

AZB ARIZONA BUSINESS

ARIZONA STATE UNIVERSITY'S MONTHLY NEWSLETTER ON THE ARIZONA ECONOMY

Arizona's economic growth slowed in 2001

2001 Economic Review

The Arizona economy slipped into recession during 2001, but annual average aggregate growth rates remained positive. The state's overall advances in 2001 on such measures as employment, earnings and personal income continued to exceed national averages.

Measures of personal economic well-being declined in 2001 for the first time since 1991. Arizona continued to lag the national average on measures such as per capita earnings and per capita personal income. Indicators of economic health such as earnings per employee slowed to a marginal gain in 2001, not much different from the national average.

The U.S. Department of Commerce's Bureau of Economic Analysis (BEA) recently released revised state estimates of various economic measures for 2001 and earlier years. In this article, annual data are analyzed. The 2001 figures are compared to those in 1990, a comparable year in the prior economic cycle. Economic performance so far in 2002 is summarized at the end of this article.

ECONOMIC INDICATORS

Total personal income — \$137.3 billion in Arizona in 2001 — is a measure of total growth. In addition to earned income, it includes transfer payments, such as food stamps, and receipts of dividends, interest and rents. Inflation-adjusted increases in Arizona in 2001 were substantially less than the annual gains between 1994 and 2000 and were the lowest since 1991, the end of the prior recession.

Nationally, personal income advances in 2001 also slowed so that Arizona's margin over the national average continued to be similar to that in the three previous years, not as great as the differentials during the mid-1990s. Over the entire 1990 to 2001 economic cycle, Arizona's real personal income averaged 5.0 percent per year, compared to the national average of 3.1 percent.

Population also can be considered to be a measure of total growth. Though down from peak growth rates during the mid-1990s, population growth in 2001 was similar to that in 2000. Changes in population growth typically lag behind changes in economic growth by about a year. The annual average population increase of 3.2 percent in Arizona over the economic cycle was much higher

than the national average of 1.2 percent.

The broadest measure of economic growth is gross state product (GSP), but the latest data for this measure are for 2000. Earnings by place of work, a major component of personal income, is the best substitute for GSP; it totaled \$97.1 billion in 2001 in Arizona. During most of the expansion, its growth rate was higher than that of personal income, but it was lower in 2001 [see Table 1].

Wage and salary disbursements are the largest portion of earnings, totaling \$78.7 billion in Arizona in 2001. The gain in disbursements was slightly less than that of earnings in 2001. Its annual average increase over the last 11 years was marginally greater than that of earnings, which was somewhat higher than that of personal income.

Employment is a more limited gauge of economic growth than the dollar measures. The BEA produces an estimate of total employment (2.859 million in Arizona in 2001), which is more inclusive than the nonfarm wage and salary employment estimate (2.266 million in 2001) reported monthly by the Arizona Department of Economic Security (DES). Arizona's total employment growth rate in 2001 was 1.2 percent, the least since 1992.

In 2001, total employment advanced 33,000 according to the BEA, the least since 1992. Gains exceeded 85,000 between 1993 and 2000, peaking at 135,000 in 1994.

The BEA's estimate of wage and salary employment rose by 21,000 in 2001, considerably below the 76,000 of the two prior years. The non-farm wage and salary estimate from DES showed an increase of 23,000 in 2001.

The percentage growth differential in Arizona from the national average in total employment again narrowed in 2001, to 1.0 percentage points from a peak differential of

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4.1 in 1994. Arizona's employment surge from 1990 to 2001 was more than twice as fast as the national average.

All of the measures of total growth and economic growth in Arizona indicate lesser percentage gains at the peak of the 1990s cycle than in prior cycles. However, the period of strong advances lasted longer in the 1990s than in any prior cycle. Each measure also shows much faster growth than the national average. In contrast, measures of personal economic well-being and economic health reveal Arizona's gains over the economic cycle to have been similar to the national average. Growth rates in the per person and per employee measures nationally and in Arizona were strong from 1998 through 2000, but fell off substantially in 2001.

Per capita personal income (PCPI) is the broadest measure of personal economic well-being; it was \$25,800 in Arizona in 2001. The real annual average gain from 1990 to 2001 was 1.7 percent, slightly less than the national average of 1.9 percent. As a ratio to the national average, Arizona's PCPI in 2001 was 84.6 percent, below the 1995 cyclical peak of 87.1 and equal to the low point of the prior cycle reached in 1992. Since 1929, the only years with lower ratios (marginally) were from 1965 to 1967. The PCPI ratio throughout the 1990s economic expansion was considerably below that of prior expansionary periods [see Figure I]. However, given that the differential in household income between Arizona and the nation reported in the 2000 census is considerably smaller, the BEA may be underestimating Arizona's personal income relative to the national average.

The performance of the per capita earnings measure (\$18,200 in Arizona in 2001) has been similar to that of PCPI, but more cyclical. The 2001 ratio to the national average was down to nearly 83 percent, less than the 1998 cyclical peak of close to 85 percent, and well below historic norms. The real annual average gain during the 1990-2001 economic cycle was 2.2 percent in Arizona, slightly above the national average of 1.9 percent.

Average wage per wage and salary job is a more restricted gauge of well-being. Arizona's 2001 figure was \$33,000. The inflation-adjusted figure barely rose in 2001, following strong gains from 1996 to 2000. The 2001 increase was marginally less than the national average; the annual average increase over the economic cycle was slightly higher than the U.S. average. As a ratio to

the national average, Arizona's cyclical high point of 93.0 percent in 2000 (the 2001 figure was 92.9) was lower than in all years prior to 1989 [see Figure II].

Earnings per employee, a measure of economic health, averaged \$33,900 in Arizona in 2001. Its ratio to the national average of 91.1 percent in 2001 was the highest of the economic cycle, but remained below the peaks of prior economic cycles. With slightly greater gains than the national average from 1998 through 2001, the real

annual average gain of 1.7 percent during the economic cycle slightly exceeded the national average.

OTHER MEASURES

Using the BEA total employment estimate (which measures jobs rather than people employed), the employment-to-population ratio in Arizona slipped in 2001 following eight straight years of gains. It was 53.7 in 2001, a full point less than in 2000.

