

AZB ARIZONA BUSINESS

ARIZONA STATE UNIVERSITY'S MONTHLY NEWSLETTER ON THE ARIZONA ECONOMY

Low living costs offset low incomes in the Phoenix area

The cost of living in the Phoenix area is appreciably lower than expected of a large metropolitan area in the West. Earnings and incomes also are lower than average. Adjusting these figures for living costs, earnings and incomes are average. In Tucson, earnings adjusted for the cost of living are below the average of similarly sized western metro areas. In many other Arizona communities, earnings are quite low after adjusting for living costs.

Table 1 vary somewhat from the established regions of the U.S. Census Bureau and U.S. Bureau of Economic Analysis to specifically reflect variations in living costs and the low number of chambers of commerce in the northeastern portion of the country that participate in the ACCRA study.

The North Atlantic region had a significantly higher than average cost of living in 1999–2000, as did the Pacific region [see Table 2]. In contrast, living costs were significantly below average in much of the mid-section of the country: the Northern Plains, Southwest and South regions. This geographic pattern is seen in housing costs and non-housing costs (the other five categories of the ACCRA study combined), though the regional variation in housing costs is much greater. Even within regions, housing costs can vary significantly. Thus, even though the mean housing index in the North Atlantic region was a high 126, substantial variation within the region kept this figure from being significantly different from the national average.

The cost of living also is correlated to population size. The 2000 census metropolitan area population count was used; county population was used for those reporting units outside of a metro area. The least populous areas — those with a population less than 100,000 — had significantly lower living costs than the U.S. average, though the differential was just 3 to 4 percent. Only the largest metro areas (at least 2 million residents) had above-average living costs, with a large differential of 14 percent. Both housing and other costs followed this pattern. As with regions, housing costs varied more with population than other costs.

Housing costs vary geographically more than other costs largely because of the fixed quantity and variable quality of land. For example, a metropolitan area located along

COST OF LIVING, INCOME AND EARNINGS IN 1999-2000

Reliable income and earnings data by place of residence for cities, counties and metropolitan areas are limited to decennial census figures (which are expressed for the calendar year prior to the census — 1999 data are the most recent). Decennial census data on housing costs (as of the April 1, 2000 census date) also are used in this analysis.

Cost of Living

The American Chamber of Commerce Researchers Association (ACCRA) is the only publicly available source of city cost-of-living data. The quarterly ACCRA study is voluntarily conducted by local chambers of commerce. Only seven Arizona cities participated in the study during 1999 or 2000. Generally, the cost of living is reported for a city, but some participants report costs for groups of cities, counties, or metropolitan areas. The cost of living is expressed as an index relative to the national average of the participating places in a quarter being set equal to 100. While ACCRA does not report survey error, a difference of less than three index points between cities probably should not be considered significant.

To be consistent with the census income and earnings data expressed for 1999 and the census housing data as of April 1, 2000, the median ACCRA cost-of-living index over the four quarters of 1999 and the first two quarters of 2000 was calculated by city. More up-to-date ACCRA data are presented later in this article.

The overall ACCRA cost-of-living index is a weighted average of six categories: groceries, housing, utilities, transportation, health care, and miscellaneous other goods and services. The housing category (28 percent of the total) accounts for most of the variation in living costs from place to place, which follows a regional pattern. The regions listed in

Cost/ Standard of Living

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an ocean or mountain range will have higher costs for two reasons: the perceived desirability of land with views and proximity to scenic and recreational areas, and the limited supply of land with such characteristics. A large metro area without such desirable land also will have higher land costs because the amount of land within commuting distance of its job centers is limited. In contrast, much of the midsection of the country has a plentiful supply of privately owned and largely undifferentiated land (flat and distant from oceans), which keeps land prices low.

Based on a multiple regression analysis, half of the variation in living costs among the nearly 400 places that participated in the ACCRA study during 1999 and the first half of 2000 can be explained by population size and region. Adding the median home value from the 2000 census as an explanatory variable boosts the explanatory power to 84 percent.

The cost-of-living index in Phoenix in 1999–2000 was 102, considerably less than the value of 112 predicted by the regression equation for a metro area of its size in the Rocky Mountain region. Nearly all of the differential can be traced to the city's relatively low housing costs; the regression equation including the census housing value predicted an index quite close to the actual value. The situation in Tucson and Lake Havasu City was similar, though less extreme: the actual index was less than the predicted value based on population and region but quite close to the value predicted when considering the census home value.

In contrast, the cost of living in Flagstaff and Prescott-Prescott Valley was considerably higher than expected. Especially in Flagstaff, relatively high housing costs were a significant cause of the differential, but even after considering the census home value, the predicted cost of living was somewhat less than that actually reported. In Sierra Vista and Yuma, the cost of living was similar to that expected based on population and region.

Income and Earnings

Decennial census data on median household income and median earnings of full-time, year-round workers in 1999 were used in this analysis. Each measure is subject to survey error. The earnings data were reported separately for males and females; the midpoint of the two medians was used in this analysis.

