

POPULATION ESTIMATES AND PROJECTIONS

December 2001

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TABLE OF CONTENTS AND LIST OF TABLES

POPULATION ESTIMATES	2
Total Population Change	2
TABLE 1. POPULATION ESTIMATES	4
Net Natural Increase	5
Births	5
Deaths	5
TABLE 2. COMPONENTS OF POPULATION CHANGE	6
TABLE 3. BIRTHS AND DEATHS	7
Migration	8
Net Migration	8
TABLE 4. NET MIGRATION BY AGE	10
In-Migration and Out-Migration	12
Quarterly Estimates	13
TABLE 5. QUARTERLY POPULATION ESTIMATES	14
TABLE 6. COMPONENTS OF QUARTERLY POPULATION CHANGE	16
POPULATION PROJECTIONS	18
Assumptions and Scenarios	18
Annual Projections	19
Maricopa County	19
TABLE 7. POPULATION PROJECTIONS BY DECADE	20
Pima County	21
Balance of State	21
Arizona	21
TABLE 8. POPULATION ESTIMATES AND PROJECTIONS	22
METHODOLOGY	26
Estimates	26
TABLE 9. POPULATION ESTIMATES DETAIL	29
Projections	37
COMPARISONS TO OTHER SOURCES	37
TABLE 10. COMPARISON OF POPULATION ESTIMATES AND PROJECTIONS	38
APPENDIX TABLES	
1. ANNUAL PERCENT CHANGE IN POPULATION	39
2. SHARE OF ARIZONA POPULATION	41
3. SHARE OF CHANGE IN ARIZONA POPULATION	42
4. MIGRATION AS A PERCENTAGE OF TOTAL POPULATION CHANGE	44
5. ESTIMATES OF IN- AND OUT-MIGRATION	46

POPULATION ESTIMATES

The Center for Business Research (CBR), an affiliate of the L. William Seidman Research Institute in the College of Business at Arizona State University, is the sole source of quarterly estimates of the population in Arizona, releasing estimates about one month after the end of each quarter. The estimates are produced for Maricopa County, Pima County, and the balance of the state. Despite the degree of precision indicated by rounding the estimates to the nearest 100 people, the estimates have a substantial margin of error, as explained in the methodology section of this report. (Prior to 1990, the estimates are rounded to the nearest 1,000.)

Most population estimates issued by other organizations are expressed as of July 1. The annual data presented in this document are as of July 1, corresponding to the end of the second quarter of the calendar year.

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. The 1970, 1980 and 1990 census counts were raised 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 population and total population change are shown in Table 1.

Total Population Change

Population change results from four demographic processes: births, deaths, in-migration and out-migration. Net natural increase (or decrease) is the difference between births and deaths. Net migration (net in or net out) is the difference between in- and out-migration.

Annual population change varies over time due to numerous factors. The economic cycle plays a major role, but other factors – some short-term in nature, some of a longer-lasting duration – contribute as well.

The annual average numeric population increase in Arizona was relatively stable through the three economic cycles of the 1970s and 1980s at about twice the level of the economic cycle of the 1960s. In the current economic cycle that began in late 1991, the annual average has been about 50 percent higher than in the three prior cycles. The current recession likely will end in 2002, marking the end of the current economic cycle.

Maricopa County (most of the Phoenix metropolitan area) was responsible for much of this acceleration in population growth over the last decade. Average annual population growth began to pick up in the 1980s in the Phoenix area and accelerated in the 1990s, with each year since 1994 experiencing greater gains than in any year before 1994. In Pima County (the Tucson metropolitan area), annual average gains in the current cycle are higher than in the two prior cycles, but not equal to those in the early 1970s. Increases in 1971, 1972, 1973 and 1979 were greater than any in the current cycle. In the balance of the state (the 13 less populous counties), annual average gains in the current cycle are considerably higher than in any prior cycle. Only in 1971 was the gain similar to that of every year of the current cycle.

The CBR focuses on numeric change in population rather than percentage change. As population increases over time, percent increases become smaller for the same numeric change, and therefore more difficult to interpret. For example, the population change in Arizona in 1973 was 118,000, nearly the same as in 1993. As seen in Appendix Table 1, however, the percent

change was 5.8 in 1973 and 3.0 in 1993. Whereas 3 percent growth used to represent moderate to slow growth in Arizona, even the fastest growth in the next cycle is unlikely to exceed 3 percent.

With minor exception, in each year since 1980 Maricopa County's population growth has been faster than that elsewhere in the state. Thus, its share of the state's population has climbed, from less than 56 percent in 1980 to 60 percent in 2001 (see Appendix Table 2). Most of the decline in share has occurred in Pima County. In the current cycle and in the 1983 to 1991 cycle, about 65 percent of the population increase was in Maricopa County (see Appendix Table 3).

TABLE 1
POPULATION ESTIMATES
As of July 1, in Thousands

	<i>Total Population</i>				<i>Change in Population</i>			
	Arizona	Maricopa County	Pima County	Balance of State	Arizona	Maricopa County	Pima County	Balance of State
1970	1,828	1,001	359	468				
1971	1,930	1,048	382	500	102	47	23	32
1972	2,043	1,109	409	525	113	61	27	25
1973	2,161	1,178	431	552	118	69	22	27
1974	2,261	1,239	447	575	100	61	16	23
1975	2,324	1,275	463	586	63	36	16	11
1976	2,385	1,301	475	609	61	26	12	23
1977	2,466	1,351	488	627	81	50	13	18
1978	2,558	1,409	503	646	92	58	15	19
1979	2,680	1,478	529	673	122	69	26	27
1980	2,785	1,547	542	696	105	69	13	23
1981	2,872	1,603	554	715	87	56	12	19
1982	2,949	1,651	568	730	77	48	14	15
1983	3,022	1,693	582	747	73	42	14	17
1984	3,121	1,757	598	766	99	64	16	19
1985	3,230	1,828	616	786	109	71	18	20
1986	3,351	1,907	635	809	121	79	19	23
1987	3,466	1,986	649	831	115	79	14	22
1988	3,564	2,051	659	854	98	65	10	23
1989	3,656	2,112	669	875	92	61	10	21
1990	3,746.6	2,168.8	679.9	897.9	91	57	11	23
1991	3,847.2	2,226.8	693.2	927.2	100.6	58.0	13.3	29.3
1992	3,955.2	2,287.4	708.7	959.1	108.0	60.6	15.5	31.9
1993	4,072.2	2,354.7	726.1	991.4	117.0	67.3	17.4	32.3
1994	4,213.6	2,443.9	745.5	1,024.2	141.4	89.2	19.4	32.8
1995	4,378.5	2,550.6	766.3	1,061.6	164.9	106.7	20.8	37.4
1996	4,544.6	2,664.1	784.6	1,095.9	166.1	113.5	18.3	34.3
1997	4,706.5	2,779.4	799.6	1,127.5	161.9	115.3	15.0	31.6
1998	4,863.7	2,890.4	814.7	1,158.6	157.2	111.0	15.1	31.1
1999	5,017.2	2,994.9	831.7	1,190.6	153.5	104.5	17.0	32.0
2000	5,168.9	3,097.2	847.7	1,224.0	151.7	102.3	16.0	33.4
2001	5,323.5	3,196.0	868.5	1,259.0	154.6	98.8	20.8	35.0
Annual Averages by Economic Cycle								
1961-70					47	30	9	8
1971-75					99	55	21	24
1976-82					89	54	15	21
1983-91					100	64	14	22
1992-2001					148	97	18	33

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

Net Natural Increase

The number of births less deaths does not fluctuate much from year to year, but varies gradually over time (see Table 2). Statewide, annual net natural increase rose from a trough of 21,000 in 1973 to 40,000 in 1990. After dropping to less than 36,000 in 1993 (related to the economic recession and slow recovery of the early 1990s), net natural increase climbed to more than 46,000 in 2001, with most of the gain since 1998. Most of the increase from 1973 to 1990 and again since 1993 has occurred in Maricopa County. Net natural increase in recent years in Pima County was only a little higher than in the 1970s, while in the balance of the state it has been about the same as in the 1970s.

Births

The number of births is determined by the number of women of childbearing age and their fertility rate (their propensity to have a child). Fertility rates vary widely with age, with peak rates among women in Arizona from about age 20 to 28. Fertility rates vary over time: in the short term with economic conditions and in the long term with a variety of sociological factors.

The annual number of births to Arizona women doubled between 1978 and 2001 (see Table 3). Increases from the late 1970s through 1990 coincide with the greatest number of women of the baby-boom generation being of childbearing age. The number of births stabilized in the early 1990s, in part due to economic conditions, and in part due to the older members of the baby-boom generation aging out of prime childbearing age. Since 1993, however, the number of births has climbed sharply. A rapidly increasing population of young adults and a strong economy probably contributed to these gains. In addition, much of the population growth of young adults since the early 1990s has been of Hispanics, who have a higher fertility rate than other racial/ethnic groups.

The number of births in Maricopa County in 2001 was 2.5 times the level of the late 1970s. The increase was only a little more than 50 percent in Pima County and less than 50 percent in the balance of the state. Since 1993, 86 percent of the increase in the number of births has occurred in Maricopa County. The county accounted for 64 percent of the state's births in 2001, compared to its 60 percent share of the entire population.

Deaths

The number of deaths is determined by the age distribution of the population and mortality rates. Mortality rates rise with age after early childhood. In all age groups, death rates are higher for males than females. Over time, mortality rates gradually have fallen.

The annual number of deaths of Arizona residents has steadily risen, doubling between the late 1970s and 2001 (see Table 3). This increasing number of deaths results primarily from Arizona's rising population, but an aging population has contributed a little.

The number of deaths approximately has doubled since the late 1970s in each subregion of the state. In 2001, Maricopa County accounted for 56 percent of the deaths, less than its share of the population. Despite the county's noted retirement communities, older residents in Maricopa County make up a smaller share of the population than in much of the rest of Arizona.