Personal income consists of three major

TABLE 1
ECONOMIC INDICATORS
Annual Real Percent Change

Arizona	Total Growth		Economic Growth			Personal Well-Being			Economic Health
	Pop	PI	Eam	W&S	Empl	PCPI	PC Eam	AWPJ	Eam PE
1991	2.7	0.7	0.8	-0.1	0.4	-1.9	-1.8	0.3	0.4
1992	2.8	3.6	4.4	3.8	1.2	0.8	1.6	1.7	3.1
1993	3.0	4.3	4.9	3.8	4.4	1.3	1.9	-0.9	0.5
1994	3.5	7.3	7.1	7.6	6.6	3.6	3.5	1.4	0.4
1995	3.9	6.1	7.0	7.6	5.5	2.1	2.9	1.5	1.4
1996	3.8	5.7	6.4	7.5	5.8	1.9	2.5	2.1	0.6
1997	3.6	6.2	6.3	7.1	4.6	2.5	2.6	2.9	1.5
1998	3.3	7.6	8.8	9.4	4.6	4.1	5.3	4.6	4.0
1999	3.1	5.0	6.6	6.3	3.2	1.8	3.3	2.7	3.2
2000	3.0	6.7	7.1	8.0	3.6	3.5	3.9	4.5	3.4
2001	3.0	2.4	1.4	1.0	1.2	-0.6	-1.6	0.2	0.2
1990-2001 Average	3.2	5.0	5.5	5.6	3.7	1.7	2.2	1.9	1.7
<i>Difference from National Average</i>									
1991	1.3	0.7	1.6	1.0	1.0	-0.6	0.3	0.1	0.7
1992	1.4	0.0	0.0	0.5	0.8	-1.4	-1.4	-1.0	-0.8
1993	1.6	2.6	3.1	2.7	2.5	1.0	1.4	-0.2	0.6
1994	2.3	4.4	4.4	4.8	4.1	2.0	2.1	1.1	0.3
1995	2.7	3.0	4.4	4.0	2.9	0.2	1.6	0.3	1.5
1996	2.6	2.2	3.0	3.6	3.6	-0.5	0.3	0.1	-0.7
1997	2.4	2.2	2.2	1.9	2.3	-0.2	-0.3	0.2	-0.1
1998	2.2	1.8	2.8	2.9	2.0	-0.5	0.5	0.8	0.6
1999	2.0	1.6	1.4	1.1	1.3	-0.4	-0.6	-0.2	0.1
2000	1.9	0.9	1.6	2.0	1.2	-1.0	-0.4	0.8	0.4
2001	2.1	1.5	1.2	1.1	1.0	-0.6	-0.8	-0.1	0.2
1990-2001 Average	2.0	1.9	2.3	1.9	2.0	-0.2	0.3	0.2	0.3
<i>Dollar Level Ratio to National Average (Percent)</i>									
1990						86.3	80.9	91.1	88.7
1991						85.8	81.2	91.3	89.3
1992						84.6	80.1	90.4	88.6
1993						85.4	81.3	90.2	89.1
1994						87.1	82.9	91.3	89.4
1995						87.3	84.3	91.5	90.7
1996						86.8	84.5	91.6	90.1
1997						86.7	84.3	91.8	90.0
1998						86.3	84.7	92.5	90.5
1999						86.0	84.1	92.3	90.6
2000						85.1	83.8	93.0	90.9
2001						84.6	83.2	92.9	91.1

Pop = population W&S = wage and salary disbursements PC Eam = per capita earnings
PI = personal income Empl = total employment AWPJ = average wage per job
Eam = earnings by place of work PCPI = per capita personal income Eam PE = earnings per employee

Source: Center for Business Research, L. William Seidman Research Institute, College of Business, Arizona State University from U.S. Department of Commerce, Bureau of Economic Analysis.

components: earnings (by far the largest component); dividends, interest and rent (DIR); and transfer payments (such as retirement benefits and public welfare). In 2001, real earnings climbed 1.4 percent in Arizona, compared to gains of 0.9 percent for DIR and 10.6 percent for transfer payments. Changes in transfer payments are countercyclical. In the 11 years of the economic cycle, earnings and transfer payments expanded by equal rates, considerably more than DIR. Compared to the national average, gains in Arizona were greater in each category in 2001 and over the entire cycle. The increase in DIR was not as much greater than the national average as in the other categories.

The earnings category also consists of three major components: wage and salary disbursements (several times the size of the other components), other labor income (mostly employer contributions to private pension funds), and proprietors' income (income of single proprietorships, partnerships, and tax-exempt cooperatives). Gains in 2001 in Arizona were only 1 percent in disbursements and proprietors' income; marginal decreases occurred nationally. Other labor income rose more. Over the economic cycle in Arizona, the gain in proprietors' income was a little greater than that of wage and salary disbursements. Other labor income grew much less. Arizona's increases were well above the national average in each measure.

COMPARISON TO OTHER STATES

Total personal income in Arizona climbed more than the national average in each year from 1993 through 2001. In 2001, Arizona's real gain of 2.4 percent ranked eighth among the states and third among 10 Western states. During the 1990 to 2001 period, the state's real growth of 71.5 percent was considerably higher than the national average of 40 percent and ranked third, behind only Nevada and Colorado. Other Western states — Utah, Texas, Idaho and Washington — also were among the leaders as Georgia was the only non-Western state among the top eight.

Arizona's inflation-adjusted per capita personal income decreased 0.3 percent in 2001, ranking 41st among the states but fourth in the West. Arizona's change was less than the national average for the sixth straight year. Between 1990 and 2001, Arizona's PCPI rose 19 percent, less than the national average of 23 percent. Arizona's advance over the decade ranked 44th nationally

and eighth among the 10 Western states (exceeding only Nevada and California). Other than Florida, the other states with a lesser increase all had small populations. Arizona's 2001 PCPI ranked 39th in the nation and seventh in the West (ahead of Utah, Idaho and New Mexico). In 1990, the state had ranked 36th in the nation and seventh in the West.

Despite being 7 percent less than the national average, Arizona's average wage in 2001 was 21st highest in the nation (sixth in the West). It had ranked 24th in 1990. Only 15 states had an average wage greater than the national average in 2001, but this group included such populous states as New York, New Jersey, California, Illinois and Michigan. The inflation-adjusted increase of 23 percent between 1990 and 2001 was a little higher than the national average of 20.5 percent, ranking 15th among the states (sixth in the West). The small gain of 0.2 percent in 2001 ranked 40th nationally and fifth in the West.

ECONOMIC PERFORMANCE DURING 2002

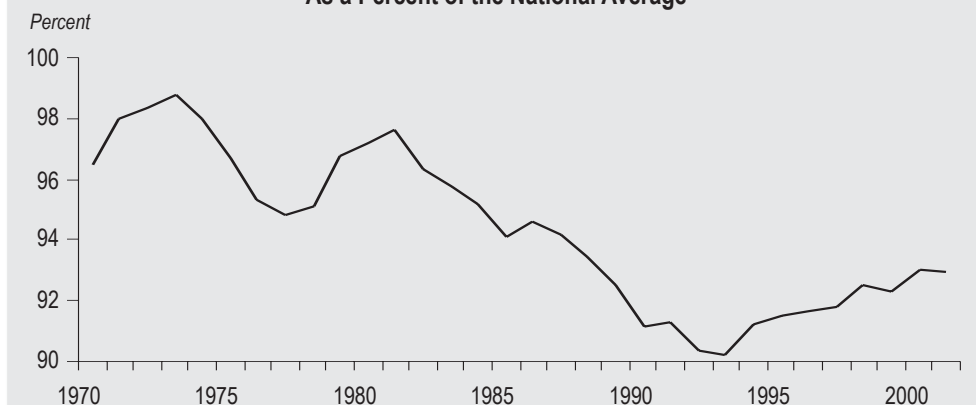
The Arizona and national economies continued to slump through the first three quarters of 2002. While the recession likely ended around the end of the first quarter, little recovery occurred during the next two quarters.

Preliminary nonfarm wage and salary employment estimates indicate that national employment continued to fall, though by lessening amounts, through April. Subsequent gains were slight. The lowest year-over-year percent change occurred in March at -1.3 percent; the latest figure (September) was -0.7 percent. The situation was similar in Arizona, where the worst over-the-year comparison was in March at -1.7 percent and the September figure was -0.9 percent. While the low point also occurred in March in Maricopa County (-2.2 percent v. -1.2 percent in September) and in the 13 less populous counties as a whole (0.4 percent v. 1.4 percent in September), no recovery had begun in Pima County by September,

FIGURE I
ARIZONA PER CAPITA PERSONAL INCOME
As a Percent of the National Average



FIGURE II
ARIZONA AVERAGE WAGE
As a Percent of the National Average



Source (Figures I and II): Center for Business Research, L. William Seidman Research Institute, College of Business, Arizona State University from U.S. Department of Commerce, Bureau of Economic Analysis.

when employment was 1.7 percent less than in September 2001.