Both measures follow a regional pattern much like that of the cost of living. As seen in Table 3, income and earnings in 1999 were lower than the national average in the South,

Southwest and Northern Plains regions. The Great Lakes region joined the North Atlantic and Pacific regions as having the highest income and earnings figures.

As with living costs, income and earnings were higher in populous metropolitan areas than in less populated areas. Relative to the U.S. average, each measure was significantly higher in metro areas with a population of at least 800,000 and significantly lower in areas of less than 150,000 residents.

Thus, income and earnings were correlated with living costs, as seen in the bottom of Table 2. The correlation was higher with earnings than income, reflecting the tendency for wage levels to at least partially reflect living costs. In contrast, other sources of income such as retirement income are not adjusted to reflect the local cost of living.

While earnings were significantly correlated to living costs, the correlation was considerably less than perfect. Variations in the job mix from one place to another contribute to the lower correlation. For example, a city with a disproportionately high share of low-wage jobs will have a lower earnings figure even if its wage levels by occupation

and industry are identical to the national average. Even if the job mix were identical in two places, the cost of living relative to earnings still could vary. For example, if one place is popular due to a highly perceived quality of life, it is likely to have a labor surplus relative to its jobs base, which will hold down wages relative to the cost of living. If employers in another place have trouble attracting workers due to poor climate or other negative quality-of-life factors, wages will be higher relative to living costs.

Standard of Living

The economic standard of living is defined as income or earnings adjusted by the cost of living. As seen in Table 3, adjusting income and earnings for the cost of living reduces the regional variation. The Great Lakes region was the only region with adjusted income and earnings significantly greater than the national average. Only the adjusted earnings figure in the Rocky Mountain region was significantly less than average.

The cost-of-living adjustment does less to reduce the variation by population size. The least populous areas still had adjusted earn-

TABLE 1
U.S. REGIONS

NORTH ATLANTIC	GREAT LAKES
Maine	Michigan
New Hampshire	Ohio
Vermont	Indiana
Massachusetts	Illinois
Rhode Island	Wisconsin
Connecticut	Minnesota
New York	
New Jersey	NORTHERN PLAINS
Pennsylvania	Iowa
Delaware	Missouri
Maryland	North Dakota
Washington D.C.	South Dakota
	Nebraska
	Kansas
	ROCKY MOUNTAIN
	Montana
	Idaho
	Utah
	Wyoming
	Colorado
	New Mexico
	Arizona
	PACIFIC
	Washington
	Oregon
	California
	Nevada
SOUTH ATLANTIC	
Virginia	
North Carolina	
South Carolina	
Georgia	
Florida	
SOUTH	
West Virginia	
Kentucky	
Tennessee	
Alabama	
Mississippi	
Louisiana	
SOUTHWEST	
Arkansas	
Oklahoma	
Texas	

TABLE 2
1999-2000 MEAN LIVING COST INDEXES

REGION	Total	Housing	Other
North Atlantic	113*	126	108*
South Atlantic	99	96	100
South	94*	90*	96*
Southwest	93*	84*	96*
Great Lakes	100	101	100
Northern Plains	96*	94*	97*
Rocky Mountain	102	106	100
Pacific	111*	121*	107*
POPULATION			
Less than 60,000	96*	93*	98*
60,000 – 99,999	97*	96	98*
100,000 – 149,999	98	95	99
150,000 – 299,999	99	100	98
300,000 – 799,999	100	100	100
800,000 – 1,999,999	100	99	100
2 million or more	114*	131*	108*
EARNINGS			
Less than \$26,000	94*	88*	96*
\$26,000 – \$27,499	97*	93*	98*
\$27,500 – \$29,499	97*	94*	98*
\$29,500 – \$31,499	99	98	100
\$31,500 – \$33,999	104*	106	103*
\$34,000 or more	111*	127*	105*

* Statistically significant difference from the national average.

Source (Tables 1 and 2): Center for Business Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University.

ings and income significantly less than the national average, with populous areas having significantly above average figures. On both measures, the adjusted figure in the largest metro areas was marginally less than that of metros with between 800,000 and 2 million residents.

The population-size variation in earnings and income that remains after adjustment for living costs likely is due to most of the highest-paying jobs being located in large urban areas. It also may be that employers in large urban areas need to pay higher wages to attract workers to compensate for such urban problems as traffic congestion, pollution and crime.

For each of the Arizona places participating in the ACCRA study, several comparison areas in the West (the Pacific and Rocky Mountain regions and Texas) were selected based on population. Phoenix had a standard of living (an adjusted household income figure of about \$43,900 and adjusted earnings of around \$31,900) in the middle of eight western metro areas with populations between 1.75 and 5 million — less than in Denver, Houston and Seattle, but considerably higher than that in San Diego and Riverside-San Bernardino. Six of the eight had an adjusted household income figure in excess of \$40,000 and an adjusted earnings figure of more than \$30,000. These standard-of-living figures (and those of other populous western metro areas such as Dallas-Fort Worth and Las Vegas) were higher than those of less populous areas.