TABLE 2
COMPONENTS OF POPULATION CHANGE
In Thousands

	<i>Net Natural Increase</i>				<i>Net Migration</i>			
	Arizona	Maricopa County	Pima County	Balance of State	Arizona	Maricopa County	Pima County	Balance of State
1971	23	12	4	7	79	35	19	25
1972	22	11	4	7	91	50	23	18
1973	21	11	3	7	97	58	19	20
1974	23	11	4	8	77	50	12	15
1975	23	11	4	8	40	25	12	3
1976	23	11	4	8	38	15	8	15
1977	24	11	4	9	57	39	9	9
1978	24	12	4	8	68	46	11	11
1979	27	14	4	9	95	55	22	18
1980	29	15	5	9	76	54	8	14
1981	30	15	5	10	57	41	7	9
1982	30	16	5	9	47	32	9	6
1983	31	16	5	10	42	26	9	7
1984	31	17	5	9	68	47	11	10
1985	33	18	5	10	76	53	13	10
1986	35	21	5	9	86	58	14	14
1987	36	22	6	8	79	57	8	14
1988	37	22	6	9	61	43	4	14
1989	39	24	6	9	53	37	4	12
1990	40	24	6	10	51	33	5	13
1991	39.7	24.3	5.8	9.6	60.9	33.7	7.5	19.7
1992	39.3	24.0	5.7	9.6	68.7	36.6	9.8	22.3
1993	35.8	21.9	5.1	8.8	81.2	45.4	12.3	23.5
1994	36.0	22.7	4.7	8.6	105.4	66.5	14.7	24.2
1995	36.6	23.9	4.6	8.1	128.3	82.8	16.2	29.3
1996	37.6	25.4	4.4	7.8	128.5	88.1	13.9	26.5
1997	38.5	26.5	4.4	7.6	123.4	88.8	10.6	24.0
1998	38.6	27.4	4.3	6.9	118.6	83.6	10.8	24.2
1999	40.5	29.0	4.6	6.9	113.0	75.5	12.4	25.1
2000	42.9	30.7	4.9	7.3	108.8	71.6	11.1	26.1
2001	46.7	33.3	5.5	7.9	107.9	65.5	15.3	27.1
Annual Averages by Economic Cycle								
1961-70	23	11	4	8	24	19	5	0
1971-75	22	11	4	7	77	44	17	16
1976-82	27	13	4	9	63	40	11	12
1983-91	36	21	6	9	64	43	8	13
1992-2001	39	26	5	8	108	70	13	25

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

TABLE 3
BIRTHS AND DEATHS
In Thousands

	<i>Births</i>				<i>Deaths</i>			
	Arizona	Maricopa County	Pima County	Balance of State	Arizona	Maricopa County	Pima County	Balance of State
1970	38	20	7	11	15	8	3	4
1971	39	20	7	12	16	8	3	4
1972	38	19	7	11	16	8	3	4
1973	38	20	7	12	17	9	3	4
1974	40	21	7	12	17	9	4	4
1975	40	20	7	12	17	9	4	4
1976	40	20	7	12	17	9	3	4
1977	42	21	8	13	18	10	3	5
1978	43	22	8	13	19	11	4	5
1979	47	25	8	13	20	11	4	5
1980	50	27	9	14	21	12	4	5
1981	52	28	9	15	21	12	4	5
1982	53	29	9	15	22	12	4	5
1983	53	29	10	15	22	12	5	6
1984	55	31	10	15	24	13	5	6
1985	59	34	10	15	25	14	5	6
1986	61	35	10	15	25	14	5	6
1987	63	37	11	16	27	15	5	7
1988	66	38	11	16	28	15	5	7
1989	67	39	11	17	28	15	5	7
1990	68	40	11	17	28	16	5	7
1991	68.4	40.2	11.4	16.8	28.7	15.9	5.6	7.2
1992	68.8	40.2	11.5	17.1	29.5	16.2	5.8	7.5
1993	68.4	40.2	11.3	16.9	32.6	18.3	6.2	8.1
1994	69.8	41.3	11.3	17.2	33.8	18.6	6.6	8.6
1995	71.0	42.7	11.2	17.1	34.5	18.8	6.6	9.0
1996	74.1	45.6	11.3	17.2	36.5	20.2	6.9	9.4
1997	75.5	46.9	11.4	17.2	37.0	20.4	7.0	9.6
1998	76.3	47.9	11.3	17.0	37.7	20.5	7.0	10.1
1999	79.7	50.8	11.8	17.1	39.3	21.8	7.2	10.2
2000	82.5	53.0	12.1	17.4	39.6	22.3	7.2	10.1
2001	86.4	55.7	12.6	18.0	39.7	22.4	7.1	10.1
Annual Averages by Economic Cycle								
1971-75	39	20	7	12	17	9	3	4
1976-82	47	25	8	14	20	11	4	5
1983-91	62	36	11	16	26	14	5	7
1992-2001	75	46	12	17	36	20	7	9

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

Migration

Historically, migration flows to and from Arizona primarily were with other U.S. states. Immigration appears to have contributed substantially more to Arizona's net migration over time, especially since the mid-1990s. However, limited information is available on immigration and emigration by state. Thus, the migration figures in this document are the total of domestic and international migration. Migration is responsible for more than two-thirds of Arizona's population change (see Appendix Table 4).

Net Migration

Net migration to Arizona is highly cyclical, corresponding to the economic cycle with a lag of several months to more than one year. For example, the strongest employment gains in Arizona relative to the national average during the current cycle occurred during 1994, but the strongest net migration flows did not occur until 1995 and lasted through 1996. The lag is a result of several factors. Most notably, it typically is a few months after a change in the growth rate before it can be ascertained that such a change occurred – before that one cannot be sure it is not a temporary fluctuation. In addition, it may take a few to several months before news of this change in conditions spreads to potential migrants.

Migration flows vary with the economic cycle because most migrants to Arizona participate in the workforce. If jobs are scarce in Arizona due to cyclical economic weakness, fewer residents of other states can move to Arizona. Thus, in the short-term, economic conditions – especially job availability – control migration flows. In the latter stages of an economic cycle, it is the weakening economy that reduces migration, not the other way around. However, in the long term, a history of job creation attracts migrants at the same time that a history of being able to attract a workforce draws employers to the state.

Net in-migration to Arizona was estimated at 108,000 in 2001, down slightly from the prior year and the fifth consecutive year of lower figures (see Table 2). In Arizona, Maricopa County, and the balance of the state, net migration has exceeded the pre-1990 record in each year since 1994. The peak occurred in 1995 in the balance of the state but not until 1996 and 1997 in Maricopa County. In Pima County, the highest net migration of the current cycle did not match the peaks recorded in the early and late 1970s. Annual average net migration in the current cycle is about 60 percent higher than that of any prior cycle in Maricopa County and in the balance of the state.

By Age. Net migration to Arizona varies by age. Using decennial census counts by age from the 2000 and 1990 censuses, birth data, and death data by age, it is possible to estimate net migration by age between 1990 and 2000 (and for Maricopa County, between 1990 and 1995 and between 1995 and 2000 by using the 1995 special census). Net migration by age as a percentage of total net migration is shown in Table 4A. These figures do not reflect any adjustments for differential undercounts between 1990 and 2000 or for errors in the age distribution, especially in 1990. Since migration occurred across the decade, the age at which people actually moved is younger by close to five years than that suggested by their age in 2000.

In the two large urban areas and in the state as a whole, young adults dominated the migration flows. In Maricopa County, the greatest number of net migrants were between the ages of 20 and 34 while in Pima County the peak was centered on the college age (18 to 24). In contrast, in the less populous counties, net migration was strongest in the retirement and early retirement age groups (55 to 69). In Maricopa and Pima counties, the age distribution of net migration during the 1990s was somewhat different from that of the 1980s, with more

concentration in the young adult age groups and less at retirement age. Even in the balance of the state, the concentration at retirement age was less in the 1990s than in the 1980s.

In Maricopa County, the percentage of net migration accounted for by each age group over the age of 40 decreased both between 1990 and 1995 and between 1995 and 2000 compared to the prior period. Between 1990 and 1995, most of the increase in share was among those less than 20, but between 1995 and 2000 it mostly was among those 20 to 34 and their young children less than 10 years old.

As a rate (percent of the national population), net migration to Maricopa County between 1990 and 2000 was strongest among those who were 20 to 34 years old in 2000 (see Table 4B). Among the age groups older than 34, only those 65 to 74 had a migration rate higher than the average for the entire population. Thus, unlike the rest of the state, retirement-age migration was not a particularly significant factor in the growth of the Phoenix area during the 1990s.

In Pima County, the net migration rate was highest at college age and at retirement age. The latter was centered on those 65 to 74, but more broadly included those 55 to 79. In the balance of the state, net migration rates were very high among those 55 to 74 years old and quite low among young adults.

Geography. Distance is an important factor in migration flows as most people move the shortest distance they can while meeting their needs or desires. Thus, the Northeast is not very important to Arizona in terms of migration. Migration from the South also is not very important because of distance and since climate is not as much of a push factor as in the northern states.

Migration flows between Arizona and other states vary over time with swings in relative economic conditions between Arizona and other states. Through the 1970s and much of the 1980s, the economies of the northern Plains and Great Lakes states were relatively weak. Thus, these regions were prime sources of migrants to Arizona. In the mid- to late-1980s, Texas and most of the western states other than California suffered through a spell of economic difficulties, increasing the migration from this region to Arizona.

In the early-to-mid-1990s, however, the weakest economies were in California and along the East Coast, especially in New England. As the latter is rather distant from Arizona, California took on great significance in Arizona's migration flows. According to data from the Internal Revenue Service, California accounted for nearly two-thirds of Arizona's net migration between 1990 and 1994. Prior to 1990, California's share varied from 5 to 15 percent. As California's economy has strengthened in the last several years, fewer people on net have moved from California to Arizona. Since the mid-1990s, immigration (much of it undocumented), especially from Mexico, has become an important source of Arizona's net migration.

Nearly all states, and especially the western states, received an increased net inflow from California in the first half of the 1990s. The increase to Arizona probably contributed a little to an overall increase in net migration to Arizona. For the most part, however, a shift occurred in Arizona's migration flows, as Californians replaced residents of other states, ranging from the West to Great Lakes regions. Similarly, a shift occurred in the mid-to-late 1990s, with a decline in the net inflow from California but an increase in the net inflow from Mexico.

