	-5.9%
4245	Farm Product Raw Material Merchant Wholesalers	63	44	257	236	24.7%	18.8%	-5.8%
3261	Plastics Product Manufacturing	792	235	7,173	4,335	11.0%	5.4%	-5.6%
3329	Other Fabricated Metal Product Manufacturing	486	283	3,637	3,462	13.4%	8.2%	-5.2%
4232	Furniture and Home Furnishing Merchant Wholesalers	177	149	1,320	1,764	13.4%	8.5%	-5.0%

Source: Economy.com data, DTIA analysis

Key Tucson industries losing state share during the last decade are Internet Services Providers, Other General Merchandise Stores, Special Food Services, Architectural and Structural Metals Manufacturing, Radio and Television Broadcasting, Scheduled Air Transportation, and Plastics Product Manufacturing. The last three industries (Radio and Television Broadcasting, Scheduled Air Transportation, and Plastics Product Manufacturing) are perhaps the most important ones to pay attention to since they are more strategic industries.

## XI. Arizona Firm Births and Deaths

Most recent data by the US Small Business Administration (SBA) indicates that Arizona has seen a drop-off in its firm birth rate in recent years. See Table 17 below. This trend is true for most of Arizona's competitor states, except for Nevada.

**Table 17: Firm Births and Terminations, 2001-2003**

Geographic area	Employer Firm Births			Employer Firm Terminations		
	Rate per 1,000 firms			Rate per 1,000 firms		
	2003	2002	2001	2003	2002	2001
United States	101	104	104	98	101	98
Arizona	123	134	140	144	165	158
California	111	133	137	137	159	159
Colorado	159	183	184	94	75	52
Nevada	206	190	198	189	187	184
New Mexico	131	127	139	137	191	132
Texas	134	138	137	141	149	153
Utah	189	192	207	184	207	261

Arizona also saw a decline in its firm termination rate over the same time period, which again is true for most of its state competitors. Arizona's firm birth and termination rates are above those for the nation as a whole.

## XII. Summary

The regional and state economies are expected to continue to grow favorably in the future. Quantity is not the issue, quality is!

By 2036, Arizona is expected to have a population of 14.6 million people, which will represent 3.6% of the nation's total population in 2036 versus 2.0% today.

The Tucson region, which just reached the 1 million population mark, is expected to have a population base of 1.75 million by 2036. Phoenix, according to the latest UA economic forecast, will see its population top 10 million in 30 years.

The most recent UA economic forecast sees Arizona adding 3.7 million new jobs over the next thirty years (2006-2036), raising its total to 6.3 million jobs. Growth leaders, or industry sectors growing more rapidly than the overall state economic growth rate, are expected to include professional & business services; health care & social services; transportation & warehousing; leisure & hospitality; and trade. Industry sectors growing more slowly than average are expected to include government, utilities, mining, manufacturing, construction, other services, information, and financial activities.

While people and jobs will grow favorably in both Tucson and Arizona in the future, current per capita personal income and poverty rates indicate that wealth creation is not keeping pace with the region's and state's economic growth. This trend points squarely to a needed shift in Arizona's and Tucson's future economic strategy to support the growth of more high-skilled and high-wage jobs. State and regional economic leaders are aware of

this need, but a plan is needed to make this happen. Within the Tucson region, this is exactly what the Economic Blueprint is expected to do.

This analysis suggests that labor market issues will be of growing importance as Tucson readies for the high-skill/high-wage economy in the future. Without a highly trained and much better educated workforce, the region will not attain this strategic goal.

In the short term, accelerated workforce training will be essential to getting workers ready for existing high quality jobs in the region. While training will remain an ongoing priority for the Tucson region, raising educational attainment rates will be the answer in positioning the region as a leading knowledge job center.

Special attention will need to be given to improving graduation rates by both the high school and post-secondary education levels. Regional leaders will also need to ensure that advanced education in the right fields is available within the region. This will be important to the region's future success in growing established clusters like aerospace and defense, as well as its promising emerging clusters, such as biosciences.