The year-to-year percent change in retail sales bottomed in May in Arizona, but gains remained weak through August, with a year-to-date cumulative increase of about 1 percent (inflation-adjusted). Considering the state's population growth, retail sales per capita still were negative. Like employment, the strongest gains in the state occurred in the 13 less populous counties (about 3 percent). Increases in the urban areas were less than 1 percent. By category, growth in 2002 relative to 2001 varied. In particular, motor vehicle sales were way down.

Preliminary personal income estimates are available through the second quarter. Gains

in Arizona were only a little greater than the national average in the second quarter. On a per capita basis, Arizona continued to lag behind, though not by quite as much as from mid-2000 to mid-2001. As a ratio to the national average, per capita personal income in Arizona was less than the low point of the prior economic cycle while per capita earnings and per capita wages and salaries had not descended to quite the same level.

Both nationally and in Arizona, a slight recovery in growth rates in personal income, earnings, and wages and salaries was measured during the first half of 2002 from the low point at the end of 2001. Annual growth in wage and salary disbursements was barely positive in Arizona and negative

nationally. The strongest growth was in transfer payments. Earnings by industry were up about 1 percent in Arizona, compared to flat nationally. Several industrial divisions had lower figures in 2002 than 2001, including manufacturing and wholesale trade. Government, a partially countercyclical sector, was the only division with more than minor gains. Relative to the national average, Arizona's advances in FIRE (finance, insurance and real estate) and government were above average, while declines in mining and agricultural services were well below average.

— Tom R. Rex
Research Manager

More data becoming available by the NAICS

For the first time, North American Industry Classification System data are available for all 20 sectors of the economy. Government is the largest sector based on both employment and earnings. Manufacturing is the second largest based on earnings, but only the seventh largest on employment.

A transition from the old Standard Industrial Classification (SIC) to the new North American Industry Classification System (NAICS) currently is in progress. With the release of the 2001 state estimates in September 2002, the U.S. Department of Commerce's Bureau of Economic Analysis (BEA) released its first data using the NAICS. High-level sectoral data were produced under both the NAICS and the SIC, but the detailed data were generated only by the NAICS. With no history available under the NAICS, the changeover marks a break in series. The 1997 Economic Census and *County Business Patterns* from 1998 through 2000 are other products using the NAICS.

This article, and that starting on page 1, present an overview of the annual Center for Business Research report *Arizona Economic Profile*, which is available from the CBR Web site at www.cob.asu.edu/seid/cbr. This report incorporates the latest economic data from a variety of sources and includes data based on both the SIC and the NAICS.

LATEST SIC DATA

In the SIC, 10 industrial divisions are split into major groups, which are further split into industry groups and industries, though little data by state are available below the major group level. The *Arizona Economic*

Profile provides economic indicators such as earnings, employment and average wage for Arizona and the United States by industrial division and major group, though 2001 data by major group are not available. The BEA also produces gross state product (GSP), with the latest data for 2000.

By county, lesser sectoral detail is produced and 2001 data are not yet available from the BEA. Economic indicators are presented in the *Arizona Economic Profile* for each Arizona county for the 10 industrial divisions through 2000.

Arizona Industrial Divisions, 2001

Three broad economic measures are

presented in Table 1 by industrial division. Employment is the narrowest measure, being a count of jobs with no distinction regarding full-time v. part-time employment, or wage paid. Wage and salary disbursements (not shown in the table, a total of \$78.7 billion in Arizona in 2001) in essence corrects for these limitations but only represents a portion of the economy — wage and salary workers. The earnings figure adds proprietors' income (self-employed and other owners of businesses) and "other labor income," which mostly consists of employer contributions to private pension funds. Earnings totaled \$97.1 billion in 2001. Gross state product is the broadest measure, adding indirect

TABLE 1
SUMMARY OF MAJOR ECONOMIC INDICATORS
SIC Industrial Divisions, Arizona, 2001

	Total Employment*	Earnings**	Gross State Product***	Shares		
				Total Employment	Earnings	Gross State Product
TOTAL.....	2,859.3	\$97,060	\$156,303	100.0%	100.0%	100.0%
Services	917.5	28,477	34,652	32.1	29.3	22.2
Retail Trade.....	494.1	10,077	16,463	17.3	10.4	10.5
Government	398.6	15,989	18,140	13.9	16.5	11.6
FIRE^	294.7	9,681	28,714	10.3	10.0	18.4
Manufacturing	219.4	11,474	24,382	7.7	11.8	15.6
Construction.....	206.6	7,651	9,292	7.2	7.9	5.9
TCPU^^	127.4	5,565	11,154	4.5	5.7	7.1
Wholesale Trade	120.5	5,962	10,124	4.2	6.1	6.5
Agriculture	68.1	1,631	2,246	2.4	1.7	1.4
Mining.....	12.5	554	1,136	0.4	0.6	0.7

* In thousands ** In millions *** In 2000; in millions

^ Finance, Insurance and Real Estate ^^ Transportation, Communications and Public Utilities

Source: Calculated by the Center for Business Research, L. William Seidman Research Institute, College of Business, Arizona State University from U.S. Department of Commerce, Bureau of Economic Analysis, data.

business taxes and non-tax liabilities and other (mainly capital-related) charges to earnings, totaling \$156.3 billion in 2000. Examples of capital charges include net interest and corporate profits before taxes.

The industrial mix varies considerably across the three measures shown in Table 1. Some divisions are more labor dependent than others, some employ more part-time and/or seasonal workers than others, and wage levels vary widely across divisions.

On each measure, services was the largest division in 2001 (2000 for GSP), but its share ranged from 22 to 32 percent. Retail trade was the second largest sector based on employment (17 percent of the total). Because a substantial portion of its employment consists of low-paying, seasonal, and part-time jobs, retail trade's sectoral shares based on earnings and GSP were less than 11 percent. Government (all levels including school districts) — the third largest employer with 14 percent of the total — had a larger divisional share based on earnings, but a smaller share based on GSP. Finance, insurance and real estate (FIRE) is another division with wide variation in share, about 10 percent on employment and earnings but 18 percent on GSP. Real estate especially accounts for the larger GSP share. Manufacturing's employment share was less than 8 percent, while its GSP share was twice as large.

TCPU (transportation, communications and public utilities) and wholesale trade also had their largest shares based on GSP and the smallest shares based on employment, but construction's share of GSP was the least of the three measures. The agriculture and mining divisions were much smaller than the other industrial divisions.

Change Over Time

Growth rates also varied across the three measures [see Table 2]. Between 1991 (the end of the prior recession) and 2001 (the onset of the recent recession), construction and FIRE were the fastest-expanding industrial divisions. Services was the only other division with employment growth above the overall figure of 49 percent, while services and wholesale trade posted earnings gains higher than the overall 79 percent (inflation-adjusted). Growth rates (for 1991 to 2000) based on GSP were very different, with manufacturing far outdistancing all other divisions, with wholesale trade, retail trade, and TCPU also exceeding the overall inflation-adjusted figure of 89 percent. FIRE and

construction were not among the leaders.