TABLE 4A
NET MIGRATION BY AGE
Percentage of Total Migration

Age in 2000	<i>Between 1990 and 2000</i>				Maricopa County	
	Arizona	Balance of State	Pima County	Maricopa County	1990-95*	1995-2000
0-4	0.4%	-0.2%	-0.7%	0.8%	-1.3%	1.4%
5-9	4.4	3.2	2.0	5.3	9.8	11.1
10-14	8.0	9.7	7.2	7.5	7.6	5.5
15-19	8.1	6.6	11.6	8.0	8.8	8.4
20-24	9.9	1.7	16.2	11.8	11.1	14.3
25-29	10.8	1.1	8.0	14.9	12.4	18.1
30-34	8.6	5.1	0.5	11.4	6.4	10.5
35-39	7.5	8.8	5.3	7.4	6.8	8.3
40-44	6.2	8.2	5.8	5.5	6.9	4.4
45-49	5.4	7.5	5.7	4.5	4.7	2.5
50-54	5.5	8.2	6.7	4.3	4.3	4.1
55-59	5.4	9.2	6.5	3.7	3.9	3.2
60-64	5.8	10.9	6.6	3.7	4.3	3.5
65-69	6.0	10.7	7.2	4.0	5.4	3.8
70-74	5.1	7.6	6.6	3.9	3.8	2.6
75-79	2.6	2.7	3.7	2.3	2.3	1.1
80-84	1.0	0.2	1.5	1.1	0.7	0.1
85+	-0.5	-1.3	-0.4	-0.3	2.0	-2.9

*Age is in 1995

Source: Center for Business Research, L. William Seidman Research Institute, College of Business, Arizona State University from U.S. Bureau of the Census, 1990, 1995 and 2000 censuses, and Arizona Department of Health Services, births and deaths.

TABLE 4B
NET MIGRATION BY AGE BETWEEN 1990 AND 2000
Number Per 100,000 of U.S. Population by Age in 2000

Age in 2000	Arizona	Balance of State	Pima County	Maricopa County
0-4	21	-2	-5	28
5-9	234	40	13	182
10-14	420	121	45	255
15-19	433	84	73	276
20-24	566	23	109	435
25-29	603	14	53	536
30-34	454	63	3	388
35-39	356	99	30	227
40-44	298	94	33	172
45-49	289	95	36	158
50-54	341	120	49	172
55-59	430	175	62	193
60-64	576	259	78	239
65-69	680	287	97	296
70-74	622	219	96	307
75-79	375	92	63	221
80-84	210	12	38	160
85+	-139	-78	-12	-50
Total	384	91	45	248

Source: Center for Business Research, L. William Seidman Research Institute, College of Business, Arizona State University from U.S. Bureau of the Census, 1990 and 2000 censuses, and Arizona Department of Health Services, births and deaths.

In-Migration and Out-Migration

In-migration to Arizona from other states is determined by the size and age of the American population, the propensity of the population to move across state lines, and Arizona's share of these interstate migrants. Employment opportunities greatly influence Arizona's share. All of these factors vary widely by age.

Out-migration from Arizona is determined by the size of the Arizona population and the rate at which people move from the state. Generally, when Arizona is experiencing weak economic conditions, most of the rest of the nation also is experiencing difficulties. This limits the increase in out-migration. The main exception was in the late 1980s, when a slowing economy in Arizona coincided with a strong national economy. Construction workers in particular pushed up the number of out-migrants from Arizona.

Sources of information on in- and out-migration are limited. The CBR does not estimate these figures quarterly. It makes a rough estimate annually, based mostly on data from the Internal Revenue Service (IRS), though IRS data for the most recent year are not yet available. These estimates are less accurate than those of net migration and should be used with caution.

As seen in Appendix Table 5, both in-migration and out-migration vary over the economic cycle. Employment opportunity in Arizona is the most important factor explaining the cyclical fluctuation in in-migration to the state.

The ratio of in-migration to out-migration varies from about 1.3 to 1.9 in Maricopa County (see Appendix Table 5A). In-migration was much stronger beginning in 1995 than in previous years, while out-migration continued a slow upward trend. Thus the ratio averaged close to 1.5 during the 1983 to 1991 economic cycle, but around 1.7 for the 1992 to 2001 cycle. That is, for every three people who moved to Maricopa County between 1993 and 1991, approximately two left. In the current cycle, three people moved out of Maricopa County for every five that moved in.

The increase in in- and out-migration has not been as rapid as the gain in the Maricopa County population. Thus, both in- and out-migration as a percentage of the population have dropped over time.

The net migration rate to Pima County is lower than that to Maricopa County, the result of a lower in-migration rate and a higher out-migration rate. Thus, the ratio of in- to out-migration is lower in Pima County, ranging from 1.1 to 1.5 (see Appendix Table 5B). The ratio averaged about 1.25 in the 1983 to 1991 cycle: for every five people who moved into the county, four left. The ratio has been a little higher in the current economic cycle (about 1.35, or three out for every four in).

For the balance of the state (see Appendix Table 5C), the in-migration and out-migration rates have been higher than in either Pima or Maricopa counties. The in-to-out-migration ratio has been similar to that of Pima County.

For the state as a whole, annual in-migration has totaled between 5 and 6 percent of the Arizona population in most years of the current economic cycle; the out-migration rate has been just above 3 percent. As in Maricopa County, the ratio of in- to out-migration ranges from about 1.3 to 1.9, with higher figures during the 1990s than previously.

Domestic in-migration to Arizona is greatest by far from California, due to its proximity and large population. Other main sources of migrants to Arizona either are other neighboring states, especially New Mexico, Colorado and Nevada, or more distant but populous states such as Texas, Illinois and New York.

Considering the population sizes of the states of origin, in-migration rates to Arizona are by far the greatest from other western states, especially neighboring states. Northern Plains states as far east as Illinois have the next highest in-migration rates.

Out-migrants from Arizona historically have gone primarily to other western states, especially California. The economic slump in California in the early-to-mid-1990s reduced the number of Arizonans moving there, but even then California was by far the top destination. Out-migration rates have been highest to other Rocky Mountain states, followed by Pacific Coast states. Rates drop rapidly east of the Rockies.

Quarterly Estimates

Estimates of the population in each quarter since 1990 are shown in Table 5. The population change in recent quarters has been around 38,000 to 39,000 statewide, about 25,000 of which has occurred in Maricopa County. The breakdown between net natural increase and net migration is shown in Table 6.

Net migration to Arizona has been around 27,000 per quarter since the 2000 census. While lower than the peak figures of 30,000 to 34,000 from late 1994 into 1997, the recent figures are far higher than those during the 1990-91 recession. A similar situation is seen in Maricopa County. Net migration to Pima County has been higher in recent quarters than during the late 1990s, but remained below the highest figures of 1995. In the balance of the state, net migration remains strong, though not quite equal to the peak of late 1994 and early 1995.

TABLE 5
QUARTERLY POPULATION ESTIMATES
In Thousands

	<i>Total Population</i>				<i>Change in Population</i>			
	Arizona	Maricopa County	Pima County	Balance of State	Arizona	Maricopa County	Pima County	Balance of State
1990 1	3,720.5	2,154.0	677.1	889.4				
1990 2	3,746.6	2,168.8	679.9	897.9	26.1	14.8	2.8	8.5
1990 3	3,772.5	2,183.4	683.4	905.7	25.9	14.6	3.5	7.8
1990 4	3,799.1	2,198.8	686.7	913.6	26.6	15.4	3.3	7.9
1991 1	3,823.6	2,212.5	690.1	921.0	24.5	13.7	3.4	7.4
1991 2	3,847.2	2,226.8	693.2	927.2	23.6	14.3	3.1	6.2
1991 3	3,873.4	2,241.9	697.1	934.5	26.2	15.1	3.9	7.3
1991 4	3,900.9	2,256.8	700.9	943.1	27.5	14.9	3.8	8.6
1992 1	3,927.9	2,272.0	704.8	951.1	27.0	15.2	3.9	8.0
1992 2	3,955.2	2,287.4	708.7	959.1	27.3	15.4	3.9	8.0
1992 3	3,984.7	2,304.3	713.2	967.3	29.5	16.9	4.5	8.2
1992 4	4,015.0	2,321.8	717.5	975.7	30.3	17.5	4.3	8.4
1993 1	4,043.0	2,338.1	721.8	983.2	28.0	16.3	4.3	7.5
1993 2	4,072.2	2,354.7	726.1	991.4	29.2	16.6	4.3	8.2
1993 3	4,104.7	2,374.9	730.2	999.5	32.5	20.2	4.1	8.1
1993 4	4,138.3	2,395.5	735.0	1,007.9	33.6	20.6	4.8	8.4
1994 1	4,174.5	2,418.4	740.0	1,016.1	36.2	22.9	5.0	8.2
1994 2	4,213.6	2,443.9	745.5	1,024.1	39.1	25.5	5.5	8.0
1994 3	4,253.3	2,469.3	750.3	1,033.7	39.7	25.4	4.8	9.6
1994 4	4,294.8	2,495.7	755.5	1,043.6	41.5	26.4	5.2	9.9
1995 1	4,336.3	2,523.1	760.1	1,053.1	41.5	27.4	4.6	9.5
1995 2	4,378.5	2,550.6	766.3	1,061.6	42.2	27.5	6.2	8.5
1995 3	4,417.8	2,575.1	772.5	1,070.1	39.3	24.5	6.2	8.5
1995 4	4,459.0	2,604.2	776.5	1,078.3	41.2	29.1	4.0	8.2
1996 1	4,501.0	2,633.6	780.6	1,086.9	42.0	29.4	4.1	8.6
1996 2	4,544.6	2,664.1	784.6	1,095.9	43.6	30.5	4.0	9.0
1996 3	4,586.5	2,693.0	789.5	1,104.0	41.9	28.9	4.9	8.1
1996 4	4,628.3	2,723.0	793.3	1,112.0	41.8	30.0	3.8	8.0
1997 1	4,668.5	2,751.6	796.7	1,120.3	40.2	28.6	3.4	8.3
1997 2	4,706.5	2,779.4	799.6	1,127.5	38.0	27.8	2.9	7.2
1997 3	4,744.6	2,807.1	802.8	1,134.7	38.1	27.7	3.2	7.2
1997 4	4,783.9	2,834.5	806.4	1,143.0	39.3	27.4	3.6	8.3
1998 1	4,822.9	2,861.9	810.3	1,150.7	39.0	27.4	3.9	7.7
1998 2	4,863.7	2,890.4	814.7	1,158.7	40.8	28.5	4.4	8.0
1998 3	4,900.6	2,915.8	818.9	1,165.9	36.9	25.4	4.2	7.2
1998 4	4,940.2	2,942.2	823.5	1,174.5	39.6	26.4	4.6	8.6
1999 1	4,979.4	2,969.0	827.5	1,182.8	39.2	26.8	4.0	8.3
1999 2	5,017.2	2,994.9	831.7	1,190.6	37.8	25.9	4.2	7.8
1999 3	5,055.3	3,021.2	835.4	1,198.6	38.1	26.3	3.7	8.0
1999 4	5,094.9	3,047.3	840.5	1,207.1	39.6	26.1	5.1	8.5