Tucson's adjusted household income of \$36,800 and adjusted earnings of \$28,600 were just below the middle of its peer group of 10 western metro areas with a population from 450,000 to 1,250,000 (but considerably less than in Phoenix). Austin, Colorado Springs and Boise had the highest standard of living among these metro areas; the lowest figures were in Fresno, El Paso and McAllen. Only three of the 10 had adjusted household income of more than \$40,000; four had an adjusted earnings figure of more than \$30,000.

Prescott-Prescott Valley (adjusted income of \$32,300 and adjusted earnings of \$24,500) and Yuma (adjusted income of \$31,600 and adjusted earnings of \$24,300) had standard-of-living figures near the bottom of their peer group of 11 western metro areas or counties of between 140,000 and 200,000 residents, but Lake Havasu City's standard of living (adjusted income of \$42,900 and adjusted earnings of \$30,900) was second only to Richland-Kennewick-Pasco. Only two of 11 had an adjusted income figure of at least \$40,000; three had adjusted earnings of more than \$30,000.

Flagstaff (adjusted income of \$35,200 and adjusted earnings of \$26,400) and Sierra Vista (adjusted income of \$32,100 and adjusted earnings of \$26,400) also were near the bottom of their peer group of 10 western metro areas or counties with a population between 110,000 and 150,000. The highest figures were in three Texas cities. Only two of 10 had an adjusted income figure of at least \$40,000; three had adjusted earnings of more than \$30,000.

LATEST COST-OF-LIVING DATA

Seven Arizona cities participated in the ACCRA cost-of-living study in any of the four quarters from third quarter 2002 to second quarter 2003. The cost of living was higher than the national average in Flagstaff and Prescott-Prescott Valley, average in Yuma, a bit below average in Phoenix, Tucson and Lake Havasu City, and further below average in Sierra Vista [see Table 4].

The main reason for higher living costs in Flagstaff and Prescott-Prescott Valley than in the other Arizona cities is the cost of housing, which was far above the national average in Flagstaff, a little higher than average in Prescott-Prescott Valley, and well below average in the other cities. Excluding housing, living costs in Arizona did not vary much by city, ranging from marginally above the national average in Sierra Vista to about

5 percent above average in Prescott-Prescott Valley.

Grocery items were more expensive than the national average in each Arizona city, with especially high prices in Lake Havasu City and Tucson. Transportation costs were above average except in Lake Havasu City, health care costs were above average except in Sierra Vista, and the cost of utilities was higher than average except in Phoenix. In contrast, miscellaneous other costs were average to below average except in Prescott-Prescott Valley.

Most of the Arizona cities experienced a decline in their cost of living relative to the national average in recent years. The cost-of-living index for Phoenix consistently was between 100 and 103 from 1990 through 2001, with the housing index ranging from about 97 to 100. The housing index began to drop in 2001 and fell below 90 in second quarter 2002. The overall index ranged from only 94 to 98 during 2002 and the first half of 2003. A less dramatic decrease in relative cost of living occurred in Tucson (from 99 to 100 between 1996 and 2001 down to about 97), also the result of a sharp drop in the housing index in 2002.

The decrease in relative living costs began earlier in Flagstaff. Rapid increases in home prices drove the overall cost-of-living index

TABLE 3
1999-2000 MEAN HOUSEHOLD INCOME AND MEAN EARNINGS
WITH AND WITHOUT COST-OF-LIVING ADJUSTMENT
(In Thousands of Dollars)

REGION	Income	Adjusted Income	Earnings	Adjusted Earnings
North Atlantic.....	\$44.1*	\$39.6	\$33.0*	\$29.5
South Atlantic.....	39.2	39.6	28.8	29.1
South.....	36.9*	39.1	28.8	30.6
Southwest.....	36.2*	39.0	27.6*	29.8
Great Lakes.....	42.7*	42.6*	32.0*	31.9*
Northern Plains.....	37.1	38.6	27.7*	28.8
Rocky Mountain.....	39.1	38.3	29.0	28.5*
Pacific.....	42.3	38.1	32.8*	29.6
POPULATION				
Less than 60,000.....	\$34.2*	\$35.4*	\$26.6*	\$27.6*
60,000 – 99,999.....	35.9*	36.9*	27.7*	28.5*
100,000 – 149,999.....	36.9*	37.7	28.2*	28.8
150,000 – 299,999.....	39.3	39.7	29.5	29.8
300,000 – 799,999.....	39.9	39.9	29.8	29.8
800,000 – 1,999,999.....	43.8	44.0*	32.3*	32.4*
2 million or more.....	48.6*	43.4*	35.8*	31.9*
NATIONAL AVERAGE	\$39.5	\$39.5	\$29.8	\$29.8

* Statistically significant difference from the national average.