In three divisions — agriculture, mining, and government — growth rates were well below average on all three measures. Combined, these three divisions accounted for only 12 percent of the numeric increase in employment from 1991 to 2001.

Numeric employment gains were dominated by the services division. Services and retail trade combined to create more than half of the net new jobs. In contrast, manufacturing, TCPU and wholesale trade each were responsible for only 4 percent of the net job creation.

Earnings data by major division extend back to 1929, a far longer history than the other measures. Manufacturing's share of earnings fell during the 1990s in Arizona, from 15 percent to less than 12 percent. The 2001 share was the lowest since 1955. The division's share had been as high as 17 percent in 1966, 1969, and 1981. Government's share also declined during the 1990s, from around 20 percent to 16.5 percent in 2001. Shares fell at each government level: federal civilian, military, state, and local. Shares in agriculture and mining continued to fall while small decreases in share continued in retail trade and TCPU. In contrast, the shares in FIRE and services continued to rise and wholesale trade showed a small additional gain. Construction's share also rose, but this was from a historic low in the early 1990s. The not-quite 8 percent share in 2001 compares to shares in excess of 10 percent at the peaks of prior economic cycles.

LATEST NAICS DATA

The NAICS consists of 20 sectors divided into subsectors, industry groups and industries. With the release of the 2001 state data, the BEA produced NAICS sector and subsector data on earnings, wage and salary disbursements, and employment, which are included in the *Arizona Economic Profile*. Data down to the industry level by county are available from *County Business Patterns* for 2000 from the U.S. Department of Commerce's Bureau of the Census. *County Business Patterns* presents information on establishments, employment and payroll. Only limited county data are presented in the *Arizona Economic Profile* because the federal government's disclosure restrictions cause much county data to be withheld — even at the sector level, one-fourth of the county-level data were not disclosed. (A companion product, *Zip Code Business Patterns*, was just released by the Census Bureau for 2000, but it presents only total employment and payroll by zip code.)

Arizona Sectors, 2001

Among the 20 NAICS sectors, government was the largest based on both employment (14 percent of the total) and earnings (16.5 percent of the total), using 2001 BEA data [see Table 3]. Manufacturing was the second largest based on earnings (11 percent of total), but only the seventh largest on employment (7 percent of total). In addition, the following sectors accounted for at least 5 percent of both employment and earnings: retail trade; health care and social assistance; construc-

TABLE 2
SUMMARY OF CHANGE OVER TIME IN MAJOR ECONOMIC INDICATORS
SIC Industrial Divisions, Arizona, 1991 – 2001

	Percent Change			Numeric Change
	Total Employment	Earnings	Gross State Product*	Total Employment**
TOTAL.....	49%	79%	89%	941
Construction.....	103	137	85	99
FIRE [^]	79	161	68	130
Services.....	59	96	69	339
TCPU ^{^^}	48	68	92	41
Wholesale Trade.....	45	98	131	37
Retail Trade.....	41	74	100	144
Agriculture.....	38	20	43	19
Government.....	33	48	22	98
Manufacturing.....	18	45	246	34
Mining.....	-21	-19	43	-3

* Change from 1991 to 2000 ** In thousands
[^] Finance, Insurance and Real Estate ^{^^} Transportation, Communications and Public Utilities

Source: Calculated by the Center for Business Research, L. William Seidman Research Institute, College of Business, Arizona State University from U.S. Department of Commerce, Bureau of Economic Analysis, data.

tion; administrative and waste management services; professional, scientific and technical services; and finance and insurance. The tourism-influenced accommodation and food services sector ranked next, but with just 4 percent of earnings.

Other than manufacturing, none of these large sectors were among the leaders on earnings per employee; retail trade, administrative and waste management services, and accommodation and food services were among those with the lowest figures. The small utilities and management of companies sectors had the highest earnings per employee. Arizona's overall figure of \$33,900 in 2001 was 9 percent less than the national average.

The average wage by sector generally was similar to earnings per employee. The state's overall average wage of \$33,000 in 2001 was 7 percent less than the national average. Several of the sectors with the highest earnings per employee and average wages were far below the national sectoral average. In contrast, in the moderate-to-low-paying sectors, Arizona's averages were similar to the national sectoral figures.

TABLE 3
EMPLOYMENT AND EARNINGS
NAICS Sectors, Arizona, 2001

	<i>Employment*</i>	<i>Earnings**</i>	<i>Earnings per Employee*</i>	<i>Average Wage*</i>
Total.....	2,859.3	\$97,060	\$33.9	\$33.0
Government and government enterprises.....	398.6	15,989	40.1	33.0
Retail trade.....	329.4	7,882	23.9	24.5
Administrative and waste services.....	236.0	5,634	23.9	23.6
Health care and social assistance.....	233.0	8,330	35.7	34.8
Accommodation and food services.....	217.9	4,012	18.4	13.6
Construction.....	215.8	8,294	38.4	34.1
Manufacturing.....	212.6	11,022	51.8	48.1
Professional and technical services.....	167.0	7,234	43.3	49.3
Finance and insurance.....	156.8	6,421	40.9	46.5
Other services, except public administration.....	136.3	2,622	19.2	20.6
Real estate and rental and leasing.....	134.2	2,496	18.6	30.8
Wholesale trade.....	106.6	5,356	50.3	48.8
Transportation and warehousing.....	81.7	2,971	36.4	36.8
Information.....	61.8	2,939	47.6	43.6
Arts, entertainment, and recreation.....	55.6	1,297	23.3	31.1
Agriculture.....	38.7	1,000	25.8	19.9
Educational services.....	30.8	823	26.7	30.0
Management of companies and enterprises.....	22.4	1,286	57.5	53.2
Mining.....	12.6	621	49.4	47.6
Utilities.....	11.4	832	73.0	64.7

* In thousands ** By place of work, in millions

TABLE 4
ARIZONA'S LARGEST SUBSECTORS

Ranked by 2001 Total Employment

	<i>Sector</i>	<i>Employment</i>	<i>Share</i>	
1	Local government (including school districts)	Government	235,936	8.3%
2	Administrative and support services	Administrative and waste services	232,089	8.1
3	Food services and drinking places	Accommodation and food services	167,732	5.9
4	Specialty trade contractors	Construction	145,625	5.1
5	Real estate	Real estate and rental and leasing	114,492	4.0
6	Ambulatory health care services	Health care and social assistance	95,753	3.3
7	State government	Government	82,195	2.9
8	Credit intermediation and related activities	Finance and insurance	66,153	2.3
9	Hospitals	Health care and social assistance	60,185	2.1
10	Computer and electronic product manufacturing	Manufacturing	57,378	2.0
11	Food and beverage stores	Retail trade	51,802	1.8
12	General merchandise stores	Retail trade	51,643	1.8
13	Accommodation	Accommodation and food services	50,200	1.8
14	Federal, civilian government	Government	46,967	1.6
15	Motor vehicle and parts dealers	Retail trade	45,887	1.6

Ranked by 2001 Earnings

	<i>Sector</i>	<i>Earnings*</i>	<i>Share</i>	
1	Local government (including school districts)	Government	\$8,603,269	8.9%
2	Administrative and support services	Administrative and waste services	5,407,873	5.6
3	Specialty trade contractors	Construction	4,643,180	4.8
4	Ambulatory health care services	Health care and social assistance	4,613,533	4.8
5	Computer and electronic product manufacturing	Manufacturing	4,329,462	4.5
6	Credit intermediation and related activities	Finance and insurance	3,105,954	3.2
7	Federal, civilian government	Government	3,100,425	3.2
8	State government	Government	2,966,825	3.1
9	Food services and drinking places	Accommodation and food services	2,824,498	2.9
10	Construction of buildings	Construction	2,423,790	2.5
11	Hospitals	Health care and social assistance	2,318,301	2.4
12	Transportation equipment except motor vehicles	Manufacturing	2,087,887	2.2
13	Motor vehicle and parts dealers	Retail trade	2,011,418	2.1

* By place of work, in thousands

Source (Tables 3 and 4): Calculated by the Center for Business Research, L. William Seidman Research Institute, College of Business, Arizona State University from U.S. Department of Commerce, Bureau of Economic Analysis, data.

