

AZB ARIZONA BUSINESS

ARIZONA STATE UNIVERSITY'S MONTHLY NEWSLETTER ON THE ARIZONA ECONOMY

Population growth should slow in near term

Revised population estimates and projections

Population growth in Arizona continues to gradually slow from the 1996-97 peak. More substantial slowing is expected in the next several quarters in response to the slowing of economic growth, according to new estimates and projections made by the Center for Business Research (CBR). In addition to providing estimates of the population since the 2000 census, the CBR also revised the historical time series to be consistent with the 2000 census. The CBR is the sole source of quarterly estimates of the population in Arizona, and will resume releasing quarterly estimates about one month after the end of each quarter. Population projections have been updated through 2020. After more detailed information from the 2000 census becomes available in summer 2002, the projections will be extended to 2030.

REVISIONS TO ESTIMATES

Substantial revisions to the population estimates (and projections) were necessitated by the 2000 census count being so much higher than expected in Arizona and across the nation. According to national data released by the U.S. Bureau of the Census, the net undercount in the 2000 census was much less than in 1990 or preceding censuses (e.g., a net undercount of 0.12 percent in 2000 compared to 1.65 percent in 1990). In 1990, the estimated undercount was larger in Arizona than the national average, but geographic detail on the 2000 estimated undercount has not been released. Thus, the CBR used the difference in the national undercount between 1990 and 2000 to upwardly adjust the Arizona census counts for 1990, 1980, 1970. Special mid-decade censuses also were adjusted. This allows the entire time series of historical population estimates to be consistent with the 2000 census. Previously, the CBR had assumed only that the 1990 census for Maricopa County needed to be adjusted.

The series of annual and quarterly population estimates were fitted to these adjusted census counts. In doing so, the CBR modified the method of estimating population that it had used in the past. Unavailability of data needed for the earlier method was the prime reason for the change, but the poor performance of the prior methodology also contributed to this decision.

The CBR now is calculating the population by the standard housing-unit method (HUM). The Arizona Department of Economic Security (DES), which issues "official" estimates (and projections) that must be utilized by state government, also uses HUM as one of its methods. The CBR makes different assumptions from those made by DES in HUM, such that the CBR's estimated population for any given year could be noticeably different from that of DES.

HUM has three primary components: number of housing units, occupancy (vacancy) rate, and average household size. The number of housing units multiplied by the occupancy rate equals the number of occupied housing units, which is multiplied by average household size to estimate the population living in households. To this is added an estimate of the number of people living in group quarters (such as college dormitories, nursing homes and prisons). This estimate of total population when compared to a previous quarter's or year's estimate provides population change, which can be divided into net natural increase (births minus deaths) and net migration (a derived figure including net immigration from elsewhere in the United States and net immigration from other countries).

In all regions of the state, the number of housing units can be estimated by adding lagged building permits for new housing units (less demolitions) — collected by the Arizona Real Estate Center — to the housing stock of the latest census. For Maricopa County, housing completions, which provide a better estimate of the housing stock, are available from the Maricopa Association of Governments (MAG). Between 1990 and 2000, the estimated change in housing units in Maricopa County based on housing completions did not need to be adjusted much to match the change indicated by

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the censuses. This adjustment was a little larger for Pima County and was quite large for the balance of the state as a whole.

While updated data on the group quarters population are not available, this subgroup represents just 1.5 percent of the total population. Thus, estimates of this subpopulation cannot introduce much error into the population estimates.

Data on births and deaths are available from the Arizona Department of Health Services. Therefore, the split in population change between net natural increase and net migration is as accurate as the total population estimate.

Estimating average household size and the vacancy rate are much more problematic. The population estimate is sensitive to small changes in each of these components. Average household size in Maricopa County in 2000 was 2.67 persons per household. With more than 1.1 million occupied housing units, an error of just 0.01 in the estimate equates to more than 11,000 people. Other than the censuses, no information exists on average household size. While household size is correlated to a variety of factors, such as the age distribution of the population, the racial/ethnic composition, and the economic cycle, little information is available annually on such factors. Thus the estimate of persons per household is little more than an educated guess for periods subsequent to the most recent census. Because of the lack of updated data, DES assumes no change in the household size from the most recent census. The CBR assumes that the trend experienced between the last two censuses generally will continue. This equates to rising household size in Maricopa County, small increases in size in Pima County, and decreasing size in the balance of the state.

Estimates of the vacancy rate exist for Maricopa and Pima counties (from on-going housing studies produced by ASU and the University of Arizona), but are not available for the rest of the state. The estimates from the housing studies, however, have two limitations. First, the vacancy rates are estimates based on the real estate definition of vacancy, which essentially is an unoccupied traditional housing unit actively marketed for rent or for sale. The census vacancy rate definition is much broader, including, for example, housing units already rented or sold but not yet occupied and housing units owned by households whose primary home is elsewhere. Thus, the census vacancy rate always is much

higher than that estimated in real estate studies. Moreover, the historical relationship between the census vacancy rates and the housing study rates has not been consistent. Second, the housing studies are subject to considerable survey error and may only be accurate, for example, at saying that the vacancy rate is 7 percent or 6 percent. But a difference in vacancy rate of 0.1 percentage points equates to about 3,500 people in Maricopa County, given the approximately 1.3 million housing units and an average persons per household approaching 2.7.

Thus, while the housing studies provide some guidance regarding the direction of vacancy rates, using the estimate from the housing studies could result in substantial error in any given year. In recent years, DES has used the vacancy rate from the housing studies to modify the vacancy rate in Pima and Maricopa counties, while holding the vacancy rate constant in the other counties. The CBR, in contrast, estimates the change in the vacancy rate throughout the state, using the housing studies as just one input to making this estimate.

Given the sensitivity of the population estimate to two components for which little timely information is available, the CBR uses employment change as a guide to what the population change in the most current

period might have been. Research has indicated that the difference in employment growth rates between a local area and the national average can be used to estimate net migration. It takes several months to a year for changes in the employment situation to result in changes in population growth.

The CBR will release a preliminary estimate of population growth quarterly. These estimates will be revised as additional data become available. For example, since the MAG data on housing completions is finalized for the prior four quarters each August, the CBR's preliminary estimate of the housing stock will be revised for these quarters when the estimates for the third quarter are produced. As more quarters of vacancy rate estimates become available from the housing studies, the trend/cycle in the vacancy rate becomes more apparent, as do any estimates that may reflect unusually large sample error. The county employment data from the U.S. Bureau of Economic Analysis is revised and updated each year in May, potentially resulting in an adjustment to the population estimates of the prior few quarters. Information on births and deaths is slow to be released, thus must be estimated for the latest quarter or two; it also is subject to small revision after the end of the calendar year.