TABLE 5 (continued)
QUARTERLY POPULATION ESTIMATES
In Thousands

	<i>Total Population</i>			<i>Change in Population</i>				
	Arizona	Maricopa County	Pima County	Balance of State	Arizona	Maricopa County	Pima County	Balance of State
2000 1	5,130.4	3,072.1	843.7	1,214.7	35.5	24.8	3.2	7.6
2000 2	5,169.0	3,097.2	847.8	1,224.0	38.6	25.1	4.1	9.3
2000 3	5,207.4	3,121.5	852.9	1,233.0	38.4	24.3	5.1	9.0
2000 4	5,245.4	3,146.3	857.7	1,241.4	38.0	24.8	4.8	8.4
2001 1	5,285.0	3,171.2	863.5	1,250.4	39.6	24.9	5.8	9.0
2001 2	5,323.5	3,196.0	868.5	1,259.0	38.5	24.8	5.0	8.6
2001 3	5,362.2	3,220.6	873.5	1,268.2	38.7	24.6	5.0	9.2

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

TABLE 6
COMPONENTS OF QUARTERLY POPULATION CHANGE
In Thousands

	<i>Net Natural Increase</i>				<i>Net Migration</i>			
	Arizona	Maricopa County	Pima County	Balance of State	Arizona	Maricopa County	Pima County	Balance of State
1990 2	10.1	6.2	1.5	2.4	16.0	8.6	1.3	6.1
1990 3	10.1	6.2	1.5	2.4	15.8	8.4	2.0	5.4
1990 4	10.0	6.1	1.5	2.4	16.6	9.3	1.8	5.5
1991 1	9.9	6.1	1.4	2.4	14.6	7.6	2.0	5.0
1991 2	9.7	5.9	1.4	2.4	13.9	8.4	1.7	3.8
1991 3	9.8	6.0	1.4	2.4	16.4	9.1	2.5	4.9
1991 4	9.7	5.9	1.4	2.4	17.8	9.0	2.4	6.2
1992 1	10.0	6.1	1.5	2.4	17.0	9.1	2.4	5.6
1992 2	9.8	6.0	1.4	2.4	17.5	9.4	2.5	5.6
1992 3	8.9	5.4	1.3	2.2	20.6	11.5	3.2	6.0
1992 4	9.0	5.5	1.3	2.2	21.3	12.0	3.0	6.2
1993 1	9.1	5.6	1.3	2.2	18.9	10.7	3.0	5.3
1993 2	8.8	5.4	1.2	2.2	20.4	11.2	3.1	6.0
1993 3	8.9	5.5	1.2	2.2	23.6	14.7	2.9	5.9
1993 4	9.0	5.6	1.2	2.2	24.6	15.0	3.6	6.2
1994 1	8.9	5.7	1.1	2.1	27.3	17.2	3.9	6.1
1994 2	9.2	5.9	1.2	2.1	29.9	19.6	4.3	5.9
1994 3	9.2	5.9	1.2	2.1	30.5	19.5	3.6	7.5
1994 4	9.1	5.8	1.2	2.1	32.4	20.6	4.0	7.8
1995 1	9.9	6.6	1.2	2.1	31.6	20.8	3.4	7.4
1995 2	8.4	5.6	1.0	1.8	33.8	21.9	5.2	6.7
1995 3	9.4	6.3	1.1	2.0	29.9	18.2	5.1	6.5
1995 4	9.2	6.2	1.1	1.9	32.0	22.9	2.9	6.3
1996 1	9.5	6.4	1.1	2.0	32.5	23.0	3.0	6.6
1996 2	9.5	6.5	1.1	1.9	34.1	24.0	2.9	7.1
1996 3	9.6	6.5	1.1	2.0	32.3	22.4	3.8	6.1
1996 4	9.8	6.7	1.1	2.0	32.0	23.3	2.7	6.0
1997 1	9.1	6.3	1.1	1.7	31.1	22.3	2.3	6.6
1997 2	10.0	7.0	1.1	1.9	28.0	20.8	1.8	5.3
1997 3	9.7	6.8	1.1	1.8	28.4	20.9	2.1	5.4
1997 4	9.6	6.7	1.1	1.8	29.7	20.7	2.5	6.5
1998 1	9.8	7.0	1.1	1.7	29.2	20.4	2.8	6.0
1998 2	9.5	6.9	1.0	1.6	31.3	21.6	3.4	6.4
1998 3	9.8	7.0	1.1	1.7	27.1	18.4	3.1	5.5
1998 4	10.4	7.4	1.2	1.8	29.2	19.0	3.4	6.8
1999 1	9.9	7.3	1.0	1.6	29.3	19.5	3.0	6.7
1999 2	10.4	7.3	1.3	1.8	27.4	18.6	2.9	6.0
1999 3	10.4	7.2	1.3	1.9	27.7	19.1	2.4	6.1
1999 4	10.0	7.3	1.0	1.7	29.6	18.8	4.1	6.8

TABLE 6 (continued)
COMPONENTS OF QUARTERLY POPULATION CHANGE
In Thousands

	<i>Net Natural Increase</i>				<i>Net Migration</i>			
	Arizona	Maricopa County	Pima County	Balance of State	Arizona	Maricopa County	Pima County	Balance of State
2000 1	11.4	8.3	1.3	1.8	24.1	16.5	1.9	5.8
2000 2	11.1	7.9	1.3	1.9	27.5	17.2	2.8	7.4
2000 3	10.8	7.4	1.3	2.1	27.6	16.9	3.8	6.9
2000 4	11.3	8.3	1.2	1.8	26.7	16.5	3.6	6.6
2001 1	12.6	9.2	1.5	1.9	27.0	15.7	4.3	7.1
2001 2	12.0	8.4	1.5	2.1	26.5	16.4	3.5	6.5
2001 3	11.6	8.0	1.4	2.2	27.1	16.6	3.6	7.0

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

POPULATION PROJECTIONS

Assumptions and Scenarios

Population projections have been made under three scenarios. The biggest differences between the scenarios relate to assumptions made about net migration, which is the key to making accurate projections. Not only does net migration account for more than two-thirds of the population change in Arizona, but migration flows in the future are far less certain than birth or death rates, which are unlikely to vary much from the projected rates.

A number of factors could affect migration flows to and from Arizona, but the likelihood of significant changes in each is low:

(1) Arizona's "pull." Arizona is an attractive destination because of factors such as climate, lifestyle, and job availability. This magnet effect is assumed to continue, within the fluctuations of economic cycles. The low scenario assumes that Arizona will gradually lose some attraction, contributing to slower population growth. This lessened attraction could result from urban problems such as air pollution and crime.

(2) Changes in local policies and economic development efforts. Probably resulting in part from more success in economic development, net migration to Maricopa County has accelerated in recent years. This greater share is assumed to continue in the middle scenario as economic development efforts continue to change to keep the state as competitive as it has been on average over the last 25 years. Failure to act on quality-of-life issues is assumed in the low scenario to contribute to lesser population growth. Greater success on this front and in economic development is assumed to lead to faster population growth in the high scenario.

(3) "Pushing" of people from Arizona. An area's problems, whether economic, social, or environmental, can increase out-migration as well as decrease in-migration. While no change in out-migration is assumed in the middle scenario, an increase in outflows resulting mostly from urban problems is assumed in the low scenario.

(4) The "pulling" effect of other, mostly western, states. Other states compete with Arizona for migrants. In many states or regions, economic cycles do not coincide exactly with that of Arizona, causing periods of greater or lesser competition. For example, California's slump in the early 1990s reduced its pull, as did that of Texas and most of the Rocky Mountain states during the mid-to-late 1980s. The middle scenario assumes that such swings will continue, but that on average, the pull of the western states will be as high as in the past. The exception is California, which has recovered from the slump of the early-to-mid-1990s, but has not and may never regain its former pull. Better or worse-than-average conditions in the western states are assumed in the low and high scenarios.

(5) The "pushing" effect from other states, mostly northern states and California, or other countries. Changes in economic conditions in a state or nation can affect its out-migration to other, mostly Sunbelt, states. This pushing effect, however, is secondary to the pull of other states. For example, improved economic conditions in the 1980s in the Northeast and in the late 1980s and early 1990s in the Great Lakes and northern Plains states reduced but did not eliminate net out-migration from these states. Conditions in these regions are assumed in the middle scenario to be in the mid-range of the last 25 years, with variations reflected in the other scenarios. Out-migration from California has dropped off substantially from the highs of the early-to-mid-1990s, but is expected to remain above historical levels.

(6) National changes in basic mobility or migration patterns. The likelihood of such changes is near zero given the stability of such patterns internationally and over time. Thus,

conditions such as increasing mobility of the general population or increased movement of people from the Northeast to Arizona are highly unlikely.

In addition to these assumptions about net migration, assumptions regarding net natural increase vary by scenario. In the middle scenario, fertility rates are assumed to rise only marginally and mortality rates are assumed to continue to slowly drop. Net natural increase is assumed to be slightly higher in the high scenario and slightly lower in the low scenario.

The middle scenario, which is the most likely, is based on continuation of existing conditions and trends. As seen in Table 7, the numeric population change gradually accelerates in Maricopa and Pima counties. Each decade sets a new record in both counties. In the balance of the state, the population gain does not increase further. These somewhat different results come mostly from differing age distributions by area.

The low scenario is meant to represent a reasonable possibility of slower growth, rather than the worst conditions that could be imagined. It results from a combination of assumptions regarding slightly less favorable conditions in Arizona. The relative difference from the middle scenario grows over time as uncertainty increases with the number of years into the future.

The high scenario should be considered to have a lesser likelihood than the low scenario. Like the low scenario, it is based on small adjustments to a number of assumptions and represents a possible rather than extreme set of conditions. Compared to the middle scenario on a percentage basis, there is a slight bias to the high scenario in Pima County. Considerably faster growth in the Tucson area is seen as more likely than in the Phoenix area, in part because of Pima County's relatively slow growth over the past 20 years.