Subsectors in Arizona, 2001

Arizona's largest subsectors in 2001 are shown in Table 4. Among the top five on both the employment and earnings measures were local governments (counties, cities, school districts, and special districts), administrative and support services (employment services, call centers, travel services, security services, janitorial services, and various other services), and special trade contractors (such as electrical contractors and carpentry and floor contractors). Among the top 10 on each measure were ambulatory health care services (such as physicians' offices, outpatient care centers, and medical laboratories), food services (including restaurants and drinking places), credit intermediation (such as commercial banking and mortgage brokers), state government, and computer and electronics manufacturing (including semiconductors). The construction, finance and insurance, health services and social assistance, accommodation and food services, and government sectors were particularly well represented among the 25 largest subsectors.

The highest-paying subsector in 2001 easily was performing arts and spectator sports, influenced by the very high salaries paid by major league sports. Four information subsectors were among the top 15, but none employed many people. The only subsectors among the top 15 also among the top 15 based on size (employment and earnings) were computer and electronics manufacturing, federal civilian government, and ambulatory health care services. High-paying transportation equipment manufacturing and construction of buildings were moderately large subsectors. Five retail trade subsectors were among the 15 with the lowest average wage [see Table 5].

County Data

NAICS data by county have not yet been released by the BEA, but the 2000 *County Business Patterns* report provides figures for most sectors (government and the farm portion of agriculture are omitted). County employment by sector was estimated by the Center for Business Research for those cases where the data were withheld.

The coefficient of concentration compares a county's share of the state's total economic activity by sector to the county's share of the state's population and is tallied by sector. In most NAICS sectors, employment in 2000 was heavily concentrated in Maricopa County, usually with all other counties having a share less than their population share. The

main exceptions were mining and agriculture (excluding farms and ranches, but including forestry, fishing and hunting), in which Maricopa County had disproportionately small shares. Mining was concentrated in Greenlee, Gila, Navajo and Yavapai counties. Agriculture was sizable in Yuma, Pinal and Gila counties. Maricopa County also had a somewhat below average share in utilities, with Cochise and Navajo counties having relatively high concentrations. Health care and social assistance had the strongest concentration in Pima County. Coconino County joined Maricopa County with a concentration in accommodation and food services.

Mining and agriculture were the sectors most highly concentrated in just a few locations around the state. Management of companies, finance and insurance, transportation and warehousing, wholesale trade, and professional, scientific and technical services also had strong concentrations, all in Maricopa County. The most geographically dispersed sectors were retail trade, accommodation and food services, health

care and social assistance, utilities, educational services (excluding public schools), and arts, entertainment and recreation.

The coefficient of specialization tallies by county the differences in sectoral shares from the state total. Greenlee County's industrial mix by far was least similar to the state average in 2000, being very heavily dependent on mining. Apache County's mix was next most different, with above average shares in health services and social assistance and in accommodation and food services. Maricopa County's employment mix was most like the state total, not surprising given that 70 percent of the state's employment was located in the Phoenix area. Pima County had the next most similar mix, much more similar to the state total than the sum of the 13 less populous counties combined even though employment in the Tucson area was not much more numerous than in the 13 counties.

— Tom R. Rex
Research Manager

TABLE 5
ARIZONA'S HIGHEST- AND LOWEST-PAYING SUBSECTORS*
Ranked by 2001 Total Employment

Highest			
	Sector	Thousands	
1	Performing arts and spectator sports	Arts, entertainment, and recreation	\$81.2
2	Computer and electronic product manufacturing	Manufacturing	68.9
3	Securities, commodity contracts, investments	Finance and insurance	68.2
4	Transportation equipment except motor vehicles	Manufacturing	59.6
5	Mining (except oil and gas)	Mining	47.6
6	Telecommunications	Information	47.6
7	Ambulatory health care services	Health care and social assistance	46.3
8	Broadcasting, except Internet	Information	45.9
9	Federal, civilian	Government	45.8
10	Insurance carriers and related activities	Finance and insurance	44.7
11	Publishing industries, except Internet	Information	44.7
12	Air transportation	Transportation and warehousing	44.5
13	ISPs, search portals, and data processing	Information	43.7
14	Credit intermediation and related activities	Finance and insurance	43.1
15	Construction of buildings	Construction	42.2
Lowest			
15	Membership associations and organizations	Other services	21.3
14	Nursing and residential care facilities	Health care and social assistance	21.2
13	Miscellaneous store retailers	Retail trade	20.7
12	Personal and laundry services	Other services	18.5
11	Accommodation	Accommodation and food services	18.5
10	Social assistance	Health care and social assistance	17.6
9	General merchandise stores	Retail trade	17.5
8	Gasoline stations	Retail trade	17.5
7	Amusement, gambling, and recreation	Arts, entertainment, and recreation	16.8
6	Clothing and clothing accessories stores	Retail trade	16.3
5	Sporting goods, hobby, book and music stores	Retail trade	15.5
4	Motion picture and sound recording industries	Information	15.5
3	Agriculture support, forestry, fishing, hunting	Agriculture	14.4
2	Food services and drinking places	Accommodation and food services	12.1
1	Private households	Other services	9.5

* With at least 2,500 employees in 2001

Source: Calculated by the Center for Business Research, L. William Seidman Research Institute, College of Business, Arizona State University from U.S. Department of Commerce, Bureau of Economic Analysis, data.

Single-family home sales continue at record pace

The single-family housing market set a third-quarter record with a total of 28,255 posted sales, almost surpassing the all-time quarterly record of 28,450 homes sold in second quarter 2001.

Given that the area continues to grow in an era of low mortgage interest rates, the constant setting of records should not be surprising. In the early 1990s, the local resale housing market had a quarterly average of three resale homes per 1,000 people; the current quarterly average is seven resale homes per 1,000 people. The falling interest rates have facilitated this growth, allowing homeownership to grow from 66 percent in 1997 to nearly 70 percent in 2001. Also, more people have been acquiring investment housing. Thus, as long as the area grows and the homeownership environment remains positive, the market has a solid basis for a very good year, if not another record.

AFFORDABILITY

In early November, the Federal Reserve Board lowered interest rates for the first time since December 2001. However, during the year, funds have flowed from the uncertain equity market to the bond market, driving down interest rates. The average 30-year mortgage interest rate has declined from 6.7 percent in first quarter 2002 to 6.0 percent, in contrast to last year's 6.7 percent. During the quarter, interest rates have fallen from 6.2 percent in July to 5.8 percent for June.

In the resale home market, the median home price rose to \$146,000, compared to the previous record of \$144,000 set in second quarter 2002. Last year, the median resale home price was \$138,000. For new homes, the median price increased from \$155,025 in second quarter 2002 to \$159,535, and was ahead of the \$156,500 for year ago. The slower rise in new home median price is primarily

due to the increasing role of the lower-priced housing market in the West Valley.