TABLE 1
ANNUAL POPULATION CHANGE
As of July 1, In Thousands

<i>Estimates</i>	Total Change				Net Migration			
	<i>Arizona</i>	<i>Maricopa</i>	<i>Pima</i>	<i>Balance</i>	<i>Arizona</i>	<i>Maricopa</i>	<i>Pima</i>	<i>Balance</i>
1991.....	101	58	13	29	61	34	8	20
1992.....	108	61	16	32	69	37	10	22
1993.....	117	67	17	32	81	45	12	23
1994.....	141	89	19	33	105	67	15	24
1995.....	165	107	21	38	128	83	16	30
1996.....	166	114	18	34	129	88	14	26
1997.....	162	115	15	32	123	89	11	24
1998.....	157	111	15	31	119	84	11	24
1999.....	154	105	17	32	113	76	12	25
2000.....	152	102	16	33	109	72	11	26
2001.....	154	99	21	35	108	66	15	27
Projections								
2002.....	145	94	17	34	98	60	12	26
2003.....	133	86	17	30	86	52	12	22
2004.....	150	100	18	32	102	65	13	24
2005.....	170	115	20	35	122	80	15	27
Annual Averages by Economic Cycle								
1971-75.....	99	55	21	23	77	44	17	16
1976-82.....	89	54	15	21	63	40	11	12
1983-91.....	100	64	14	22	64	43	8	13
1992-2002.....	147	97	17	33	107	70	12	25
2003-2011.....	155	105	19	31	105	68	14	23
2012-2020.....	159	108	20	31	105	67	15	23

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

If the American Community Survey (ACS) becomes fully operational in 2003, as planned by the Census Bureau, an additional source of annual estimates of the vacancy rate and household size will become available. However, the survey error in the ACS will be too great to directly use these survey results to estimate population. Instead, these survey results will be used in the same manner as the vacancy rates from the housing studies: as a general guide that becomes more useful as results for later periods become available.

HISTORICAL ESTIMATES

The CBR revised its annual time series of population estimates for Arizona, Maricopa County, Pima County and the balance of the state back to 1970. Most of the revision consisted of raising the 1970, 1980 and 1990 census counts to make them more comparable to the 2000 count. Annual changes in population were revised only slightly for the 1970s and 1980s, with the annual pattern of growth little affected. In contrast, the annual change in the estimates for the 1990s were substantially adjusted to fit the 2000 census count. The revised annual time series for total population change and net migration in the 1990s are shown in Table 1.

Net migration to Maricopa County peaked in the 1996-97 fiscal year and has gradually declined since then. In every year since 1993-94, net migration has been

higher than the cyclical peaks of 55,000 to 58,000 experienced in the early 1970s, late 1970s and mid-1980s. Average annual net migration so far during the 1992 to 2002 economic cycle has been about 60 percent higher than the average of each of the prior three cycles. With net natural increase also rising since the early 1990s, the annual average total population change between 1992 and 2001 was substantially higher than in earlier cycles.

In the 13 less populous counties as a whole, net migration during the last economic cycle also was substantially higher than in any prior cycle. The peak occurred in 1994-95, but net migration in the most recent years was roughly comparable to the figures of the prior several years. Since 1992-93, annual net migration has been equal to or higher than the peak year prior to 1990. Unlike Maricopa County, net natural increase decreased during the 1990s.

Pima County's annual average net migration between 1992 and 2001 only matched the average of the three prior economic cycles. The annual estimates show more variability than in Maricopa County or the balance of the state. The peak was in 1994-95 but the 2000-01 estimate was close to the peak, with lesser growth in the intervening years. Net natural increase slowed a little during the 1990s, but then accelerated in the last couple of years.

The Census Bureau has not yet revised their annual estimates of the population for

1990 to 2000. A preliminary series has been produced by the U.S. Bureau of Economic Analysis (BEA) for states. Annual estimates from the BEA differ substantially from the CBR estimates. The BEA did not adjust the 1990 census count to reflect the differing rates of net undercount between the 1990 and 2000 censuses. It also did not use the mid-decade census counts. Thus, the BEA's annual pattern relative to that of the CBR shows much more growth in the first half of the decade and less in the second half.

The BEA and Census Bureau estimates reflect net in-migration estimated by the Internal Revenue Service (IRS). However, the IRS estimates do not include immigration from other countries. It appears that immigration to Arizona became much more substantial after the Mexican peso devaluation of 1994 and after changes in Border Patrol practices along the U.S.-Mexico border in the early-to-mid-1990s. At the same time, job growth in Arizona was accelerating sharply and a workforce shortage was developing due to the lowered number of U.S. births during the 1970s.

ESTIMATES SINCE 2000

Quarterly estimates of population growth in Maricopa County since the 2000 census are shown in detail in Table 2. (While precise figures and numbers rounded to the nearest 100 are shown in this table, all of these numbers represent estimates that have a substantial margin of error.) Although down

TABLE 2
MARICOPA COUNTY POPULATION ESTIMATES IN DETAIL

Year and Quarter	Housing Units	Occupancy Rate	Occupied Units	Persons Per Household	Population in Housing Units	Population in Group Quarters	Total Population	Population Change	Net Natural Increase	Net Migration
2000 2.....	1,260,579	0.9050	1,140,824	2.6754	3,052,161	45,000	3,097,200	25,100	7,900	17,200
2000 3.....	1,270,441	0.9040	1,148,479	2.6785	3,076,200	45,300	3,121,500	24,300	7,400	16,900
2000 4.....	1,279,843	0.9035	1,156,338	2.6815	3,100,721	45,600	3,146,300	24,800	8,300	16,500
2001 1.....	1,290,004	0.9025	1,164,228	2.6845	3,125,370	45,800	3,171,200	24,900	9,200	15,700
2001 2.....	1,299,377	0.9020	1,172,038	2.6875	3,149,853	46,100	3,196,000	24,800	8,400	16,400
2001 3.....	1,310,849	0.9000	1,179,764	2.6905	3,174,156	46,400	3,220,600	24,600	8,000	16,600

TABLE 3
QUARTERLY POPULATION AND POPULATION CHANGE
(In Thousands)

Year and Quarter	Population				Total Change				Net Migration			
	Arizona	Maricopa	Pima	Balance	Arizona	Maricopa	Pima	Balance	Arizona	Maricopa	Pima	Balance
2000 1.....	5,130.4	3,072.1	843.7	1,214.7	35.5	24.8	3.2	7.6	24.1	16.5	1.9	5.8
2000 2.....	5,169.0	3,097.2	847.8	1,224.0	38.6	25.1	4.1	9.3	27.5	17.2	2.8	7.4
2000 3.....	5,207.4	3,121.5	852.9	1,233.0	38.4	24.3	5.1	9.0	27.6	16.9	3.8	6.9
2000 4.....	5,245.4	3,146.3	857.7	1,241.4	38.0	24.8	4.8	8.4	26.7	16.5	3.6	6.6
2001 1.....	5,285.0	3,171.2	863.5	1,250.4	39.6	24.9	5.8	9.0	27.0	15.7	4.3	7.1
2001 2.....	5,323.5	3,196.0	868.5	1,259.0	38.5	24.8	5.0	8.6	26.5	16.4	3.5	6.5
2001 3.....	5,362.2	3,220.6	873.5	1,268.2	38.7	24.6	5.0	9.2	27.1	16.6	3.6	7.0

Source (Tables 2 and 3): Center for Business Research, L. William Seidman Research Institute, College of Business, Arizona State University.

a bit from the mid-1998 to mid-2000 peak, growth in the housing stock continues at a rapid pace. After rising from 1990 through 1997, occupancy rates are assumed to have fallen since then. The average household size probably rose throughout the 1990s, with the rate of increase faster in the last half of the decade (at least in part due to the increasing number of immigrant families, which have a larger average household size than the domestic population). This pace of increase is assumed to have continued past the 2000 census.