Annual Projections

Maricopa County

The number of births in Maricopa County is expected to continue to rise (see Table 8A), mostly a result of substantial migration increasing the number of women of childbearing age. The increase from 56,000 in 2001 to 68,000 in 2010 and 80,000 in 2020, however, will not be as rapid as the 20,000 to 40,000 jump experienced between 1976 and 1990, when so many of the baby-boom generation were of childbearing age.

The number of deaths also will continue to rise steadily, and at a somewhat accelerating rate, due to the increased proportion of elderly in age brackets with high death rates. Net natural increase will continue to rise, but only at about half the pace of the last two decades.

Net migration has increased substantially in the current economic cycle. It is projected to hold steady for several years (apart from the economic cycle), then begin a slow decrease. This assumes that the much greater net migration rate of young adults will slow a little from the very high figures of recent years.

The total population change is projected to barely rise from the current trend figure of about 104,000 annually. Over the economic cycle, numeric population change might range from around 85,000 to 120,000. Percentage growth rates will continue to drop as the base increases, with rates likely to range from about 2 to 2.5 percent per year in the 2010 to 2020 decade.

Population growth in Maricopa County is expected to continue to be faster than that of the rest of the state. However, Maricopa's share of the state's population should not climb quite as fast as in the past, rising to less than 63 percent in 2020.

The change in population in Maricopa County generally should continue to account for between 65 and 70 percent of the state's total. The county's share of net migration should hold near 65 percent.

TABLE 7
POPULATION PROJECTIONS BY DECADE, THREE SCENARIOS
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.

Pima County

The number of births in Pima County rose a little in the last few years after being nearly unchanged for a decade. The number should continue to rise gradually. The increase of 4,000 through 2020 (see Table 8B) should be about equal to the gain over the last 20 years. Largely due to the older age distribution of its population, birth rates are lower, and death rates higher, than in Maricopa County. This is likely to continue given the expected continued large influx of young adults to Maricopa County.

Net migration currently is averaging around 13,000 per year. This figure has fluctuated over the last 25 years, with gains not equaling the strongest growth recorded in the early 1970s. Thus, a potential for faster growth exists in Pima County, accounting for a projected rise in the net number of migrants through 2020, compared to small declines in the rest of the state.

Total annual population change should rise from a trend figure of 18,000 currently to 21,000 in 2020, totally the result of increases in net migration. Annual changes might range from 16,000 to 23,000 over the economic cycle. Changes of this magnitude will cause Pima County's share of the state's population to fall further.

Balance of State

As in Pima County, the number of births in the balance of the state was nearly flat for a decade before increasing in the last two years. The projected increase in births (6,000) over the next 19 years (see Table 8C) should be greater than the rise over the last 20 years. The number of deaths, however, should rise as much, holding net natural increase steady as in Pima County.

Net migration jumped substantially in the current economic cycle, as in Maricopa County. It is expected to hold steady for several years before declining slowly.

The share of the state's annual population increase should fall slightly over the next 19 years as the numeric figure drops a little. Over the economic cycle the change might range from 26,000 to 35,000.

Arizona

The forecast (see Table 8D) is a summation of the three geographic areas. Annual population change should rise marginally from the current trend level of 155,000. Higher net natural increase should more than offset small declines in net migration.

TABLE 8A
POPULATION ESTIMATES AND PROJECTIONS: MARICOPA COUNTY
As of July 1, in Thousands, Middle Scenario

	Popu- lation	Change	Net Migration	Net Natural Increase	Births	Deaths	Popu- lation	Change	Net Migration
Estimates									
1991	2,227	58	34	24	40	16			
1992	2,287	60	37	23	40	17			
1993	2,355	68	45	23	40	17			
1994	2,444	89	67	22	41	19			
1995	2,551	107	83	24	43	19			
1996	2,664	113	88	25	45	20			
1997	2,779	115	89	26	47	21			
1998	2,890	111	84	27	48	21			
1999	2,995	105	76	29	51	22			
2000	3,097	102	72	30	54	24			
2001	3,196	99	66	33	56	23			
Projections									
			<i>Trend Forecast</i>				<i>Cyclical Forecast</i>		
2002	3,300	104	70	34	58	24	3,290	94	60
2003	3,404	104	70	34	59	25	3,376	86	52
2004	3,509	105	70	35	60	25	3,476	100	65
2005	3,614	105	70	35	61	26	3,591	115	80
2006	3,720	106	70	36	63	27	3,712	121	85
2007	3,826	106	70	36	64	28	3,828	116	80
2008	3,932	106	69	37	65	28	3,940	112	75
2009	4,038	106	69	37	66	29	4,047	107	70
2010	4,145	107	69	38	68	30	4,145	98	60
2011	4,252	107	68	39	69	30	4,239	94	55
2012	4,359	107	68	39	70	31	4,333	94	55
2013	4,465	106	67	39	71	32	4,437	104	65
2014	4,572	107	67	40	72	32	4,552	115	75
2015	4,678	106	66	40	73	33	4,672	120	80
2016	4,785	107	66	41	75	34	4,793	121	80
2017	4,891	106	65	41	76	35	4,909	116	75
2018	4,997	106	64	42	77	35	5,021	112	70
2019	5,103	106	64	42	78	36	5,123	102	60
2020	5,210	107	64	43	80	37	5,210	87	44

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

TABLE 8B
POPULATION ESTIMATES AND PROJECTIONS: PIMA COUNTY
As of July 1, in Thousands, Middle Scenario

	Popu- lation	Change	Net Migration	Net Natural Increase	Births	Deaths	Popu- lation	Change	Net Migration
Estimates									
1991	693	13	8	5	11	6			
1992	709	16	10	6	11	5			
1993	726	17	12	5	11	6			
1994	746	20	15	5	11	6			
1995	766	20	16	4	11	7			
1996	785	19	14	5	11	6			
1997	800	15	11	4	11	7			
1998	815	15	11	4	11	7			
1999	832	17	12	5	12	7			
2000	848	16	11	5	12	7			
2001	869	21	15	6	13	7			
Projections									
			<i>Trend Forecast</i>				<i>Cyclical Forecast</i>		
2002	887	18	13	5	13	8	886	17	12
2003	905	18	13	5	13	8	902	16	11
2004	923	18	13	5	13	8	920	18	13
2005	942	19	14	5	13	8	940	20	15
2006	961	19	14	5	14	9	962	22	17
2007	980	19	14	5	14	9	983	21	16
2008	999	19	14	5	14	9	1,003	20	15
2009	1,018	19	14	5	15	10	1,022	19	14
2010	1,037	19	14	5	15	10	1,040	18	13
2011	1,056	19	14	5	15	10	1,056	16	11
2012	1,076	20	15	5	16	11	1,073	17	12
2013	1,096	20	15	5	16	11	1,093	20	15
2014	1,116	20	15	5	16	11	1,115	22	17
2015	1,136	20	15	5	16	11	1,138	23	18
2016	1,156	20	15	5	16	11	1,161	23	18
2017	1,177	21	16	5	17	12	1,183	22	17
2018	1,198	21	16	5	17	12	1,204	21	16
2019	1,219	21	16	5	17	12	1,223	19	14
2020	1,240	21	16	5	17	12	1,240	17	12

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

TABLE 8C
POPULATION ESTIMATES AND PROJECTIONS: BALANCE OF STATE
As of July 1, in Thousands, Middle Scenario

	Popu- lation	Change	Net Migration	Net Natural Increase	Births	Deaths	Popu- lation	Change	Net Migration
Estimates									
1991	927	29	20	9	16	7			
1992	959	32	22	10	17	7			
1993	991	32	23	9	17	8			
1994	1,024	33	24	9	17	8			
1995	1,062	38	29	9	17	8			
1996	1,096	34	27	7	17	10			
1997	1,128	32	24	8	17	9			
1998	1,159	31	24	7	17	10			
1999	1,191	32	25	7	17	10			
2000	1,224	33	26	7	17	10			
2001	1,259	35	27	8	18	10			
Projections									
			<i>Trend Forecast</i>				<i>Cyclical Forecast</i>		
2002	1,292	33	25	8	18	10	1,293	34	26
2003	1,325	33	25	8	18	10	1,323	30	22
2004	1,358	33	25	8	18	10	1,355	32	24
2005	1,391	33	25	8	19	11	1,390	35	27
2006	1,424	33	25	8	19	11	1,426	36	28
2007	1,457	33	25	8	19	11	1,461	35	27
2008	1,489	32	24	8	20	12	1,493	32	24
2009	1,521	32	24	8	20	12	1,523	30	22
2010	1,553	32	24	8	21	13	1,550	27	19
2011	1,585	32	24	8	21	13	1,576	26	18
2012	1,616	31	23	8	21	13	1,605	29	21
2013	1,647	31	23	8	22	14	1,636	31	23
2014	1,678	31	23	8	22	14	1,669	33	25
2015	1,709	31	23	8	23	15	1,704	35	27
2016	1,739	30	22	8	23	15	1,737	33	25
2017	1,769	30	22	8	23	15	1,769	32	24
2018	1,798	29	22	7	23	16	1,799	30	23
2019	1,826	28	21	7	23	16	1,827	28	21
2020	1,855	29	21	8	24	16	1,855	28	20

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

TABLE 8D
POPULATION ESTIMATES AND PROJECTIONS: ARIZONA
As of July 1, in Thousands, Middle Scenario

	Popu- lation	Change	Net Migration	Net Natural Increase	Births	Deaths	Popu- lation	Change	Net Migration
Estimates									
1991	3,847	101	62	39	67	28			
1992	3,955	108	69	39	68	29			
1993	4,072	117	80	37	68	31			
1994	4,214	142	106	36	69	33			
1995	4,379	165	128	37	71	34			
1996	4,545	166	129	37	73	36			
1997	4,707	162	124	38	75	37			
1998	4,864	157	119	38	76	38			
1999	5,018	154	113	41	80	39			
2000	5,169	151	109	42	83	41			
2001	5,324	155	108	47	87	40			
Projections									
			<i>Trend Forecast</i>				<i>Cyclical Forecast</i>		
2002	5,479	155	108	47	89	42	5,469	145	98
2003	5,634	155	108	47	90	43	5,601	132	85
2004	5,790	156	108	48	91	43	5,751	150	102
2005	5,947	157	109	48	93	45	5,921	170	122
2006	6,105	158	109	49	96	47	6,100	179	130
2007	6,263	158	109	49	97	48	6,272	172	123
2008	6,420	157	107	50	99	49	6,436	164	114
2009	6,577	157	107	50	101	51	6,592	156	106
2010	6,735	158	107	51	104	53	6,735	143	92
2011	6,893	158	106	52	105	53	6,871	136	84
2012	7,051	158	106	52	107	55	7,011	140	88
2013	7,208	157	105	52	109	57	7,166	155	103
2014	7,366	158	105	53	110	57	7,336	170	117
2015	7,523	157	104	53	112	59	7,514	178	125
2016	7,680	157	103	54	114	60	7,691	177	123
2017	7,837	157	103	54	116	62	7,861	170	116
2018	7,993	156	102	54	117	63	8,024	163	109
2019	8,148	155	101	54	118	64	8,173	149	95
2020	8,305	157	101	56	121	65	8,305	132	76

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

METHODOLOGY

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 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 in-migration 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 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 annual 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. Thus, net migration for the current quarter can be estimated from the employment change that occurred three or four quarters earlier.