Base on the findings of Census 2000, the median household income has been revised for the affordability series. With the revised income being higher, the resulting affordability values have improved, but follow the same basic pattern as expressed in the previous series. The higher income combined with lower interest rates offset the higher median resale home prices to allow the resale affordability index to move up from 122 to 126, which is much better than last year's 123. With a strong increase in the new home median price, the new home affordability index value improved slightly from 114 to 115, which is well above last year's 109.

An index value of 100 means that the typical home buyer (based on the current median resale price and household income) would be able to afford a median-priced home at an effective interest rate of 8.6 percent. Since home prices and incomes vary throughout the Valley, so does the affordability index. For example, in the resale sector, the third quarter 2002 index ranged from 76 in Scottsdale to 127 in Glendale and 149 in Chandler.

RESALE SINGLE-FAMILY HOMES

Even with the uncertain economic environment, the third quarter 2002, with 16,865 recorded resale homes, was near the record of 17,555 sales set in second quarter 2001 and was above last year's 16,415 recorded sales. Monthly activity was the strongest in July (6,210 sales) followed by September (5,715 sales) and August (4,940 sales).

In first quarter 1998 (when the median home price was \$110,000), 15 percent of resale homes sold for less than \$70,000 and only 13 percent for more than \$200,000. In third quarter 2002, only 2 percent of

the recorded sales were for homes under \$70,000, while 26 percent were for homes over \$200,000.

The median resale home price ranged greatly across the metro area, from a high of \$800,000 (100 sales) in Paradise Valley to \$66,500 (90 sales) in the Sky Harbor housing area. Active areas were: Mesa with 2,005 sales (\$133,500 median price), Glendale with 1,590 (\$137,750), Deer Valley with 1,430 (\$158,900), North Scottsdale with 1,195 (\$331,790), Maryvale with 650 (\$98,000) and Mountain Park with 585 (\$189,900).

NEW SINGLE-FAMILY HOMES

The new housing market typically improves throughout the year, with the fourth quarter being the strongest. Thus, the increase was expected with movement from 6,795 sales in second quarter 2002 to 7,670 sales, and was slightly ahead of last year's 7,480 sales. Monthly activity was strongest in September (2,870 sales) with 2,620 sales in July and 2,180 sales in August.

Over the last few years, new home activity has become much more important in the West Valley communities of Avondale, El Mirage, Goodyear and Surprise. Currently, these communities represent 30 percent of the Greater Phoenix new home market. A fundamental motivation for this growth has been the greater affordability of new homes in the West Valley. In the East Valley, the median new home prices were for Chandler (\$197,675), Gilbert (\$178,830) and Mesa (\$169,995). In the West Valley, the median home prices were Avondale (\$138,400), El Mirage (\$117,950), Goodyear (\$166,290) and Surprise (\$145,515).

The highest median sales price was \$426,760 in North Scottsdale, where 175 homes were recorded sold; the lowest was \$117,950 in El Mirage, with 680 sales. Other

TABLE 1
HOUSING AFFORDABILITY INDEXES
Metropolitan Phoenix, Single-family Only

Quarter	Median Gross Monthly Income	Effective Interest Rate	Resale Homes			New Homes		
			Median Sales Price	Monthly Housing Payment	Affordability Index	Median Sales Price	Housing Payment	Monthly Affordability Index
Third Quarter 2001	\$3,995	6.9	\$138,000	\$910	123	\$156,500	\$1,030	109
Fourth Quarter 2001	4,000	6.7	137,000	885	127	154,595	995	112
First Quarter 2002	4,000	6.9	139,700	920	122	158,015	1,040	108
Second Quarter 2002	4,020	6.6	144,000	920	122	155,250	995	114
Third Quarter 2002	4,030	6.2	146,000	885	126	159,535	975	115

Source: Arizona Real Estate Center, L. William Seidman Research Institute, College of Business, Arizona State University.



active markets were: Deer Valley with 875 sales (\$220,120 median price), Superstition Springs with 685 (\$171,555) and Union Hills with 200 (\$267,965).

TOWNHOUSE/CONDOMINIUMS

The townhouse/condominium sector is receiving greater attention from investors and owners who appreciate the low maintenance, recreational facilities and security offered by this housing style. Many of the newer developments are at the high end of the market; the median price of \$165,785 for new units actually exceeds the \$155,535 for new single-family homes. The primary reason for this is that more than a third of the 390 recorded sales were in North Scottsdale, with a median sales price of \$216,835. Other active areas were East Mesa (45 sales, \$150,330), Superstition Springs (45 sales, \$116,760), and North Mesa (35 sales, \$138,385).

The resale townhouse/condominium housing sector had a very strong quarter with 3,330 sales, which was below the record of 3,685 sales set in second quarter 2002, but well ahead of last year's 3,190 sales. The median home price declined from \$95,700 in second quarter 2002 to \$95,000, compared to \$89,000 a year ago. The median resale price was 65 percent of the median price for single-family homes. The median square footage for a single-family home recorded sold in third quarter 2002 was 1,650, up from the 1,630 square feet reported a year ago. In the townhouse/condominium sector, the median square footage was 1,150, which is larger than the 1,145 square feet reported a year ago.

The most active resale areas were North Scottsdale with 415 sales (\$153,500), South Scottsdale with 330 (\$116,000), Sun City/Peoria with 240 (\$72,000) and South Mesa with 220 (\$88,450).

NATIONAL HOUSING MARKET

Both the new and resale home markets are performing above the levels of a year ago. The resale market rebounded from the slowing evident in second quarter 2002, while the new home market has continuously improved throughout the year. The demonstrated strength of the housing market supports the opinion that housing will have another good year. The key issue will be whether continued economic uncertainty takes a further toll on consumer confidence and, in turn, dampens the potential of the market.

The national resale median home price rose from \$157,670 in the second quarter to \$161,800, well above last year's \$151,200. The lower interest rates tended to offset the higher median price, so the resale affordability index improved from 121 to 124 compared to 121 a year ago. In the new home market, the median price decreased from \$187,200 to \$175,200, resulting in the national new home affordability index improving from 102 to 115, compared to last year's 106.

LOOKING AHEAD

For most of the year, the local and national economies have been struggling and have not been able to launch a sustained recovery. Even though interest rates are at historically low levels, other factors have held the economy back, especially the absence of any job growth combined with declining consumer confidence. The most-watched barometer of the economy has been the struggling stock market, which has had serious impact on individuals' wealth and confidence in the future. Other issues that are having an impact on the local economy include the quality and availability of water and the continued fiscal crisis that has

encompassed all levels of government from the state to local schools.

In the late 1990s, the concept of "disconnect" arose to try to explain the movement of the stock market. Because it was not reacting rationally within the economic environment, the stock market currently is paying the price. There is mounting argument that the housing market is similarly disconnected from the economic environment of declining consumer confidence, low job growth and mediocre economic growth. The premise is that it will end in the bursting bubble.

While this concept might have significance for the short term, home buyers are more concerned with the longer investment horizon, typically beyond five years. Thus, as long as the economy does not worsen, the low-interest mortgages (unlike those of the late 1980s) should allow people to retain their housing investments, whether they are rental investments or their homes. Further, the local housing market has been stimulated greatly by the rapid change from renters to owners, which should have a diminishing role in the coming years as most housing markets rarely exceed the current level of 70 percent.