In the six quarters since the 2000 census, net migration to Maricopa County is estimated to have averaged 16,500 per quarter, with only a marginal downward trend. However, the economic slowdown that began in late 2000 should lower population growth significantly over the next several quarters, particularly in 2002.

Housing construction also remains strong in Pima County, hardly down from the cyclical peak. The average household size is assumed to continue to rise slightly, while occupancy rates are assumed to be nearly flat, following a gradual decrease from the 1995 peak into 2000. Employment growth was stronger from early 1999 until late 2000. Thus, net migration during the 2000-01 fiscal year was higher than that of the prior few years, averaging 3,800 per quarter. The estimate for third quarter 2001 was 3,600. Population growth in Pima County should slow over the next couple of quarters, then become steady.

In the balance of the state, housing construction has dropped from the peak as in Maricopa County. Average household size probably continues to drop, while occupancy rates likely are nearly steady after declining from 1996 through 2000. Employment growth during 2000 was a little higher than it had been, leading to a small increase in net migration from mid-2000 to date. Net migration during third quarter 2001 was estimated at 7,000, similar to the estimates of the prior five quarters (see Table 3). Population growth probably will slow only marginally in coming quarters.

DES has released its estimates of the population in mid-2001. Despite differing assumptions about the change in vacancy rates and average household size, the DES estimates are close to those of the CBR. The CBR estimates are slightly lower for Pima County, but slightly higher in the rest of the state.

PROJECTIONS

The CBR's population projections have been updated to reflect the rapid growth during the 1990s. As seen in Table 4, numeric population growth is expected to rise a little in the next two decades from the record level of the 1990s. The middle scenario projection is closer to the high scenario than the low scenario, indicating that the chance of considerably slower growth — more like that of the 1970s and 1980s — is assessed to be higher than the chance of faster growth.

In Pima County, the new projection series is only a little higher than the old series, with the difference resulting from an upward adjustment to the projections of net natural increase. The 2000 census count was nearly identical to the CBR's projection, suggesting that the projections through 2020 needed little adjustment. Net migration is anticipated to gradually but modestly rise through 2020, while the number of births and deaths are both expected to advance, leaving net natural increase constant.

The CBR makes both a trend and cyclical forecast. The latter is meant to show how growth could vary from year to year by inserting economic cycles into the projections. The timing of such cycles is highly speculative. These cyclical projections were included in Table 1, so that a comparison of the projections to the estimates easily could be made.

The population projections for the rest of the state were revised upward, reflecting much higher 2000 census counts than had been expected. In Maricopa County, average annual net migration is expected to hold steady over the next several years, before beginning a slow decline. This decrease occurs under the assumption that the rapid immigration since the mid-1990s will

prove to be an aberration mostly tied to a shortage of young American-born workers and temporary political factors. The labor shortage will gradually dissipate, due to an increase in U.S. births during the 1980s.

Thus, compared to the old projections for Maricopa County, the new projections show substantially higher net migration in the next several years, but then the difference narrows. Because so much of the unanticipated rapid growth during the 1990s consisted of young adults, the number of projected births has been revised substantially upward. With only a small upward revision to the number of deaths, an acceleration in net natural increase offsets the projected decrease in net migration. The result is a small increase in numeric population growth over the next several years compared to that of the prior cycle, followed by steady gains (apart from the economic cycle).

In the 13 less populous counties, projected net migration follows the same pattern as in Maricopa County: steady for several years, then gradually decreasing. Like Pima County, net natural increase is expected to be steady (compared to some decrease during the 1990s). Given the high retirement-aged population in many of the less populous counties, the number of deaths is high relative to the number of births.

The CBR projections are the first to be tied to the 2000 census results. DES is in the process of updating its population projections, which will extend to 2052. They will be revised again after the more detailed data from the 2000 census becomes available.

The report "Population Estimates and Projections" is available online at www.cob.asu.edu/seid/cbr.

— Tom R. Rex
Research Manager

TABLE 4
LONG-TERM POPULATION PROJECTIONS BY SCENARIO
(As of July 1, In Thousands)

	1980	1990	2000	2010			2020		
				Low	Middle	High	Low	Middle	High
Total Population									
Maricopa County	1,547	2,169	3,097	3,800	4,145	4,300	4,400	5,210	5,600
Pima County	542	680	848	975	1,040	1,090	1,075	1,240	1,390
Balance of State	696	898	1,224	1,400	1,550	1,575	1,550	1,855	1,975
Arizona	2,785	3,747	5,169	6,175	6,735	6,965	7,025	8,305	8,965
Ten-Year Change									
Maricopa County	546	622	928	703	1,048	1,203	600	1,065	1,300
Pima County	183	138	168	127	192	242	100	200	300
Balance of State	228	202	326	176	326	351	150	305	400
Arizona	957	962	1,422	1,006	1,566	1,796	850	1,570	2,000

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

Third quarter building permit activity slows

Because third quarter 2001 ended shortly after Sept. 11, construction activity in Arizona was affected more by the changing economic environment than the horrific events. In spite of the worsening economic environment, the single-family market slowed slightly from \$1.9 billion in the second quarter 2001 to \$1.8 billion, but was still ahead of last year's \$1.6 billion. The commercial sector improved from \$575 million in second quarter 2001 to \$689 million, but represented only 22 percent of the total construction activity of \$3.1 billion. Without the Intel project in Chandler, industrial activity fell from last quarter's \$290 million to \$37 million.

Phoenix was the most active area of development, with nearly 27 percent of Arizona's construction market, while the 12 communities listed in Table 1 represented 74 percent of the state's recorded activity. Other areas of significant development included unincorporated Pinal County (\$62 million), Goodyear (\$60 million), Flagstaff (\$58 million), El Mirage (\$48 million), unincorporated Yavapai County (\$38 million) and Lake Havasu City (\$36 million).

RESIDENTIAL

Home buyers have remained the one bright light in the growing economic storm. The primary concern is whether the storm will

extinguish the light. In the wake of the events of Sept. 11 and continued slowing of the economy, job layoffs increased and consumer confidence began to decline. There are many reasons for the current housing market, ranging from lingering vestiges of a prosperous economy with its commensurate consumer confidence, to home buyers taking a last chance to satisfy their housing dreams with low mortgage interest rates.

Leading areas of single-family development were Phoenix (1,651 permits), Gilbert (1,061 permits) and Mesa (793 permits). The West Valley communities of Surprise (798 permits), Avondale (592), El Mirage (476) and Goodyear (398) now account for 27 percent of the new home market.