Source: Center for Business Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University.

up from 102 in 1990 to a peak of 112 in 1997. The index fell to about 106 early in 2000 and has remained at this level. The housing index fell from more than 122 prior to 2000 to about 116. The housing index in Prescott-Prescott Valley also has lowered, though the recent overall index was only marginally below its historical range of 105 to 109.

Yuma's overall cost-of-living index has fluctuated from 95 in the early 1990s and again in 2001-02 to 105 in 1997-98. Over the last five years, the housing index dropped from the upper 90s to the mid-80s. Lake Havasu City generally has had an overall index figure of around 99 to 100; it was somewhat less in 1997-98 and again recently. Housing costs usually have been about 15 percent below the national average. Sierra Vista began participating in the ACCRA study in late 1998. Its cost-of-living index dropped from just over 100 initially to the low 90s in 2001-02. The housing index has slid from the upper 80s to the mid-70s.

The cost of living in Phoenix ranked seventh of eight comparison areas, with the same rank in housing costs and in costs other than housing. The six more expensive were San Diego (42 percent more expensive), Sacramento (28), Seattle (24), Portland (18), Riverside-San Bernardino (12) and Denver (9). Houston was about 6 percent less expensive than Phoenix. The differences in housing costs were greater.

Tucson was the seventh most expensive of 10 comparison areas. It ranked eighth on housing costs but fourth on non-housing costs. Modesto, Fresno and Bakersfield were the most expensive of this group; Austin, Albuquerque and Colorado Springs also were a little more expensive than Tucson. Boise, El Paso and McAllen were less expensive. Only El Paso (barely) and McAllen had lower housing costs, while only the California metros had higher non-housing costs.

Prescott-Prescott Valley was the most expensive of its 12 comparison areas, both

in housing and other costs. Yuma tied for third most expensive, ranking third on non-housing costs and tied for seventh on housing costs. Lake Havasu City also ranked higher on non-housing costs (tied for fourth) than on housing costs (ninth); its overall living costs ranked sixth. Bellingham and Richland-Kennewick-Pasco were the most expensive of the comparison places. Among the least expensive were places in Texas (Laredo, Abilene and Bryan-College Station) and Colorado (Pueblo and Greeley).

Flagstaff was the second most expensive of 10 comparison areas to Bend, Oregon (overall and in non-housing costs), but its housing costs were by far the highest. Sierra Vista's cost of living ranked sixth, with non-housing costs ranking fourth but housing costs tied for the lowest. Other than Bend and Flagstaff, Billings and Grand Junction had the highest costs while places in Texas were least expensive.

INFLATION

The ACCRA cost-of-living data compare living costs across geographic areas at a particular point in time. The data cannot be used as a measure of inflation — the change in prices

over time. Local inflation data come from the Consumer Price Index, which is compiled for 27 large metropolitan areas by the U.S. Bureau of Labor Statistics. Beginning in 2002, the CPI for the Phoenix area is reported twice a year, as of the end of June and December.

Inflation in the Phoenix area was less than the national average of 2.4 percent from year-end 2001 to year-end 2002. The Phoenix area's rate of 1.1 percent was the fourth lowest among the 27 metro areas and second lowest to Portland among nine metro areas in the West. The highest inflation rate was 4.0 percent in San Diego, Tampa and Boston.

Nationally, inflation slowed a bit further in 2003, with the year-end rate down to 1.9 percent. The Phoenix area's rate was 2.4 percent, tied for eighth highest in the nation and third highest in the West. The highest inflation rate was just over 3 percent in San Diego, New York and Anchorage, with the lowest rate in Denver at 0.3 percent and Seattle at 0.5 percent.

— **Tom R. Rex**
Research Manager
 — **Nettie Klingler**
Research Analyst

TABLE 4
COMPARATIVE LIVING COSTS FOR ARIZONA COMMUNITIES
PERCENT DIFFERENCE FROM NATIONAL AVERAGE, 2002-03

	Total	Groceries	Housing	Utilities	Trans- portation	Health Care	Misc.
Phoenix	-3	2	-15	-4	6	10	0
Tucson	-3	11	-17	7	5	10	-5
Flagstaff	6	4	16	5	9	14	-3
Lake Havasu City	-3	17	-16	4	-14	3	0
Prescott-Prescott Valley	5	8	2	3	4	8	5
Sierra Vista	-7	1	-24	14	8	-8	-4
Yuma	0	6	-10	25	12	11	-7

Source: Center for Business Research, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University from ACCRA Cost of Living Index.

Population growth rate rises in Arizona

Population growth in Arizona accelerated during fourth quarter 2003 for the second consecutive quarter. Continued acceleration is likely during 2004.

The year-end population of Maricopa County is estimated at 3,438,500, up 27,000 during the fourth quarter and 100,500 during 2003. Net migration accounted for about two-thirds of the increase, with a net inflow of 18,000 during the fourth quarter and 64,600 during the year. The fourth quarter's figure

was the highest since fourth quarter 1999.