In fact, as the economy improves and interest rates rise, there will be little incentive or pent-up demand for people to change their housing investment. Thus, as people settle into their homes, the market will become increasingly dependent on population growth and new household formation. Because home buyers are thinking long term, the housing market has not really "disconnected" from the economic environment.

— Jay Q. Butler

Director

Arizona Real Estate Center

TABLE 2
METROPOLITAN PHOENIX HOME SALES

Median Sales Price	Single-family			Townhouse/Condominium			Grand Total
	Resale	New	Total	Resale	New	Total	
Third Quarter 2001	\$138,000	\$156,500	\$144,000	\$89,000	\$166,780	\$94,500	\$138,900
Fourth Quarter 2001	137,000	154,495	144,355	90,000	166,940	95,000	139,500
First Quarter 2002	139,700	158,015	146,000	94,000	163,765	98,000	140,000
Second Quarter 2002	144,000	155,250	148,000	95,700	162,000	99,400	142,000
Third Quarter 2002	146,000	159,535	150,000	95,000	165,785	99,900	145,000
<i>Number of Sales</i>							
Third Quarter 2001	16,415	7,480	23,895	3,190	375	3,565	27,460
Fourth Quarter 2001	13,910	8,460	22,370	2,860	390	3,250	25,620
First Quarter 2002	12,655	6,015	18,670	2,970	315	3,285	21,955
Second Quarter 2002	17,325	6,795	24,120	3,685	355	4,040	28,160
Third Quarter 2002	16,865	7,670	24,535	3,330	390	3,720	28,255

Source: Arizona Real Estate Center, L. William Seidman Research Institute, College of Business, Arizona State University.

Population growth lessens in metropolitan areas

Net migration to Maricopa and Pima counties continued to lower through third quarter 2002. In contrast, net migration to the rest of the state remained strong at just less than the peak flows of the 1990s.

Net migration normally drops off during an economic slump because of limited job opportunities, with declines lagging behind decreases in job growth by about one year. Thus, the effects of the recession, which began in second quarter 2001, translated to lesser net migration, particularly in third quarter 2002 [see Table 1].

In the Phoenix area, net migration gradually has decreased since 1996, at the peak of the economic cycle. In the Tucson area, net inflows in the last four quarters were lower than those in the preceding five quarters and less than most quarterly flows from 1992 to 2001. Net inflows probably will remain at the third quarter's lower level for at least a few quarters given the continuing sluggishness in the labor markets.

In the balance of the state, retirement migration — particularly early retirees in

their 50s — makes up a large portion of net migration. With the baby-boom generation reaching early retirement age, and with mortgage interest rates quite low, net migration of this age group to this region likely has increased. In addition, the economy did not slump as much as in the

two large urban areas in 2001–02. Thus, net migration to the balance of the state over the last two years has been higher than that during most of the 1990s.

— **Tom R. Rex**
Research Manager

TABLE 1
QUARTERLY POPULATION
(In Thousands)

Year and Quarter	Population				Net Migration			
	Arizona	Maricopa	Pima	Balance	Arizona	Maricopa	Pima	Balance
2000 1	5,130.4*	3,072.1*	843.7*	1,214.7*	23.9	16.4	1.9	5.7
2000 2	5,169.0	3,097.2	847.8	1,224.0	27.4	17.2	2.7	7.4
2000 3	5,207.3	3,121.5	852.8	1,233.0	27.5	16.9	3.7	6.9
2000 4	5,245.6	3,146.3	857.9	1,241.3	27.0	16.5	3.9	6.5
2001 1	5,284.8	3,171.2	863.4	1,250.3	26.7	15.4	4.2	7.3
2001 2	5,321.2	3,194.2	868.0	1,259.0	25.7	15.1	3.4	7.1
2001 3	5,358.9	3,217.9	872.8	1,268.2	28.5	17.1	3.7	7.7
2001 4	5,396.2	3,241.7	876.9	1,277.6	25.5	15.4	2.8	7.3
2002 1	5,432.3	3,265.6	880.7	1,286.0	25.3	15.7	2.7	6.9
2002 2	5,468.2	3,288.9	884.4	1,295.0	24.9	15.2	2.5	7.3
2002 3	5,502.1	3,310.1	888.1	1,304.0	23.0	13.2	2.5	7.3

* Decennial census count on April 1, 2000

Note: estimates have been revised

Source: Center for Business Research, L. William Seidman Research Institute, College of Business, Arizona State University.

Business Conditions Index moves up in October

The seasonally adjusted Arizona Business Conditions Index rose to 47.5 in October. An index reading of over 50 indicates that the local economy is growing; a reading below 50 suggests a slowdown in the overall level of economic activity in the near term.

ANALYSIS

The index remained below the critical level of 50 for the second month in a row, but rose by 3.1 points. It appears that continued uncertainty about events in Iraq, the condition of the stock market and the future of consumer spending has put business capital spending considerations on hold. This is evident in the purchases component of the overall index, which rested at 48.1 in October.

While most of the components of the overall index rose in October, the employment subindex fell from an already low 39.3 to 38.0. The strongest component of the overall index was delivery times from suppliers, where a longer time for delivery indicates some pressure on supply. This pressure is usually a good sign for the economy, but in this case, an increase in delivery times may have been caused in part by

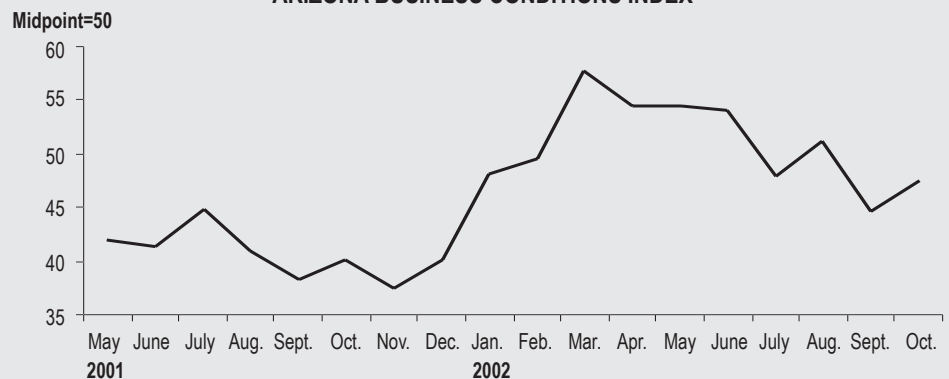
the longshoreman's strike in California. Even with employment in the doldrums, the production subindex rose 4.9 points to reach 52.0 in October, indicating that companies are producing goods with fewer employees, but this situation is unlikely to be sustainable in the long term.

The Price Index fell from 49.0 in September to 47.7 in October. This is a reflection of

weakness in the economy, as there has been less pressure on supply of late. This level of the Price Index is similar to that of one year ago, but is substantially lower than two months ago, when it reached 57.7.

— **Dawn McLaren**
Research Economist
Bank One Economic Outlook Center

FIGURE 1
ARIZONA BUSINESS CONDITIONS INDEX*



*Excludes Price Index

Source: Bank One Economic Outlook Center, L. William Seidman Research Institute, College of Business, Arizona State University

Arizona Leading Index on the rise in October

The Bank One Arizona Index of Leading Economic Indicators rose in October to 117.4. The index was 1.1 percent higher than the revised 116.1 number for the previous month and 5.0 percent above the October 2001 number of 111.8 (1987 = 100).