The single-family housing market has remained stable in Pima County (see Table 2). Tucson authorized 655 homes; unincorporated Pima County, 537; Marana, 244; and Oro Valley, 203. The average permit value in Pima County increased from last year's \$130,760 to \$144,100, while in Maricopa County it rose from \$139,390 to \$148,670.

Pinal County (739 permits) accounted for 6 percent of the state's new home market, while Mohave (552 permits) and Yavapai (509 permits) each represented 4 percent. In these counties the unincorporated areas are important markets, with 480 permits in unincorporated Pinal County, 219 in

Yavapai and 108 in Mohave. Specific communities included Lake Havasu City (295), Casa Grande (130), Prescott (126), Apache Junction (118), and Prescott Valley (96). Average permit values were \$169,150 in Prescott, \$189,815 in Sedona, \$126,290 in Flagstaff, \$120,475 in Casa Grande, and \$97,815 in Lake Havasu City.

COMMERCIAL

Only the office-building sector slowed in the third quarter, while apartments and

TABLE 1
REPORTING UNITS WITH GREATEST
TOTAL VALUE OF BUILDING PERMITS
Third Quarter 2001

Reporting Unit	Value (in millions)
Phoenix.....	\$838
Scottsdale.....	214
Gilbert.....	199
Chandler.....	184
Mesa.....	180
Unincorporated Maricopa County.....	146
Unincorporated Pima County.....	136
Tucson.....	129
Surprise.....	97
Avondale.....	84
Glendale.....	79
Peoria.....	68

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

TABLE 2
KEY SECTOR CONSTRUCTION ACTIVITY
Third Quarter 2001, Second Quarter 2001 and Third Quarter 2000

COMMERCIAL

	Single-family		Apartments ^a		Office Buildings ^b		Retail Stores ^c		Industrial	
	Number of Permits	Dollar Value (000)	Number of Permits	Dollar Value (000)	Number of Permits	Dollar Value (000)	Number of Permits	Dollar Value (000)	Number of Permits	Dollar Value (000)
MARICOPA COUNTY										
3rd Quarter 2001.....	8,407	1,249,902	2,212	143,414	89	109,682	124	153,397	43	28,626
2nd Quarter 2001.....	9,615	1,360,070	2,060	103,119	107	129,113	108	104,124	30	264,994
3rd Quarter 2000.....	8,263	1,151,795	1,946	91,049	99	165,401	137	121,940	52	75,096
PIMA COUNTY.....										
3rd Quarter 2001.....	1,724	248,430	0	0	24	10,682	9	6,456	2	616
2nd Quarter 2001.....	1,655	245,172	8	516	23	7,671	18	6,994	3	13,846
3rd Quarter 2000.....	1,564	204,504	50	2,794	14	14,349	17	11,858	3	9,332
REST OF ARIZONA.....										
3rd Quarter 2001.....	2,839	314,487	281	4,977	41	32,528	40	14,757	19	7,434
2nd Quarter 2001.....	3,006	330,373	97	2,003	38	9,144	42	16,713	22	11,139
3rd Quarter 2000.....	2,384	261,501	46	3,672	35	12,419	39	13,359	33	9,851
ARIZONA TOTAL.....										
3rd Quarter 2001.....	12,970	1,812,819	2,493	148,391	154	152,892	173	174,610	64	36,676
2nd Quarter 2001.....	14,276	1,935,615	2,165	105,638	168	145,928	168	127,831	55	289,979
3rd Quarter 2000.....	12,211	1,617,800	2,042	97,515	148	192,169	193	147,157	88	94,279

^a Five or more housing units

^b Office, bank, medical and professional buildings

^c Shopping centers and other mercantile buildings

Source: Arizona Real Estate Center, L. William Seidman Research Institute, College of Business, Arizona State University, from U.S. Department of Commerce, Bureau of the Census, County Business Patterns, 1998.

retail improved (see Table 2). The office building sector has been heavily impacted by the weakening economy and increased competition from new projects resulting in higher vacancies and slower rent growth. Although only one permit exceeded \$5 million (\$6.9 million), Phoenix led all areas at \$43 million, followed by Glendale at \$28 million and Scottsdale at \$16 million. The apartment market in Maricopa County improved to 2,212 units, but was still well below the 3,518 units authorized in first quarter 2001. The primary areas of activity were Phoenix at 1,245 units, Scottsdale at 339 units and Chandler at 280 units. Retail activity also improved, with \$84 million in Phoenix (including Target Corp.'s single permit valued at \$55 million). Remodeling of existing space totaled \$53 million, with \$16 million in Scottsdale and \$9 million each for Chandler and Tempe. Permits for development of parking garages totaled \$32 million, with \$29 million in Phoenix.

Although the commercial sector was extremely limited in Pima County, it did show improvement in other areas of Arizona (see Table 2). Apartment activity was reported in Sierra Vista (76 units) and Sedona (12 units). Office building activity was reported in Flagstaff (\$20 million) and Yuma (\$6.5 million).

Even before the events of Sept. 11, the hotel/motel sector was heavily impacted by a weak economy, as reflected in a mere \$1.8 million in authorized activity for the entire state.

INDUSTRIAL AND OTHER

Industrial development appears to have

appreciably slowed to \$29 million, but this is better than last quarter's \$19 million (without the \$246 million of the Intel plant in Chandler). Phoenix reported \$14.6 million, followed by Tolleson at \$5 million.

Construction of educational and other public facilities fell from \$74 million in second quarter 2001 to \$37 million, with \$9 million in Phoenix and \$6 million in Glendale. The single largest permit was issued by Phoenix, valued at \$95 million for Maricopa County's correctional facility.

LOOKING AHEAD

Whenever the economy and/or real estate market are showing signs of slowing, people begin to look forward to better times. Although the economy is now in a recession, it is expected to be a limited and brief one, with recovery apparent by the second quarter of 2002. The real estate

recovery is based on three fundamental factors. The first is that the economic recovery does begin as expected with the resultant increase in job growth, employment and consumer confidence. The economically confident consumer has been the driving force of the recent housing boom; this confidence must resume in order to add stimulus to the future housing market. Although low mortgage interest rates have been very important in sustaining the market, they do not need to stay at current levels because affordability can be maintained at interest rates of 8 percent. The final factor is that future traumatic events are limited as they impact the economy and the consumer psyche.

— Jay Q. Butler
Director

Arizona Real Estate Center

TABLE 3
ARIZONA HOUSING UNITS AUTHORIZED
Third Quarter 2001

	One Family	Mobile Homes	Duplex	3-4 Family	5 or More	Total
MARICOPA COUNTY.....	8,407	304	60	52	2,212	11,035
% Change, Previous Year	2	-12	400	-76	14	2
% Change, Previous Quarter	-13	0	67	-54	7	-9
PIMA COUNTY.....	1,724	287	34	36	0	2,081
% Change, Previous Year	10	39	467	71	-	13
% Change, Previous Quarter	1	-28	143	9	-	-4
REST OF ARIZONA	2,839	895	44	30	103	3,911
% Change, Previous Year	28	10	-24	-33	124	23
% Change, Previous Quarter	-6	-9	-4	88	7	-6
TOTAL, ARIZONA	12,970	1,486	138	118	2,315	17,027
% Change, Previous Year	6	-2	82	-59	13	6
% Change, Previous Quarter	-9	-12	44	-27	7	-8

Note: A dash indicates that a percent change could not be calculated because at least one period had no activity.