In Pima County, the year-end population is estimated at 912,800. The increase was 5,800 during the fourth quarter and 19,200 over the year. Net migration during the fourth quarter was estimated at 4,500, the highest figure since third quarter 1995. Over the year, net migration totaled 14,000, accounting for more than 70 percent of the population gain.

Population growth in the balance of the

state continues to set records, largely due to people moving to residential developments in Pinal County near the Phoenix urbanized area. An increase of 11,500 during the fourth quarter put the population at 1,353,200. The gain during all of 2003 was 40,200, of which net migration of 32,900 accounted for more than 80 percent.

— **Tom R. Rex**
Research Manager

Arizona remains among leaders on population growth

Arizona's population growth has continued to be among the fastest in the nation since the 2000 census, according to estimates released by the U.S. Census Bureau.

In mid-2003, Arizona was the 18th most populous state, up from 20th in the 2000 census, having passed Wisconsin in mid-2002 and Maryland in late 2002. Arizona likely will move up five more places in the next several years, passing Missouri, Tennessee, Indiana, Massachusetts and Washington. It may be decades before the state's rank advances further, as the other 12 states are much more populous and/or also growing rapidly.

Annual growth (from July 1 through June 30) in Arizona was estimated by the Census Bureau to have been 131,900 in 2001, 143,400 in 2002, and 139,700 in 2003. In each year, these figures are lower than those estimated by the Center for Business Research (CBR) and the Arizona Department of Economic Security (DES). The Census Bureau estimate as of July 1, 2003 (5,580,800) was 49,100 lower than the DES figure and 38,700 less than the CBR estimate.

According to the Census Bureau, Arizona's numerical population change (450,200) during the three years and three months following the 2000 census was fifth greatest in the nation, behind California (1.6 million), Texas (1.3 million), Florida (1.0 million) and Georgia (498,200).

Arizona's population growth rate since the census (8.8 percent) was second to Nevada's 12.2 percent. Florida ranked third at 6.5 percent. Five other states had gains in excess of 5 percent: Texas, Georgia, Colorado, Idaho and Utah.

Expressed relative to the decennial census count, the change in population between the 2000 census and mid-2003 was greatest in Nevada at 122 per 1,000 residents. Arizona ranked second at 88, followed by Florida at 65. The national average was 33. Other states with a figure of at least 50 included Georgia, Texas, Colorado, Idaho and Utah. More generally, the highest rates of population change relative to population size were in the Rocky Mountain and Pacific Coast states, Texas, the South Atlantic states (from Maryland and Delaware south), and New Hampshire. North Dakota and the District of Columbia experienced a decrease in their number of residents, while the gain per 1,000 residents was less than 10 in West Virginia, Pennsylvania, Ohio, Iowa and Louisiana.

Between the 2000 census and mid-2003,

the number of births in Arizona was 278,700. Arizona ranked third on the number of births per 1,000 residents in 2000 at 54; the national average was 46.5. Utah had the highest rate at 69. Between 2000 and 2003, 136,500 deaths occurred in Arizona. Per 1,000 residents in 2000, the state ranked 38th at 27; the U.S. average was 28.

Net natural increase (births less deaths) totaled 142,200 in Arizona between 2000 and 2003, the eighth greatest number in the nation. The state ranked sixth on net natural increase per 1,000 residents in 2000 at 28; the national average was 18.5. Utah easily had the highest figure at 50. Western states (except Oregon) and some southern states (Texas, Louisiana, Georgia, North Carolina and Virginia) had the highest rates of growth from net natural increase. The lowest rates were in the Northeast and in Florida, North Dakota, Montana and West Virginia. The latter was the only state in which deaths outnumbered births.

Arizona also ranked eighth on net international migration (111,500), which includes legal immigration and an estimate of undocumented immigration. On a rate basis, the state ranked seventh at 22 per 1,000 residents, compared to the national average of 15. The highest rates of international migration were to states in the Southwest and West, and some states along the Atlantic Coast. States in the mid-section of the country (except Illinois) and in northern New England had the lowest international migration rates.