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.

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.

Quarterly estimates of each component of HUM are shown in Table 9.

**TABLE 9A
POPULATION ESTIMATES DETAIL: MARICOPA COUNTY**

	Housing Units	Occupancy Rate	Occupied Units	Persons per Household	Household Population	Group Quarters	Total Population	Change in Population	Net Natural Increase	Net Migration
1990 1	958,100	0.8556	819,718	2.5865	2,120,200	33,800	2,154,000			
1990 2	961,206	0.8578	824,523	2.5890	2,134,689	34,100	2,168,800	14,800	6,200	8,600
1990 3	964,432	0.8595	828,929	2.5925	2,148,999	34,400	2,183,400	14,600	6,200	8,400
1990 4	968,224	0.8610	833,641	2.5960	2,164,132	34,700	2,198,800	15,400	6,100	9,300
1991 1	971,068	0.8625	837,547	2.6000	2,177,621	34,900	2,212,500	13,700	6,100	7,600
1991 2	973,937	0.8645	841,969	2.6030	2,191,644	35,200	2,226,800	14,300	5,900	8,400
1991 3	977,478	0.8665	846,984	2.6050	2,206,394	35,500	2,241,900	15,100	6,000	9,100
1991 4	981,315	0.8685	852,272	2.6060	2,221,020	35,800	2,256,800	14,900	5,900	9,000
1992 1	984,905	0.8710	857,853	2.6065	2,235,993	36,000	2,272,000	15,200	6,100	9,100
1992 2	989,117	0.8730	863,499	2.6070	2,251,143	36,300	2,287,400	15,400	6,000	9,400
1992 3	993,923	0.8750	869,682	2.6075	2,267,696	36,600	2,304,300	16,900	5,400	11,500
1992 4	998,980	0.8770	876,105	2.6080	2,284,882	36,900	2,321,800	17,500	5,500	12,000
1993 1	1,003,524	0.8790	882,098	2.6085	2,300,952	37,100	2,338,100	16,300	5,600	10,700
1993 2	1,008,739	0.8805	888,195	2.6090	2,317,300	37,400	2,354,700	16,600	5,400	11,200
1993 3	1,014,334	0.8830	895,657	2.6095	2,337,216	37,700	2,374,900	20,200	5,500	14,700
1993 4	1,020,031	0.8855	903,238	2.6100	2,357,450	38,000	2,395,500	20,600	5,600	15,000
1994 1	1,026,204	0.8885	911,783	2.6105	2,380,208	38,200	2,418,400	22,900	5,700	17,200
1994 2	1,033,394	0.8915	921,270	2.6110	2,405,437	38,500	2,443,900	25,500	5,900	19,600
1994 3	1,040,261	0.8945	930,514	2.6120	2,430,502	38,800	2,469,300	25,400	5,900	19,500
1994 4	1,047,558	0.8975	940,184	2.6130	2,456,700	39,000	2,495,700	26,400	5,800	20,600
1995 1	1,054,442	0.9010	950,052	2.6145	2,483,912	39,200	2,523,100	27,400	6,600	20,800
1995 2	1,061,841	0.9040	959,905	2.6160	2,511,110	39,500	2,550,600	27,500	5,600	21,900
1995 3	1,069,107	0.9060	968,611	2.6175	2,535,339	39,800	2,575,100	24,500	6,300	18,200
1995 4	1,078,802	0.9070	978,473	2.6205	2,564,090	40,100	2,604,200	29,100	6,200	22,900
1996 1	1,088,426	0.9080	988,291	2.6240	2,593,275	40,300	2,633,600	29,400	6,400	23,000
1996 2	1,098,630	0.9090	998,655	2.6270	2,623,466	40,600	2,664,100	30,500	6,500	24,000
1996 3	1,108,138	0.9100	1,008,406	2.6300	2,652,106	40,900	2,693,000	28,900	6,500	22,400
1996 4	1,118,055	0.9110	1,018,548	2.6330	2,681,838	41,200	2,723,000	30,000	6,700	23,300

TABLE 9A (continued)
POPULATION ESTIMATES DETAIL: MARICOPA COUNTY

	Housing Units	Occupancy Rate	Occupied Units	Persons per Household	Household Population	Group Quarters	Total Population	Change in Population	Net Natural Increase	Net Migration
1997 1	1,127,353	0.9120	1,028,146	2.6360	2,710,194	41,400	2,751,600	28,600	6,300	22,300
1997 2	1,136,193	0.9130	1,037,344	2.6391	2,737,654	41,700	2,779,400	27,800	7,000	20,800
1997 3	1,145,039	0.9140	1,046,566	2.6421	2,765,131	42,000	2,807,100	27,700	6,800	20,900
1997 4	1,153,673	0.9150	1,055,611	2.6451	2,792,197	42,300	2,834,500	27,400	6,700	20,700
1998 1	1,162,332	0.9160	1,064,696	2.6481	2,819,422	42,500	2,861,900	27,400	7,000	20,400
1998 2	1,172,574	0.9160	1,074,078	2.6512	2,847,596	42,800	2,890,400	28,500	6,900	21,600
1998 3	1,182,868	0.9150	1,082,324	2.6542	2,872,705	43,100	2,915,800	25,400	7,000	18,400
1998 4	1,193,554	0.9140	1,090,908	2.6572	2,898,761	43,400	2,942,200	26,400	7,400	19,000
1999 1	1,204,474	0.9130	1,099,685	2.6602	2,925,381	43,600	2,969,000	26,800	7,300	19,500
1999 2	1,215,608	0.9115	1,108,026	2.6633	2,951,006	43,900	2,994,900	25,900	7,300	18,600
1999 3	1,226,963	0.9100	1,116,537	2.6663	2,977,021	44,200	3,021,200	26,300	7,200	19,100
1999 4	1,238,936	0.9080	1,124,954	2.6693	3,002,840	44,500	3,047,300	26,100	7,300	18,800
2000 1	1,250,231	0.9061	1,132,834	2.6723	3,027,273	44,800	3,072,100	24,800	8,300	16,500
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

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

**TABLE 9B
POPULATION ESTIMATES DETAIL: PIMA COUNTY**

	Housing Units	Occupancy Rate	Occupied Units	Persons per Household	Household Population	Group Quarters	Total Population	Change in Population	Net Natural Increase	Net Migration
1990 1	300,500	0.8846	265,817	2.4878	661,300	15,800	677,100			
1990 2	301,295	0.8857	266,857	2.4880	663,940	16,000	679,900	2,800	1,500	1,300
1990 3	302,285	0.8870	268,127	2.4885	667,234	16,200	683,400	3,500	1,500	2,000
1990 4	303,033	0.8885	269,245	2.4895	670,286	16,400	686,700	3,300	1,500	1,800
1991 1	303,798	0.8903	270,471	2.4900	673,473	16,600	690,100	3,400	1,400	2,000
1991 2	304,346	0.8925	271,629	2.4900	676,355	16,800	693,200	3,100	1,400	1,700
1991 3	305,235	0.8950	273,185	2.4895	680,095	17,000	697,100	3,900	1,400	2,500
1991 4	306,138	0.8975	274,759	2.4885	683,738	17,200	700,900	3,800	1,400	2,400
1992 1	307,053	0.9000	276,348	2.4875	687,414	17,400	704,800	3,900	1,500	2,400
1992 2	308,010	0.9025	277,979	2.4860	691,055	17,600	708,700	3,900	1,400	2,500
1992 3	309,112	0.9055	279,901	2.4840	695,274	17,900	713,200	4,500	1,300	3,200
1992 4	310,176	0.9085	281,795	2.4820	699,416	18,100	717,500	4,300	1,300	3,000
1993 1	311,205	0.9115	283,663	2.4800	703,485	18,300	721,800	4,300	1,300	3,000
1993 2	312,412	0.9140	285,544	2.4780	707,579	18,500	726,100	4,300	1,200	3,100
1993 3	313,483	0.9167	287,369	2.4760	711,527	18,700	730,200	4,100	1,200	2,900
1993 4	314,949	0.9190	289,438	2.4740	716,070	18,900	735,000	4,800	1,200	3,600
1994 1	316,655	0.9210	291,639	2.4720	720,932	19,100	740,000	5,000	1,100	3,900
1994 2	318,545	0.9230	294,017	2.4700	726,221	19,300	745,500	5,500	1,200	4,300
1994 3	320,104	0.9250	296,096	2.4680	730,764	19,500	750,300	4,800	1,200	3,600
1994 4	322,485	0.9252	298,363	2.4660	735,762	19,700	755,500	5,200	1,200	4,000
1995 1	324,290	0.9260	300,293	2.4650	740,222	19,900	760,100	4,600	1,200	3,400
1995 2	326,971	0.9260	302,776	2.4644	746,160	20,100	766,300	6,200	1,000	5,200
1995 3	329,713	0.9257	305,216	2.4645	752,204	20,300	772,500	6,200	1,100	5,100
1995 4	331,439	0.9255	306,747	2.4647	756,039	20,500	776,500	4,000	1,100	2,900
1996 1	333,650	0.9240	308,293	2.4651	759,973	20,600	780,600	4,100	1,100	3,000
1996 2	335,670	0.9230	309,823	2.4656	763,901	20,700	784,600	4,000	1,100	2,900
1996 3	338,448	0.9210	311,711	2.4660	768,679	20,800	789,500	4,900	1,100	3,800
1996 4	340,556	0.9195	313,141	2.4665	772,362	20,900	793,300	3,800	1,100	2,700