TABLE 4
ARIZONA BUILDING PERMITS
Third Quarter 2001

	Residential*		Commercial		Industrial		Other		Total	
	Number of Permits	Dollar Value (000)	Number of Permits	Dollar Value (000)	Number of Permits	Dollar Value (000)	Number of Permits	Dollar Value (000)	Number of Permits	Dollar Value (000)
MARICOPA COUNTY	10,539	1,309,825	977	551,330	43	28,626	7,681	444,729	19,240	2,334,510
% Change, Previous Year	0	9	-8	10	-17	-62	-5	45	-3	12
% Change, Previous Qtr.....	-13	-7	9	15	-43	-89	-30	-6	-20	-11
PIMA COUNTY	2,611	260,911	362	59,695	2	616	1,307	28,778	4,282	350,000
% Change, Previous Year	15	23	168	50	-33	-93	68	-50	34	10
% Change, Previous Qtr.....	-9	-1	24	52	-33	-96	-15	5	-9	2
REST OF ARIZONA	5,513	369,864	436	78,189	19	7,434	1,792	41,117	7,760	496,604
% Change, Previous Year	10	24	7	12	-39	-21	13	7	10	19
% Change, Previous Qtr.....	-8	-4	23	40	-14	-33	-10	2	-7	1
ARIZONA TOTAL	18,663	1,940,600	1,775	689,214	64	36,676	10,780	514,624	31,282	3,181,114
% Change, Previous Year	3	12	10	12	-27	-61	2	27	3	12
% Change, Previous Qtr.....	-11	-6	15	20	16	-87	-26	-5	-15	-8

* Includes mobile homes

Source (Tables 3 and 4): Arizona Real Estate Center, L. William Seidman Research Institute, College of Business, Arizona State University.

Government spending in Arizona lowest in nation

Expenditures on current operations by state and local governments in Arizona during the 1998-99 fiscal year were lower on a per capita basis than in any other state, 25 percent less than the national average. Current operations exclude spending on capital outlays, such as building roads, sewers and schools.

Public finance data are reported annually by the U.S. Bureau of the Census. The latest data are for fiscal year 1999, which ran from July 1, 1998 through June 30, 1999. (All subsequent references to years are for fiscal years). The Census Bureau data include information from state, county, city, school district and special district governmental entities. Since taxing and spending authority varies by state among governmental levels, the best comparison across states is to include all governments. In order to compare states, the government revenue and expenditure data must be normalized, such as by dividing it by population or personal income.

Many of the fiscal changes enacted during the 1990s in Arizona, such as tax cuts, are reflected in the latest data. Since 1999, additional tax reductions were implemented, but an increase in the sales tax, dedicated to education, also occurred.

To compare data over time, the public finance figures are adjusted for inflation, using the GDP implicit price deflator. The latest data are contrasted to those of 1986, which is a good comparison year in terms of the economic cycle and stability of the tax code. Between 1986 and 1999, increases in per capita government revenues and expenditures in Arizona ranked 48th among the 50 states. Only Alaska and Wyoming — both highly dependent on the slumping energy industry for government revenue — had lesser boosts over the 13-year period.

Per capita government revenues and expenditures in Arizona were well below the national average in 1999. From the 1960s through the 1980s, Arizona had ranked in the middle of the states.

Per person state and local taxes increased 18 percent in Arizona between 1986 and 1999, only half of the national average. Over the 13 years, per capita personal income (PCPI) rose 18 percent in Arizona, and per capita gross state product (PCGSP) gained 28 percent. Thus, despite a increase in per capita taxes, the burden of state and local taxes in Arizona was unchanged or fell

substantially, depending on the comparative measure. In contrast, per capita tax increases exceeded gains in PCPI and PCGSP nationally.

As ratios to the national average, each of the broad per capita revenue and expenditure measures for Arizona fell throughout the 1990s. The lowest ratios in the history of the series (which started in 1964) were reached in 1998 except in the current operations spending category, which was lowest in 1999. The lowest ratios prior to the 1990s were considerably higher than those of the late 1990s.

The per capita data do not reflect ability to pay. Thus, the government finance data sometimes are divided by personal income rather than population. Since Arizona is a relatively poor state, it compares lower on per capita than on revenues and expenditures per dollar of personal income. Even on the personal income measure, however, Arizona ranked 43rd on spending on current operations in 1999 at 12 percent less than the national average.

Use of the personal income measure does not acknowledge that a poor person on average has the same or greater needs for public services than someone of a higher income. In the March 2000 issue of *AZB*, Arizona was shown to have a fiscal need greater than the national average. Moreover, a relatively poor state that keeps government revenues and expenditures per dollar of personal income average-to-low hampers efforts to raise the standard of living of its residents.

A much more sophisticated method of comparing the tax burden across states (see the March 2000 issue for details) has not been performed on the latest data. Historically, this preferred method has shown Arizona's relative tax burden to be about halfway between the per capita and per personal income measures. Assuming this relationship continued in 1999, Arizona governmental revenue and spending was about 12 percent less than the national average based on the preferred method. Spending on current operations was about 19 percent lower than average. On all measures, the state ranked in the mid-40s.

IMPLICATIONS

Traditionally, government has provided a variety of public services, playing an important role in determining an area's

quality of life. Such public-sector services have an increasingly large role in economic development, particularly in competition for higher-paying jobs in the new economy.

In the old economy, low taxes were believed to be an important factor in private-sector decisions on locating new facilities and expanding or closing existing facilities. Even in the old economy, however, other factors such as wage levels were more important. Similarly, some public-sector goods, such as transportation, were deemed to be important. In the new economy, education and quality of life are much more important to economic development efforts, with cost factors, including taxes, becoming less important.

Education not only consumes the greatest share of government spending, but it is foremost in importance in the new economy. But on educational achievement and dropout measures, Arizona ranks near the bottom of the states. While spending levels are not the only cause of this poor achievement, government funding plays a role. Between 1986 and 1999, per capita education spending rose 7 percent in Arizona, compared to 42 percent nationally. Per capita spending in 1999 was 15 percent below the national average. The differential is even greater on a per pupil basis. Last year's voter-approved boost in the sales tax dedicated to education will not make up the differential from the national average.

On other measures of quality of life (other than climate and natural landscape) Arizona compares as average to below average. The public sector has an important role in providing other services that enhance quality of life and economic development. Public safety (police, fire, prisons), transportation, and social services are among these functions. In all of these categories, per capita spending between 1986 and 1999 did not keep pace with the national average.

Thus, as the economy evolves and there is an increasing demand for improved education and quality of life, Arizona is moving in the opposite direction in terms of its public-sector support for such endeavors. The negative effects already have been registered, in terms of prosperity measures such as wage and income levels (see the December 2001 issue of *AZB*). This deterioration has occurred despite improved economic development efforts in the 1990s that target better jobs in leading industries.