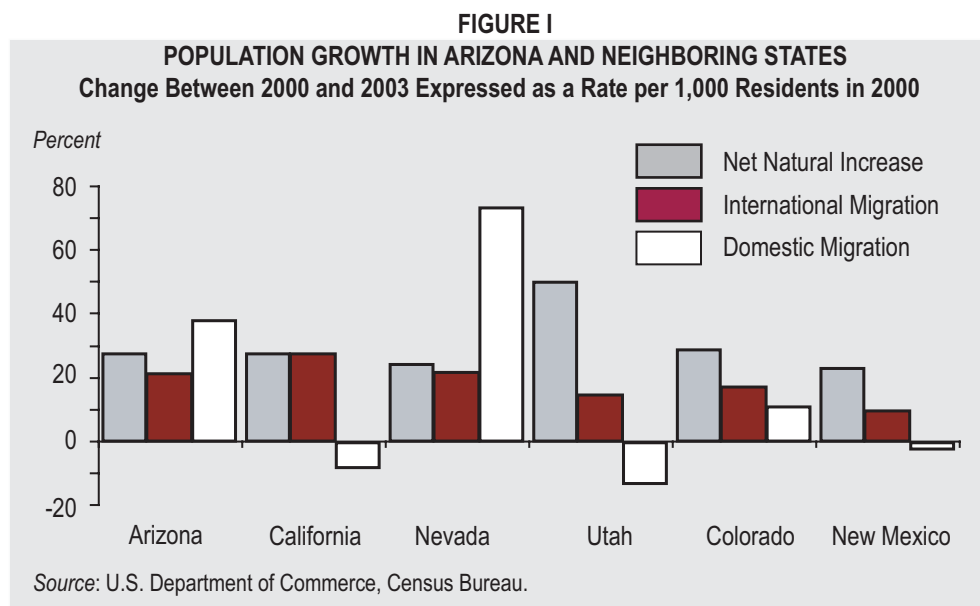
Only Florida had a higher number of net

internal migrants (540,500) than Arizona (194,700). The net domestic migration rate was highest in Nevada (73 per 1,000 residents), followed by 38 in Arizona and 34 in Florida. Other states in the West with rates of at least 10 were Idaho, Oregon and Colorado. The Atlantic Coast states from Delaware to Florida and New Hampshire and Maine also had rates greater than 10. The most sizable net domestic out-migration rates were from the District of Columbia, New York, North Dakota and Illinois. In the West, Utah, California and New Mexico experienced net out-migration to other states.

Combined, net international and domestic migration totaled 306,300 in Arizona, fourth behind Florida (889,900), California (660,600) and Texas (546,700). Arizona's rate per 1,000 residents (60) ranked second to Nevada's 95. Florida's rate was 56, but the next highest was 32 in Georgia. Other states with high net migration rates included Oregon, Idaho and Colorado in the West, Texas, North Carolina, Delaware and New Hampshire. Several states had net out-migration, with the worst rates in the District of Columbia, North Dakota and Louisiana.

As seen in Figure I, most of the variation in population growth rates across states results from wide differences in net domestic migration. Utah is an exception, with a very high rate of net natural increase.

— Tom R. Rex
Research Manager



Economic growth began to accelerate in 2003

The pace of economic growth nationally and in Arizona began to accelerate in mid-to-late 2003. The growth rate of gross domestic product rose considerably during 2003 to a rate typical of the expansionary phase of the economic cycle. Other national indicators such as personal income and employment showed less improvement, staying well below expansionary-phase norms.

Per capita personal income growth nationally and in Arizona slowed in late 2000 and was negative throughout 2001, with declines in Arizona marginally greater than the national average. During 2002 and early 2003, modest growth was experienced nationally, with the figures in Arizona barely positive. Per capita personal income in Arizona as a percentage of the national average continued to fall during this period, reaching a cyclical low of 83.8 percent in first quarter 2003; in the prior economic cycle, the low had been 84.0 percent in fourth quarter 1992. In the middle two quarters of 2003, personal income growth accelerated, with the per capita figures in Arizona

marginally greater than the national total.

Employment growth (subject to revision in the next few months) also accelerated in 2003, but still was weak at the end of 2003. While national employment rose in each of the last five months of the year, the average monthly gain during this period was only 56,000. Monthly gains typically average around 250,000 during expansionary periods.

Nationally, employment declined during 17 consecutive months from March 2001 through July 2002. The average monthly loss during this period was 139,000. As of the end of 2003, the recovery period had lasted 17 months, but the average monthly change during this period was -5,000. Seven months of declines were registered, including six straight from February through July of 2003. Year-end 2003 employment still was marginally lower than at the end of 2002.

The employment recession lasted only nine months in Arizona, from April 2001 through December 2001. Nearly 4,000 jobs a month were lost during this period. Gains during

2002 were modest, averaging less than 2,000 per month. While the gains during 2003 were greater at nearly 4,000 per month, this pace still was far short of the norm for an expansionary period. The annual growth rate reached 2.0 percent at the end of the year. The year-end growth rate in Pima County also was 2.0 percent; it was a little higher in Maricopa County at 2.4 percent.

Retail sales also reflect the strengthening pattern during 2003, with growth rates accelerating beginning in May in Maricopa County and in September in Pima County. Annual figures through November reflect a substantial rebound in the Phoenix area from the low figures of 2001 and 2002, but still short of the growth rates experienced during the 1990s. A lesser rebound occurred in the Tucson area. Sales growth hardly slowed during the recession in the balance of the state and thus did not accelerate in 2003.

— Tom R. Rex
Research Manager

Business Conditions Index: employment up in January

The seasonally adjusted Arizona Business Conditions Index rose to 68.2 in January from 66.1 the previous month. An index reading over 50 indicates that the local economy is growing; below 50 suggests a slowdown in the overall level of economic activity in the near term.