TABLE 9B (continued)
POPULATION ESTIMATES DETAIL: PIMA COUNTY

	Housing Units	Occupancy Rate	Occupied Units	Persons per Household	Household Population	Group Quarters	Total Population	Change in Population	Net Natural Increase	Net Migration
1997 1	342,339	0.9185	314,439	2.4669	775,689	21,000	796,700	3,400	1,100	2,300
1997 2	344,071	0.9170	315,513	2.4674	778,497	21,100	799,600	2,900	1,100	1,800
1997 3	345,750	0.9160	316,707	2.4678	781,570	21,200	802,800	3,200	1,100	2,100
1997 4	347,631	0.9150	318,082	2.4683	785,122	21,300	806,400	3,600	1,100	2,500
1998 1	349,348	0.9147	319,548	2.4687	788,869	21,400	810,300	3,900	1,100	2,800
1998 2	351,452	0.9140	321,227	2.4692	793,174	21,500	814,700	4,400	1,000	3,400
1998 3	353,328	0.9137	322,836	2.4696	797,275	21,600	818,900	4,200	1,100	3,100
1998 4	355,646	0.9127	324,599	2.4701	801,791	21,700	823,500	4,600	1,200	3,400
1999 1	357,613	0.9120	326,143	2.4705	805,737	21,800	827,500	4,000	1,000	3,000
1999 2	359,581	0.9115	327,758	2.4710	809,890	21,800	831,700	4,200	1,300	2,900
1999 3	361,541	0.9105	329,184	2.4714	813,544	21,900	835,400	3,700	1,300	2,400
1999 4	364,663	0.9080	331,114	2.4719	818,481	22,000	840,500	5,100	1,000	4,100
2000 1	366,737	0.9062	332,337	2.4724	821,670	22,000	843,700	3,200	1,300	1,900
2000 2	368,966	0.9050	333,914	2.4728	825,703	22,100	847,800	4,100	1,300	2,800
2000 3	371,127	0.9050	335,870	2.4732	830,674	22,200	852,900	5,100	1,300	3,800
2000 4	373,163	0.9050	337,712	2.4737	835,399	22,300	857,700	4,800	1,200	3,600
2001 1	375,640	0.9050	339,955	2.4741	841,082	22,400	863,500	5,800	1,500	4,300
2001 2	377,817	0.9050	341,925	2.4746	846,127	22,400	868,500	5,000	1,500	3,500
2001 3	380,125	0.9045	343,823	2.4750	850,963	22,500	873,500	5,000	1,400	3,600

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

**TABLE 9C
POPULATION ESTIMATES DETAIL: BALANCE OF STATE**

	Housing Units	Occupancy Rate	Occupied Units	Persons per Household	Household Population	Group Quarters	Total Population	Change in Population	Net Natural Increase	Net Migration
1990 1	411,400	0.7389	304,004	2.8197	857,200	32,200	889,400			
1990 2	415,151	0.7400	307,212	2.8170	865,415	32,500	897,900	8,500	2,400	6,100
1990 3	418,748	0.7405	310,083	2.8150	872,884	32,800	905,700	7,800	2,400	5,400
1990 4	422,403	0.7410	313,000	2.8130	880,470	33,100	913,600	7,900	2,400	5,500
1991 1	425,911	0.7415	315,813	2.8105	887,592	33,400	921,000	7,400	2,400	5,000
1991 2	428,620	0.7425	318,251	2.8080	893,648	33,600	927,200	6,200	2,400	3,800
1991 3	431,522	0.7440	321,053	2.8050	900,553	33,900	934,500	7,300	2,400	4,900
1991 4	434,976	0.7460	324,492	2.8010	908,903	34,200	943,100	8,600	2,400	6,200
1992 1	437,964	0.7485	327,816	2.7960	916,575	34,500	951,100	8,000	2,400	5,600
1992 2	440,748	0.7515	331,222	2.7910	924,441	34,700	959,100	8,000	2,400	5,600
1992 3	444,095	0.7535	334,625	2.7860	932,266	35,000	967,300	8,200	2,200	6,000
1992 4	447,575	0.7555	338,143	2.7810	940,376	35,300	975,700	8,400	2,200	6,200
1993 1	450,912	0.7570	341,341	2.7760	947,561	35,600	983,200	7,500	2,200	5,300
1993 2	454,673	0.7585	344,869	2.7710	955,633	35,800	991,400	8,200	2,200	6,000
1993 3	457,711	0.7610	348,318	2.7660	963,448	36,100	999,500	8,100	2,200	5,900
1993 4	461,460	0.7625	351,863	2.7610	971,494	36,400	1,007,900	8,400	2,200	6,200
1994 1	465,141	0.7640	355,367	2.7560	979,393	36,700	1,016,100	8,200	2,100	6,100
1994 2	468,788	0.7655	358,857	2.7510	987,217	36,900	1,024,100	8,000	2,100	5,900
1994 3	473,058	0.7670	362,836	2.7465	996,528	37,200	1,033,700	9,600	2,100	7,500
1994 4	477,771	0.7680	366,928	2.7420	1,006,118	37,500	1,043,600	9,900	2,100	7,800
1995 1	482,195	0.7690	370,808	2.7380	1,015,273	37,800	1,053,100	9,500	2,100	7,400
1995 2	486,237	0.7700	374,403	2.7340	1,023,616	38,000	1,061,600	8,500	1,800	6,700
1995 3	489,951	0.7710	377,752	2.7315	1,031,830	38,300	1,070,100	8,500	2,000	6,500
1995 4	493,527	0.7720	381,003	2.7290	1,039,757	38,500	1,078,300	8,200	1,900	6,300
1996 1	497,287	0.7730	384,403	2.7265	1,048,075	38,800	1,086,900	8,600	2,000	6,600
1996 2	501,308	0.7740	388,012	2.7240	1,056,946	39,000	1,095,900	9,000	1,900	7,100
1996 3	505,469	0.7740	391,233	2.7215	1,064,741	39,300	1,104,000	8,100	2,000	6,100
1996 4	509,905	0.7735	394,411	2.7190	1,072,405	39,600	1,112,000	8,000	2,000	6,000

TABLE 9C (continued)
POPULATION ESTIMATES DETAIL: BALANCE OF STATE

	Housing Units	Occupancy Rate	Occupied Units	Persons per Household	Household Population	Group Quarters	Total Population	Change in Population	Net Natural Increase	Net Migration
1997 1	514,491	0.7730	397,701	2.7165	1,080,356	39,900	1,120,300	8,300	1,700	6,600
1997 2	518,333	0.7730	400,672	2.7140	1,087,423	40,100	1,127,500	7,200	1,900	5,300
1997 3	522,415	0.7725	403,566	2.7115	1,094,268	40,400	1,134,700	7,200	1,800	5,400
1997 4	527,086	0.7720	406,910	2.7090	1,102,319	40,700	1,143,000	8,300	1,800	6,500
1998 1	531,447	0.7715	410,011	2.7065	1,109,696	41,000	1,150,700	7,700	1,700	6,000
1998 2	536,014	0.7710	413,267	2.7040	1,117,474	41,200	1,158,700	8,000	1,600	6,400
1998 3	540,555	0.7700	416,227	2.7015	1,124,438	41,500	1,165,900	7,200	1,700	5,500
1998 4	545,755	0.7690	419,686	2.6990	1,132,732	41,800	1,174,500	8,600	1,800	6,800
1999 1	551,199	0.7675	423,046	2.6965	1,140,742	42,100	1,182,800	8,300	1,600	6,700
1999 2	556,093	0.7665	426,245	2.6940	1,148,305	42,300	1,190,600	7,800	1,800	6,000
1999 3	561,442	0.7650	429,503	2.6915	1,156,007	42,600	1,198,600	8,000	1,900	6,100
1999 4	567,096	0.7635	432,978	2.6890	1,164,277	42,800	1,207,100	8,500	1,700	6,800
2000 1	572,221	0.7621	436,091	2.6868	1,171,704	43,000	1,214,700	7,600	1,800	5,800
2000 2	577,698	0.7615	439,917	2.6840	1,180,737	43,300	1,224,000	9,300	1,900	7,400
2000 3	582,860	0.7610	443,556	2.6815	1,189,396	43,600	1,233,000	9,000	2,100	6,900
2000 4	587,777	0.7605	447,005	2.6790	1,197,525	43,900	1,241,400	8,400	1,800	6,600
2001 1	592,567	0.7605	450,647	2.6765	1,206,158	44,200	1,250,400	9,000	1,900	7,100
2001 2	597,286	0.7605	454,236	2.6740	1,214,626	44,400	1,259,000	8,600	2,100	6,500
2001 3	602,222	0.7605	457,990	2.6715	1,223,519	44,700	1,268,200	9,200	2,200	7,000