Reduced government spending is counter-productive to these economic development efforts.

REVENUE DETAIL

In 1999, total revenues available to state and local governments in Arizona totaled \$21 billion. Nearly \$4 billion came from the federal government, while state and local taxes were the source of \$12.2 billion. The balance came from current charges (user fees), interest earned, and miscellaneous other sources (see Table 1).

Total Arizona governmental revenue per capita in 1999 was 19 percent less than the national average and ranked 49th. Because Arizona's revenue that comes from the federal government was below average, the state did not place quite as low on revenue raised directly by Arizona governments. Similarly, Arizona does not use non-tax sources of revenue, such as user fees, as much as the national average. Thus, the burden of state and local taxes per capita ranked 37th in the nation, 17 percent below the national average.

Between 1986 and 1999, per capita total revenues rose \$677 (in 2001 dollars). The 19 percent increase was half the national average, with per capita revenues as a ratio to the national average dropping 13 percentage points. Arizona ranked last among 10 Western states in 1999 per capita revenues; only Tennessee had a lower figure nationally.

Funds from the federal government rose 81 percent over the 13 years. This advance considerably exceeded the national average, yet per capita federal spending in Arizona as a ratio to the national average had risen to only 81 percent by 1999. In the West, only Nevada had a lower figure.

Per capita revenues raised directly by state and local governments in Arizona climbed only 11 percent over the 13 years, less than a third of the national average. Per capita own source revenues as a ratio to the national average dropped to 81 percent. Arizona was last among the 10 Western states and 45th nationally.

More than 70 percent of Arizona's directly raised revenues came from state and local taxes in 1999. Per capita tax collections were 83 percent of the national average in 1999. Arizona ranked fifth in the West and 37th nationally on per capita taxes. The increase from 1986 to 1999 was just half the national average.

The general sales tax was the largest single source of state and local government

tax revenue in Arizona in 1999, accounting for 35 percent of the total taxes and 20 percent of total revenues. Real per person collections from this tax rose 16 percent from 1986 to 1999, less than half the national average. The ratio to the national average still was far above average in 1999 at 119 percent. Among the Western states, Arizona's per capita collections ranked fourth in 1999.

Property taxes, consisting of various business and household taxes, were the second largest category of revenue in Arizona in 1999. Collections rose 21 percent between 1986 and 1999, compared to the national average of 33 percent. Per capita collections in 1999 were 17 percent less than the national average and ranked sixth highest among the 10 Western states.

The individual income tax was another large source of revenue, but the 1999 Arizona per capita ratio was only 62 percent of the national average, 10 percentage points lower than in the early 1990s. Four Western states had lower figures. Per capita collections from the Arizona corporate income tax were 11 percent below the national average in 1999 but were second highest in the West. The combined personal and corporate income tax rose more sub-

stantially on a per capita basis than most revenue sources between 1986 and 1999, at nearly the same pace as the national average.

Collections per capita from selective sales taxes fell 3 percent in Arizona between 1986 and 1999, compared to a 26 percent increase nationally. The 1999 per capita figure was 18 percent below average and lowest among the Western states. The motor fuel tax was responsible for half of the selective sales tax collections in Arizona, with the per capita figure above the national average. However, the per capita increase between 1986 and 1999 was only 7 percent, much less than the national average of 29 percent.

Per capita collections from the motor vehicle license tax were 48 percent lower than the national average in 1999, compared to higher than average in 1996. Arizona went from the second highest level in the West in 1986 to the lowest in 1999. Collections from miscellaneous other taxes also were far less than the national per capita average and ranked last in the West, but this was the only revenue category in Arizona to experience a per capita gain between 1986 and 1999 greater than the national average.

Other than taxes, state and local governments receive revenues from current charges

TABLE 1
ARIZONA STATE AND LOCAL GOVERNMENT REVENUES

	Fiscal Year 1998-99		Per Capita Change, FY 1986 to FY 1999		
	In Millions	Ratio to U.S. Average*	Inflation-Adjusted Dollars**	Percent	Ratio to U.S. Average
TOTAL REVENUE.....	\$20,958	81.0%	\$677	19%	-13%
From Federal Government.....	3,952	81.0	351	81	15
Total Own Source.....	17,005	81.0	326	11	-19
Taxes.....	12,238	83.2	369	18	-12
Property.....	3,584	82.8	123	21	-8
General Sales.....	4,294	118.7	116	16	-21
Selective Sales.....	1,177	72.3	-8	-3	-22
Motor Fuels.....	585	107.8	8	7	-22
Other Selective Sales.....	593	54.5	-16	-12	-23
Income.....	2,644	65.7	158	43	-1
Individual.....	2,098	61.5	NA	NA	NA
Corporate.....	545	89.2	NA	NA	NA
Motor Vehicle License.....	144	52.1	-44	-60	-87
Other Taxes.....	395	47.5	24	44	7
Current Charges.....	2,474	65.1	101	26	-19
Education.....	996	91.4	31	19	-29
Other Current Charges.....	1,479	54.5	70	31	-14
Interest Earned.....	1,111	93.6	6	3	-10
Other Revenue.....	1,182	92.0	-150	-39	-78

NA: Not available

* In per capita dollars

** In fiscal year 2001 dollars

Source: Center for Business Research, L. William Seidman Research Institute, College of Business, Arizona State University from *Government Finance* series of the U.S. Department of Commerce, Bureau of the Census. Population and GDP Implicit Price Deflator from U.S. Department of Commerce, Bureau of Economic Analysis.



(user fees), interest earned, and various other sources. In 1999, the per person level of each was below average, as was the change between 1986 and 1999. Per capita collections in Arizona from current charges were 35 percent less than the national average, ranking last in the West. Education was the source of 40 percent of the current charges, with a per capita level 9 percent below the national average.

EXPENDITURE DETAIL

Arizona state and local government expenditures totaled \$20 billion in 1999. In per capita terms, Arizona ranked last in the West; only Arkansas and Oklahoma had lower figures nationally. Real per capita spending rose \$483 between 1986 and 1999, or 14 percent — less than the increase in per capita personal income. The spending advance was only a third of the national average, pushing Arizona per capita expenditures as a ratio to the national average down to 81 percent.

The total expenditure figures include capital outlays — spending on infrastructure, such as new schools and new roads, and equipment and land. Arizona's rapid population growth is responsible for per person capital outlays being above the national average. Arizona ranked 10th in the nation and fourth in the West in 1999. However, real per capita spending on capita outlays dropped slightly between 1986 and 1999 while the national average rose 45 percent; Arizona ranked 48th nationally and ninth in the West on percent change, despite having the second-fastest rate of population growth over this period.

Arizona government spending on current operations — compensation, supplies, materials, operating leases and contractual services — was 25 percent less than the national per capita average, lowest in the nation in 1999 and the biggest differential in the 35-year record. Per person spending rose 18 percent between 1986 and 1996, compared to 42 percent nationally. All of this increase occurred in the first four years of the period when AHCCCS (Arizona Health Care Cost Containment System, Arizona's equivalent of Medicaid) was expanding. Between 1990 and 1999, per capita spending on current operations slipped 1 percent in Arizona, compared to a 22 percent rise nationally.