ANALYSIS

After months of increased output with little change in the employment scenario, the tension between the two has finally broken. The employment component of the overall index rose by 14.3 points to reach 70.3. While the overall economy began to show a strong growth trend in July 2003, the employment component had been sluggish, with productivity driving output upward. That was not a sustainable situation, and it is good to see the balance restored by employment being pulled upward, rather than by output dropping.

The new orders component fell slightly to 69.6, but is still in a healthy growth range. The delivery times from suppliers component of the index dropped significantly — by 9 points, to settle at 58.1. Other than the Prices Index, which is a separate entity, it was the worst performing component.

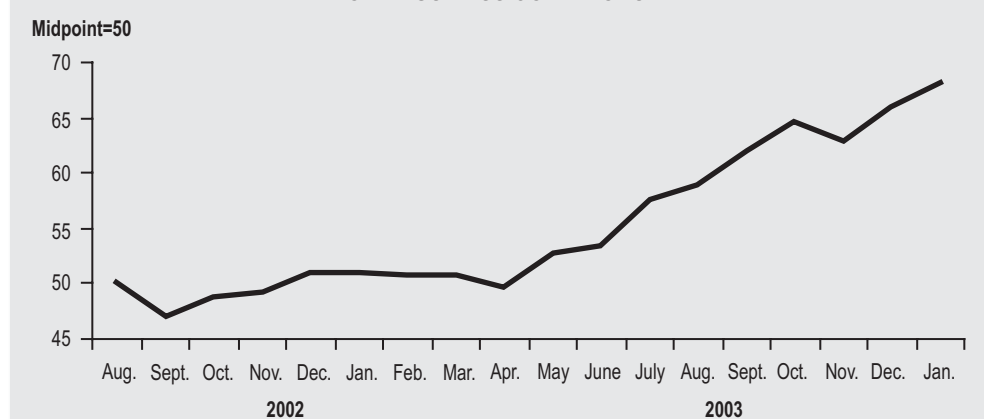
The Prices Index fell slightly to a level of 57.7. There has not been much movement in the Prices Index for several months, so no concerns about inflation are evident. During the last recession, the Prices Index dropped into the 40s, reflecting weak demand in the economy.

At this point, it appears as though economic growth has finally taken hold. It will

take a couple of months of this type of performance in the Arizona Business Conditions Index before it can be said that our economic worries are over.

— Dawn McLaren
Research Economist
Bank One Economic Outlook Center

FIGURE I
ARIZONA BUSINESS CONDITIONS INDEX*



*Excludes Prices Index

Source: Bank One Economic Outlook Center, L. William Seidman Research Institute, W. P. Carey School of Business, Arizona State University.

Arizona Leading Index slips in January

The Bank One Arizona Index of Leading Economic Indicators fell in January to 123.9, which is 0.9 percent below the revised 125.0 number for the previous month and 4.1 percent above the January 2003 number of 119.0 (1987 = 100).

Index components that declined from the previous month were the inflation-adjusted value of Maricopa County residential building permits, hours worked in manufacturing, delivery times, the inflation-adjusted value of the M2 money supply, new orders and materials inventories. Employment from the Business Conditions Survey and production were positive. Sensitive materials prices were neutral.

It was difficult to access the drop in the Leading Index for January because of data problems. Sensitive materials prices were unavailable, therefore they were recorded as neutral. However, the recent trend has been positive as manufacturing ramps up production.

Building permits presented the biggest problem because of a change in the fee structure in Queen Creek. These and other kinds of changes by municipalities have caused problems before, resulting in a large numbers of permits being taken out in advance of fee increases. The problems can persist for some time after a change, although the biggest impact is around the time of the change. Permit activity is artificially inflated in the months leading up to the change, culminating in a large lump just prior to it and a significant drop in activity for some months afterwards. The index is impacted because the direction and magnitude of the contribution of a component is dependent on the direction and magnitude of the month-to-month change of the component. Thus, the index was artificially inflated in December and artificially depressed in January.

The magnitude of the problem is obvious based on Queen Creek's past activity. The city permitted \$131 million in residential permits for all of 2002 — and \$146 million for the month of December 2003 alone. The city averaged \$24 million a month in the other 11 months of 2003, and had \$2 million in permits for January 2004. The average for the first 11 months in 2003 was clearly higher than the average of almost \$11 million a month in 2002, which suggests that permit activity was being influenced for much of 2003 and not just in December. Phoenix in December of 2003 permitted \$139 million in

residential permits, so the disturbance to the series was the equivalent of adding the activity for another Phoenix in one month — and then taking it away in the next month.

It is difficult to tell if the index would have been positive or negative for January without the data problems. Sensitive materials prices are clearly headed upward, and for much of the last few months they have been a strong contributor. Building permits were still lower for January (even without Queen Creek) but the magnitude of the drop was cut almost in half.

It is also important to remember that the Leading Index is intended primarily to forecast changes in the direction of the economy. It does have information relevant to the strength of the economy, which is why it is published monthly rather than only when it forecasts a recovery or a recession. But if the

index is constructed correctly, it is optimized for viewing economic turning points.