The inflation-adjusted value of Maricopa County residential building permits, the inflation-adjusted value of the M2 money supply, materials inventories, production, delivery times and new orders were positive. Hours worked in manufacturing, employment from the Business Conditions Survey and sensitive materials prices were negative.

The most encouraging news from the Leading Index was the turnaround in the components from the Business Conditions Survey. Unfortunately, the outlook for hiring is the component that remains negative, but if the other indicators hold up for a few months hiring is likely to turn around as well.

There is finally some indication that things may be looking up for high-tech manufacturing in the state. Intel is seeing an increase in sales of CPUs used in laptops and servers, which are predominantly in the first case and entirely in the second case purchased by business. Analysts had been worried that businesses might stretch out the normal three-year replacement cycle for computers to four years. The recent news from Intel suggests that at least a portion of the replacement will indeed occur in 2003, which bodes well for Arizona. The level of activity for the entire semiconductor manufacturing sector has been on the upswing for three months, which is also encouraging. Arizona will benefit if the first sector to see an increase in demand is semiconductors.

It is entirely possible that business spending on high tech could recover in advance of other types of business spending. Firms continue to be interested in improving and maintaining the productivity gains from the late '90s; they may opt to spend now on productivity at current levels rather than wait until the pace of production ramps up again. It was impossible to suggest such a scenario without some evidence of a pickup in demand for semiconductors. The recent uptick in demand may turn out to be short lived, but it is the first really good news in a long time.

The two strongest positives in the index

were building permits and the money supply. The money supply has been a positive since May of this year, suggesting that the liquidity the Federal Reserve has been pumping into the economy is having some impact. The Federal Reserve can increase liquidity and encourage money growth, but unless someone borrows from the banks it does not do much good. Borrowing has recently been dominated by mortgage seekers, which helps to explain the continued strong showing from single-family permit activity. The level of activity is likely to weaken going forward because mortgage rates are trending upward.

In summary, a positive development is

that semiconductors are showing signs of life, while on the negative side, the single-family housing sector is likely to slow down. On balance, the news is good and likely to improve, although the economy is not out of the woods yet. It would be encouraging to see some improvement in the job growth picture that would help support consumer spending.

— Tracy Clark

Associate Director

Bank One Economic Outlook Center

TABLE 1

NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS

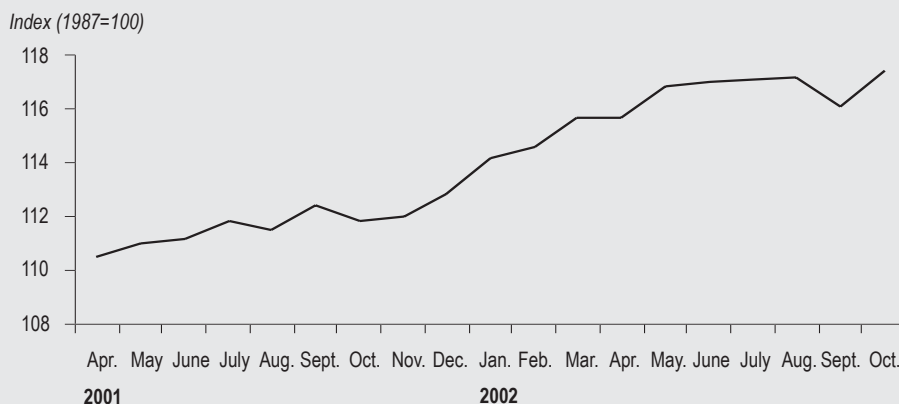
	Net Contribution*			
	July	August	September	October
Delivery Time*	0.01	0.09	-0.16	0.06
Inventory Levels*	-0.02	0.03	-0.42	0.30
New Orders*	-0.25	0.16	-0.12	0.04
Production*	-0.20	0.15	-0.12	0.07
Employment*	0.00	-0.20	-0.09	-0.04
Residential Building Permits	0.22	-0.21	-0.07	0.62
Average Workweek, Manufacturing	-0.11	-0.07	0.04	-0.22
Money Supply	0.47	0.28	0.12	0.33
Change in Sensitive Materials Prices.....	0.01	-0.14	-0.14	-0.02

* The net contribution of each component is calculated by multiplying the monthly percent change in its index by its relative importance.

* Based on indicators from the Purchasing Management Association of Arizona, Purchasing Management Association of Southern Arizona and the Northern Arizona Group.

FIGURE I

ARIZONA INDEX OF LEADING ECONOMIC INDICATORS



Source: Bank One Economic Outlook Center, L. William Seidman Research Institute, College of Business, Arizona State University.



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ARIZONA ECONOMIC INDICATORS

	Month or Quarter	Current Value	Previous Value	Percent Change Previous Period	Percent Change from Year Ago	Year-to-Date	
						Value	Percent Change from Year Ago
LEADING ECONOMIC INDEX (1987 = 100)							
Arizona	October	117.4	116.1 r	1.1	5.0	NA	NA
BUSINESS CONDITIONS INDEX							
Arizona	October	47.5	44.6	6.7	18.7	NA	NA
BUILDING PERMITS (Thousands of \$)							
Maricopa County	September	662,979	696,286	-4.8	-7.3	6,564,441	-13.7
Pima County	September	115,397	158,196	-27.1	12.4	1,164,733	13.1
Balance of State	September	166,502	224,172	-25.7	13.9	1,772,789	24.9
Arizona	September	944,878	1,078,654	-12.4	-2.0	9,501,963	-5.5
TOTAL HOUSING UNITS AUTHORIZED							
Maricopa County	September	3,945	3,752	5.1	3.8	33,490	-7.1
Pima County	September	765	826	-7.4	19.0	6,594	2.2
Balance of State	September	1,321	1,761	-25.0	11.1	14,026	18.6
Arizona	September	6,031	6,339	-4.9	7.1	54,110	-0.4
HOME SALES							
Maricopa County - Number	September	9,880	8,200	20.5	16.3	78,390	1.1
Maricopa County - Median Price(\$)	September	145,000	145,000	0.0	5.1	142,900	4.4
HOUSING AFFORDABILITY INDEXES							
Metropolitan Phoenix - New Homes	3rd Quarter	115	114	0.9	5.5	NA	NA
Metropolitan Phoenix - Resale Homes	3rd Quarter	126	122	3.3	2.4	NA	NA
MORTGAGE RATES (30-year Fixed)							
Maricopa County	October	5.8	5.8	0.0	-7.9	NA	NA
POPULATION ESTIMATES (Thousands)							
Maricopa County	3rd Quarter	3,310	3,289 r	0.6	2.9	NA	NA
Pima County	3rd Quarter	888	884	0.4	1.8	NA	NA
Balance of State	3rd Quarter	1,304	1,295	0.7	2.8	NA	NA
Arizona	3rd Quarter	5,502	5,468 r	0.6	2.7	NA	NA
RETAIL SALES (Millions of \$)							
Maricopa County	September	2,409	2,467	-2.4	2.0	22,420	0.0
Arizona	September	3,541	3,721	-4.8	2.4	33,234	1.3

Note: The above figures reflect the latest data available as of date of publication and are subject to revision.

NA = Not Applicable r = Revised

Source: Center for Business Research, Arizona Real Estate Center, and Bank One Economic Outlook Center, affiliates of the L. William Seidman Research Institute, College of Business, Arizona State University. Retail sales data are from the Arizona Department of Revenue.