More than one-third of the expenditures in 1999 went to education (see Table 2). Arizona ranked last in the West in per

capita education spending in 1999 and last by a very large margin on per capita percent change in spending between 1986 and 1999. Elementary and secondary education in Arizona received 20 percent less per capita funding than the national average. The per capita increase from 1986 to 1999 was 9 percent in Arizona, compared to 45 percent

nationally. Spending on higher education was 2 percent above the national per capita average, but no spending increase occurred between 1986 and 1999, compared to a 34 percent advance nationally.

Education provides a good example of why neither the per capita nor per personal income measures are ideal means to compare states.

TABLE 2
ARIZONA STATE AND LOCAL GOVERNMENT EXPENDITURES

	Fiscal Year 1998-99		Per Capita Change, FY 1986 to FY 1999		
	In Billions	Ratio to U.S. Average*	Inflation-Adjusted Dollars**	Percent	Ratio to U.S. Average
TOTAL EXPENDITURES.....	20,302	80.5	483	14	-20
Education.....	7,532	85.2	98	7	-28
Elementary and Secondary.....	4,874	79.6	83	9	-26
Higher Education.....	2,265	102.4	-2	0	-35
Other Education.....	392	79.0	17	28	-8
Social Services.....	2,932	48.0	148	34	-8
Public Welfare.....	1,885	48.6	119	47	-9
Cash Assistance.....	218	56.5	8	23	24
Vendor Payments.....	1,239	48.4	94	62	-23
Other Public Welfare.....	428	45.8	17	25	-10
Health and Hospitals.....	988	45.9	23	14	-10
Other Social Services.....	60	75.4	5	73	33
Transportation.....	2,147	108.1	-9	-2	-25
Highways.....	1,738	103.6	-39	-10	-31
Other Transportation.....	409	132.3	30	60	6
Public Safety.....	2,435	104.9	109	29	-21
Police.....	1,035	107.6	45	28	-14
Fire.....	386	100.7	19	32	-4
Correction.....	850	103.4	36	27	-50
Inspection and Regulation.....	164	106.6	10	42	10
Environment And Housing.....	1,773	89.5	19	6	-26
Natural Resources and Parks.....	807	107.5	3	2	-33
Housing / Community Development....	265	58.3	12	30	-4
Sewerage and Solid Waste.....	701	90.3	4	3	-32
Government Administration.....	1,423	102.9	68	31	-14
Interest on General Debt.....	908	74.9	-73	-29	-43
Other Expenditures.....	1,152	83.4	123	116	29
CAPITAL OUTLAYS.....	3,768	118.3	-19	-2	-58
Education.....	1,129	115.1	9	4	-124
Elementary and Secondary.....	872	118.7	9	5	-164
Other Education.....	257	104.4	0	1	-55
Highways.....	1,099	117.5	-55	-20	-58
Natural Resources and Parks.....	212	119.3	-16	-28	-112
Sewerage and Solid Waste.....	277	138.4	-24	-31	-46
Other Capital Outlays.....	1,051	118.2	67	48	2
CURRENT OPERATIONS.....	16,534	75.1	502	18	-15
Education.....	6,273	81.1	82	7	-20
Elementary and Secondary.....	4,002	74.2	74	10	-18
Other Education.....	2,271	97.1	8	2	-24
Highways.....	639	86.1	16	14	1
Natural Resources and Parks.....	596	103.9	20	20	-11
Sewerage and Solid Waste.....	424	73.6	28	50	-9
Other Current Operations.....	8,603	69.3	356	26	-13

* In per capita dollars

** In fiscal year 2001 dollars

Source: Center for Business Research, L. William Seidman Research Institute, College of Business, Arizona State University from *Government Finance* series of the U.S. Department of Commerce, Bureau of the Census. Population and GDP Implicit Price Deflator from U.S. Department of Commerce, Bureau of Economic Analysis.

A better measure for education is per pupil spending. Since children represent an above average share of Arizona's population, per pupil spending on elementary and secondary education is further below average than the per capita measure indicates. Similarly, a high proportion of Arizona's residents are enrolled in the state's universities and community colleges, in part because of a limited number of non-public institutions. Thus per pupil spending on higher education also is well below the national average.

Social services is the next largest category of government spending, accounting for 14 percent of the Arizona total in 1999. Arizona's per capita spending was less than half the national average and ranked a distant last in the West. Despite the implementation of AHCCCS, Arizona's increase in spending between 1986 and 1999 was considerably less than the national average; only one Western state had a lesser gain. Close to two-thirds of the social services spending was for public welfare, with most of the rest for health and hospitals. Nearly two-thirds of the public welfare spending was in the category of "vendor payments." Almost all of this

category represents spending by AHCCCS. Very large increases in vendor payments in Arizona still were smaller than the national average, so that per person spending in Arizona still was less than half the national average in 1999.

Public safety was the next largest category of expenditures, with Arizona marginally above the national per capita average in 1999 in each of the category's components: police, fire, correction, and inspection and regulation. Except in the latter subcategory, the 1986 to 1999 increase was less than the national average. Overall, per capita spending on public safety in 1999 ranked fifth in the West, with only one state having a smaller 1986 to 1999 change.

While still above the national per capita average in 1999 (but ranked seventh in the West), spending on transportation slipped between 1986 and 1999 (the second-smallest change in the West), while it rose nationally. Most of the transportation category's expenditures were for highways, with nearly two-thirds of the highway spending being capital outlays. Capital outlays for highways declined substantially on a real per capita basis between 1986 and 1999 compared to an

increase nationally, but the 1999 per capita level still was above the national average. In contrast, per capita spending on highway current operations was below the national average, but rose more than the national average from 1986 through 1999.

In the environment and housing category, Arizona's per capita spending also was below the national average in 1999; only one Western state had lower spending. Spending by subcategory varied widely. The 1986 to 1999 real per capita spending increase was just 6 percent in Arizona compared to 37 percent nationally. The gain was the least among the Western states.

Spending on government administration — which includes the judicial and legal systems, financial administration, public buildings and various other programs — was slightly above the national per capita average in 1999; the spending increase over the 13 years was less than the national average. Arizona ranked seventh among the 10 Western states on both the 1999 per capita level and change over time.

— **Tom R. Rex**
Research Manager

Arizona Purchasing Managers Index slips in November

The seasonally adjusted Arizona Purchasing Managers Index fell to 37.5 in November from 40.0 the previous month. An index reading of over 50 indicates that the local economy is growing, while a reading below 50 suggests a slowdown in the overall level of economic activity in the near term.

ANALYSIS

The index has been fluctuating in the upper 30s and lower 40s since March 2001, the official start of the national recession as called by the National Bureau of Economic Research. Uncertainty has dominated economic forecasts of late as some indicators such as housing and auto sales have remained buoyant while others have been dismal. The Arizona PMI, it should be noted, is more useful in forecasting economic downturns than recoveries.