The most encouraging news from the index this month is the strong showing of the employment component. The biggest danger to the national economy right now is the lack of job growth. The state picture has been better than the national for some time, and the employment component suggests that improvement will continue at the state level. It also gives us some hope for the national economy as well.

— Tracy Clark

Associate Director

Bank One Economic Outlook Center

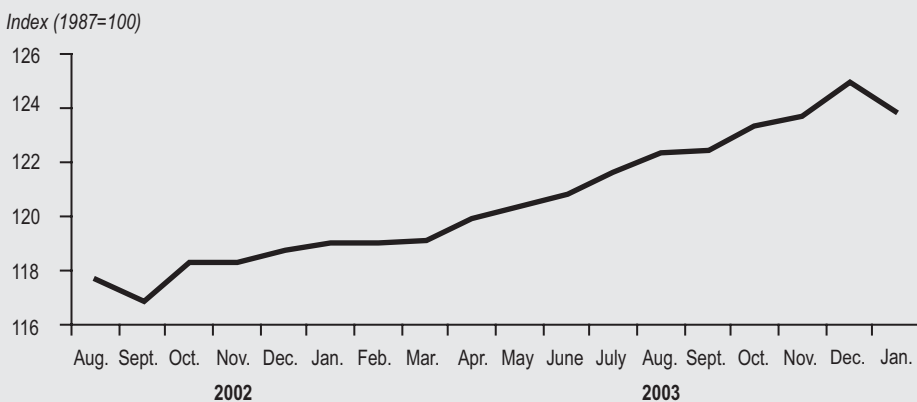
TABLE 1
NET CONTRIBUTION OF INDIVIDUAL COMPONENTS TO THE ARIZONA INDEX OF LEADING ECONOMIC INDICATORS*

	October	November	December	January
Delivery Time*	0.00	0.00	0.22	-0.18
Inventory Levels*	0.23	-0.01	0.00	-0.01
New Orders*	0.10	-0.02	0.07	-0.03
Production*	0.05	-0.07	-0.01	0.09
Employment*	-0.07	-0.03	0.03	0.34
Residential Building Permits	0.09	-0.21	0.64	-0.78
Average Workweek, Manufacturing	-0.04	0.24	0.00	-0.21
Money Supply	-0.12	0.00	-0.14	-0.13
Change in Sensitive Materials Prices	0.49	0.33	0.24	0.00

* 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 1
ARIZONA INDEX OF LEADING ECONOMIC INDICATORS



Source: Bank One Economic Outlook Center, L. William Seidman Research Institute, W. P. Carey School 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	January	123.9	125.0 r	-0.9	4.1	NA	NA
BUSINESS CONDITIONS INDEX							
Arizona	January	68.2	66.1	3.2	33.7	NA	NA
BUILDING PERMITS (Thousands of \$)							
Maricopa County	December	1,019,780	730,263	39.6	51.8	10,067,956	15.9
Pima County	December	166,800	141,426	17.9	34.4	1,770,827	17.3
Balance of State	December	245,081	175,304	39.8	30.8	2,858,286	22.6
Arizona	December	1,431,661	1,046,993	36.7	45.6	14,697,069	17.3
TOTAL HOUSING UNITS AUTHORIZED							
Maricopa County	December	4,683	3,583	30.7	38.7	47,662	8.8
Pima County	December	697	674	3.4	-20.3	9,514	6.7
Balance of State	December	1,895	1,430	32.5	54.2	22,098	20.6
Arizona	December	7,275	5,687	27.9	32.8	79,274	11.5
HOME SALES							
Maricopa County – Number.....	December	13,340	9,150	45.8	18.7	123,000	15.4
Maricopa County – Median Price(\$).....	December	159,900	158,425	0.9	6.7	155,000	7.3
HOUSING AFFORDABILITY INDEXES							
Metropolitan Phoenix – New Homes	4th Quarter	111	110	0.9	-3.5	NA	NA
Metropolitan Phoenix – Resale Homes	4th Quarter	126	120	5.0	-1.6	NA	NA
MORTGAGE RATES (30-year Fixed)							
Maricopa County	January	5.3	5.5	-3.6	-5.4	NA	NA
POPULATION ESTIMATES (Thousands)							
Maricopa County	4th Quarter	3,439	3,412	0.8	3.0	NA	NA
Pima County	4th Quarter	913	907	0.6	2.1	NA	NA
Balance of State	4th Quarter	1,353	1,342	0.9	3.1	NA	NA
Arizona	4th Quarter	5,704	5,660	0.8	2.9	NA	NA
RETAIL SALES (Millions of \$)							
Maricopa County	November	2,740	2,581	6.1	7.6	28,821	5.2
Arizona	November	4,043	3,835	5.4	7.6	42,632	5.0

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, W. P. Carey School of Business, Arizona State University. Retail sales data are from the Arizona Department of Revenue.