Weakness returned to the production, purchased materials inventory level and purchases subindexes in November, with the purchased materials inventory level falling a full 9.0 points. The employment subindex fell 1.9 points to reach the lowest level seen

since the inception of the index in 1962. The employment subindex fell to 31.1 in June 1982, but lies at 30.3 this month. On a positive note, the subindex of new orders continued its upward trend for the third consecutive month, rising to 37.8 in November.

The Prices Index also rose in November,

reaching 48.7 and continuing a trend that began in August. This suggests that although the markets are still weak, the situation is improving.

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

FIGURE I
ARIZONA PURCHASING MANAGERS INDEX*



Arizona Leading Index slips in November

The Bank One Arizona Index of Leading Economic Indicators fell in November to 111.0. The updated index is 0.4 percent below the revised 111.4 number for the previous month and 0.5 percent above the November 2000 number of 110.4 (1987 = 100).

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

The index declined in November, and was revised sufficiently for the previous month to cause it to go negative. The money supply data was revised over most of the span of the index table this month, which could indicate that the seasonal adjustment factors were revised. In any case, it is unusual for an indicator to be revised to the extent that it moves from being the leading positive to the leading negative indicator — as occurred in October with the money supply.

The picture of the economy emerging from the data is still murky, but it is clear that this is a highly unusual recession.

Indications are that this will be a rather shallow recession. In its analysis of the coincident index (which measures the current economy), the Conference Board says, "Compared to the coincident index's average decline of 3.3 percent in the previous six recessions, the current decline has been relatively shallow. To date, the coincident index has declined by only 1.4 percent from its peak of 117.1 in December 2000." Another indication is the unemployment rate which, while it has risen significantly, remains close to the low point for unemployment in the last cycle.

Spending patterns are also quite different in this recession. Usually consumer spending on durable goods begins to decline even before the recession starts, while non-durable goods spending does not decline until somewhere around the middle of the recession. Spending on services typically hits bottom after the official end of the recession. This time around, durable goods spending is holding up quite well while the declines in services and non-durable spending are more pronounced. Of course, the likely explanation for this oddity is

low interest rates, perhaps coupled with some nervousness about the stock market. It appears that consumers are taking money that would have gone into the stock market and buying cars, houses and paying down debt. Low rates are allowing car manufacturers and others to offer zero-interest loans on big ticket items, while at the same time discouraging people from putting money in the bank.

What has not changed is the type of stores that tend to benefit from tough times. Discount and warehouse stores continue to post healthy sales gains while department stores and specialty retailers are struggling. Unless there is a burst of last-minute spend-

ing, it appears that holiday retail sales (excluding autos) will be lower than last year. There has been enough of an increase in auto spending — particularly in October — that overall retail sales for the holiday season could still be positive.

The jump in auto sales raises the possibility that sales will be lower in the first half of 2002. The consumer accounts for two-thirds of the economy, so the behavior of consumers in the months to come will impact the speed of the recovery.

— Tracy Clark
Senior Economist

Bank One Economic Outlook Center

TABLE 1

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

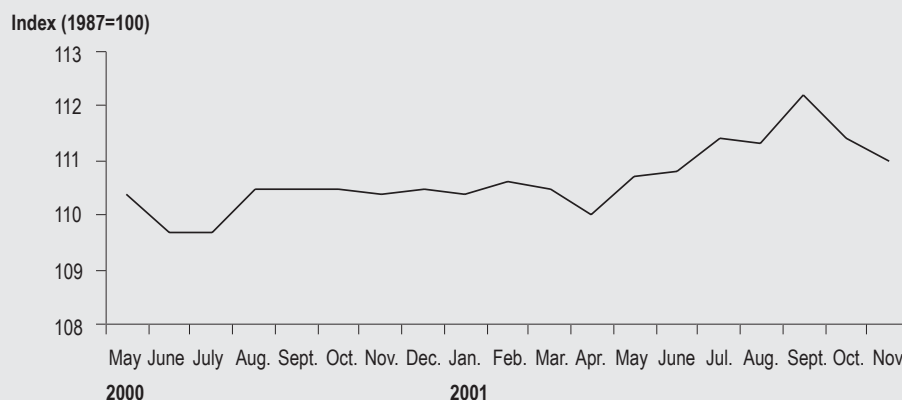
	Net Contribution*			
	August	September	October	November
Delivery Time*	0.00	0.20	-0.05	-0.08
Inventory Levels*	-0.13	0.11	0.08	-0.25
New Orders*	-0.02	-0.23	0.03	0.04
Production*	-0.24	-0.04	0.20	-0.16
Employment*	-0.09	-0.27	-0.07	-0.02
Residential Building Permits	0.22	-0.03	-0.21	-0.04
Average Workweek, Manufacturing	-0.04	-0.07	-0.07	0.00
Money Supply	0.34	1.39	-0.41	0.15
Change in Sensitive Materials Prices	-0.20	-0.20	-0.21	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 1

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	November	111.0	111.4 r	-0.4	0.5	NA	NA
PURCHASING MANAGERS INDEX							
Arizona	November	37.5	40.0	-6.3	-34.4	NA	NA
BUILDING PERMITS (Thousands of \$)							
Maricopa County	October	654,435	715,202 r	-8.5	-14.7	8,263,279	11.1
Pima County	October	108,050	102,694	5.2	3.9	1,138,218	4.1
Balance of State	October	176,253	146,217 r	20.5	-20.0	1,595,850	2.4
Arizona	October	938,738	964,113 r	-2.6	-14.0	10,997,347	9.0
TOTAL HOUSING UNITS AUTHORIZED							
Maricopa County	October	2,352	3,799 r	-38.1	-24.2	38,412	0.4
Pima County	October	870	643	35.3	29.3	7,322	1.6
Balance of State	October	1,533	1,189 r	28.9	18.6	13,358	5.8
Arizona	October	4,755	5,631 r	-15.6	-6.2	59,092	2.1
HOME SALES							
Maricopa County - Number	October	8,660	8,494	2.0	-10.9	86,184	3.4
Maricopa County - Median Price(\$)	October	137,875	138,000	-0.1	3.3	136,925	4.5
HOUSING AFFORDABILITY INDEXES							
Metropolitan Phoenix - New Homes	3rd Quarter	100	98	2.0	8.7	NA	NA
Metropolitan Phoenix - Resale Homes	3rd Quarter	113	113	0.0	4.6	NA	NA
MORTGAGE RATES (30-year Fixed)							
Maricopa County	November	6.4	6.3	1.6	-12.3	NA	NA
POPULATION ESTIMATES (Thousands)							
Maricopa County	3rd Quarter	3,221	3,196 r	0.8	3.2	NA	NA
Pima County	3rd Quarter	874	869 r	0.6	2.4	NA	NA
Balance of State	3rd Quarter	1,268	1,259 r	0.7	2.9	NA	NA
Arizona	3rd Quarter	5,362	5,324 r	0.7	3.0	NA	NA
RETAIL SALES (Millions of \$)							
Maricopa County	October	2,542	2,361	7.6	4.7	24,953	1.9
Arizona	October	3,723	3,458	7.7	5.3	36,533	2.4

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.