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

**TABLE 9D
POPULATION ESTIMATES DETAIL: ARIZONA**

	Housing Units	Occupancy Rate	Occupied Units	Persons per Household	Housing Population	Group Quarters	Total Population	Change in Population	Net Natural Increase	Net Migration
1990 1	1,670,000	0.8321	1,389,539	2.6186	3,638,700	81,800	3,720,500			
1990 2	1,677,652	0.8337	1,398,591	2.6198	3,664,044	82,600	3,746,600	26,100	10,100	16,000
1990 3	1,685,466	0.8349	1,407,140	2.6217	3,689,118	83,400	3,772,500	25,900	10,100	15,800
1990 4	1,693,660	0.8360	1,415,887	2.6237	3,714,888	84,200	3,799,100	26,600	10,000	16,600
1991 1	1,700,777	0.8372	1,423,831	2.6258	3,738,686	84,900	3,823,600	24,500	9,900	14,600
1991 2	1,706,903	0.8389	1,431,848	2.6271	3,761,647	85,600	3,847,200	23,600	9,700	13,900
1991 3	1,714,235	0.8407	1,441,222	2.6277	3,787,042	86,400	3,873,400	26,200	9,800	16,400
1991 4	1,722,429	0.8427	1,451,523	2.6274	3,813,662	87,200	3,900,900	27,500	9,700	17,800
1992 1	1,729,923	0.8451	1,462,016	2.6265	3,839,982	87,900	3,927,900	27,000	10,000	17,000
1992 2	1,737,875	0.8474	1,472,700	2.6255	3,866,639	88,600	3,955,200	27,300	9,800	17,500
1992 3	1,747,129	0.8495	1,484,208	2.6245	3,895,236	89,500	3,984,700	29,500	8,900	20,600
1992 4	1,756,731	0.8516	1,496,043	2.6234	3,924,673	90,300	4,015,000	30,300	9,000	21,300
1993 1	1,765,641	0.8536	1,507,102	2.6223	3,951,998	91,000	4,043,000	28,000	9,100	18,900
1993 2	1,775,823	0.8552	1,518,608	2.6212	3,980,511	91,700	4,072,200	29,200	8,800	20,400
1993 3	1,785,528	0.8576	1,531,344	2.6200	4,012,191	92,500	4,104,700	32,500	8,900	23,600
1993 4	1,796,440	0.8598	1,544,539	2.6189	4,045,015	93,300	4,138,300	33,600	9,000	24,600
1994 1	1,808,000	0.8622	1,558,789	2.6178	4,080,533	94,000	4,174,500	36,200	8,900	27,300
1994 2	1,820,726	0.8646	1,574,144	2.6166	4,118,875	94,700	4,213,600	39,100	9,200	29,900
1994 3	1,833,423	0.8669	1,589,445	2.6159	4,157,794	95,500	4,253,300	39,700	9,200	30,500
1994 4	1,847,814	0.8689	1,605,475	2.6152	4,198,580	96,200	4,294,800	41,500	9,100	32,400
1995 1	1,860,928	0.8712	1,621,154	2.6151	4,239,407	96,900	4,336,300	41,500	9,900	31,600
1995 2	1,875,050	0.8731	1,637,083	2.6149	4,280,887	97,600	4,378,500	42,200	8,400	33,800
1995 3	1,888,771	0.8744	1,651,579	2.6153	4,319,373	98,400	4,417,800	39,300	9,400	29,900
1995 4	1,903,768	0.8752	1,666,223	2.6166	4,359,885	99,100	4,459,000	41,200	9,200	32,000
1996 1	1,919,364	0.8758	1,680,987	2.6183	4,401,323	99,700	4,501,000	42,000	9,500	32,500
1996 2	1,935,608	0.8765	1,696,491	2.6197	4,444,312	100,300	4,544,600	43,600	9,500	34,100
1996 3	1,952,056	0.8767	1,711,350	2.6210	4,485,527	101,000	4,586,500	41,900	9,600	32,300
1996 4	1,968,516	0.8769	1,726,101	2.6224	4,526,605	101,700	4,628,300	41,800	9,800	32,000

TABLE 9D (continued)
POPULATION ESTIMATES DETAIL: ARIZONA

	Housing Units	Occupancy Rate	Occupied Units	Persons per Household	Housing Population	Group Quarters	Total Population	Change in Population	Net Natural Increase	Net Migration
1997 1	1,984,183	0.8771	1,740,286	2.6238	4,566,238	102,300	4,668,500	40,200	9,100	31,100
1997 2	1,998,597	0.8774	1,753,529	2.6253	4,603,574	102,900	4,706,500	38,000	10,000	28,000
1997 3	2,013,204	0.8776	1,766,839	2.6267	4,640,969	103,600	4,744,600	38,100	9,700	28,400
1997 4	2,028,390	0.8778	1,780,603	2.6281	4,679,639	104,300	4,783,900	39,300	9,600	29,700
1998 1	2,043,127	0.8782	1,794,256	2.6295	4,717,987	104,900	4,822,900	39,000	9,800	29,200
1998 2	2,060,040	0.8779	1,808,572	2.6309	4,758,244	105,500	4,863,700	40,800	9,500	31,300
1998 3	2,076,751	0.8770	1,821,387	2.6323	4,794,418	106,200	4,900,600	36,900	9,800	27,100
1998 4	2,094,955	0.8760	1,835,192	2.6337	4,833,284	106,900	4,940,200	39,600	10,400	29,200
1999 1	2,113,286	0.8749	1,848,873	2.6350	4,871,860	107,500	4,979,400	39,200	9,900	29,300
1999 2	2,131,282	0.8737	1,862,030	2.6365	4,909,201	108,000	5,017,200	37,800	10,400	27,400
1999 3	2,149,946	0.8722	1,875,223	2.6379	4,946,573	108,700	5,055,300	38,100	10,400	27,700
1999 4	2,170,695	0.8702	1,889,046	2.6392	4,985,598	109,300	5,094,900	39,600	10,000	29,600
2000 1	2,189,189	0.8685	1,901,262	2.6407	5,020,647	109,800	5,130,400	35,500	11,400	24,100
2000 2	2,207,243	0.8674	1,914,655	2.6420	5,058,601	110,400	5,169,000	38,600	11,100	27,500
2000 3	2,224,428	0.8667	1,927,905	2.6434	5,096,270	111,100	5,207,400	38,400	10,800	27,600
2000 4	2,240,783	0.8662	1,941,055	2.6448	5,133,645	111,800	5,245,400	38,000	11,300	26,700
2001 1	2,258,211	0.8657	1,954,830	2.6461	5,172,610	112,400	5,285,000	39,600	12,600	27,000
2001 2	2,274,480	0.8653	1,968,199	2.6474	5,210,606	112,900	5,323,500	38,500	12,000	26,500
2001 3	2,293,196	0.8641	1,981,577	2.6487	5,248,638	113,600	5,362,200	38,700	11,600	27,100

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

Projections

Projections are made separately for Maricopa County, Pima County, and the balance of the state. Arizona is the sum of these three regions. In-depth revisions to the projections are made only when new census results are available, as occurred in 2001. Additional data from the 2000 census will become available in 2002. Thus, further adjustment to the projections may occur. In addition, the projections will be extended to 2030. In other years, the projections are modified only slightly so that they are consistent with the estimates for the latest year.

Projections are made for births, deaths, and net migration. In each case, the latest figures adjusted for economic conditions form the starting point of the projection series. The trend forecast takes these figures forward by making any adjustments to assumptions – fertility rates will rise slightly, death rates will fall a little, migration rates generally will hold mostly steady. These various rates then are applied by age group. It is these differences and changes over time in the age distribution that cause most of the differences over time and between areas in the projections.

In addition to the trend forecast, a cyclical forecast is prepared to illustrate to how much in any given year net migration and total population change might vary from the trend. The timing of future economic cycles is impossible to predict. Very long cycles, as experienced in the current and previous cycle, are predicted to continue in the future.

COMPARISONS TO OTHER SOURCES

Other sources of annual (July 1) population estimates include the Arizona Department of Economic Security (DES), which produces estimates for the state and its counties and incorporated places each December, and the U.S. Bureau of the Census. The estimates for 2001 prepared by DES and shown in Table 10 are close to those of the CBR for each geographic area.

The Census Bureau releases estimates by state around the end of the year, followed by county estimates in March. Estimates by place are produced several months later. Thus, the Census Bureau has not yet released any estimates consistent with the 2000 census. They also have 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 as fewer young people were entering the workforce due to the lowered number of U.S. births during the 1970s.

DES also produces population projections for the state and its counties and incorporated places, extending 50 years into the future. DES will release projections consistent with the 2000 census early in 2002. The methodology used by DES is similar to that used by the CBR, but is more detailed in terms of both inputs and outputs, including projections by age and sex.

TABLE 10
COMPARISON OF POPULATION ESTIMATES AND PROJECTIONS
As of July 1, in Thousands

Estimates	<i>2001</i>	
	CBR	DES
Arizona	5,323.5	5,319.9
Maricopa County	3,196.0	3,192.1
Pima County	868.5	870.6
Balance of State	1,259.0	1,257.2

Note: No other estimates or projections tied to the 2000 census currently are available.

Sources: CBR: Center for Business Research, L. William Seidman Research Institute, College of Business, Arizona State University. DES: Arizona Department of Economic Security.

APPENDIX TABLE 1
ANNUAL PERCENT CHANGE IN POPULATION
As of July 1

Estimates	Arizona	Maricopa County	Pima County	Balance of State
1971	5.6%	4.7%	6.4%	6.8%
1972	5.9	5.8	7.1	5.0
1973	5.8	6.2	5.4	5.1
1974	4.6	5.2	3.7	4.2
1975	2.8	2.9	3.6	1.9
1976	2.6	2.0	2.6	3.9
1977	3.4	3.8	2.7	3.0
1978	3.7	4.3	3.1	3.0
1979	4.8	4.9	5.2	4.2
1980	3.9	4.7	2.5	3.4
1981	3.1	3.6	2.2	2.7
1982	2.7	3.0	2.5	2.1
1983	2.5	2.5	2.5	2.3
1984	3.3	3.8	2.7	2.5
1985	3.5	4.0	3.0	2.6
1986	3.7	4.3	3.1	2.9
1987	3.4	4.1	2.2	2.7
1988	2.8	3.3	1.5	2.8
1989	2.6	3.0	1.5	2.5
1990	2.5	2.7	1.6	2.6
1991	2.7	2.7	2.0	3.3
1992	2.8	2.7	2.2	3.4
1993	3.0	2.9	2.5	3.4
1994	3.5	3.8	2.7	3.3
1995	3.9	4.4	2.8	3.7
1996	3.8	4.4	2.4	3.2
1997	3.6	4.3	1.9	2.9
1998	3.3	4.0	1.9	2.8
1999	3.2	3.6	2.1	2.8
2000	3.0	3.4	1.9	2.8
2001	3.0	3.2	2.5	2.9
Projections: Cyclical Forecast of Middle Scenario				
2002	2.7	2.9	2.0	2.7
2003	2.4	2.6	1.9	2.3
2004	2.7	3.0	2.0	2.4
2005	3.0	3.3	2.2	2.6
2006	3.0	3.4	2.2	2.6
2007	2.8	3.1	2.2	2.5
2008	2.6	2.9	2.0	2.2
2009	2.4	2.7	1.9	2.0
2010	2.2	2.4	1.8	1.8

APPENDIX TABLE 1 (continued)
ANNUAL PERCENT CHANGE IN POPULATION
As of July 1

	Arizona	Maricopa County	Pima County	Balance of State
2011	2.0%	2.3%	1.6%	1.7%
2012	2.1	2.2	1.7	1.8
2013	2.2	2.4	1.9	1.9
2014	2.4	2.6	2.0	2.0
2015	2.4	2.6	2.0	2.1
2016	2.3	2.6	1.9	1.9
2017	2.2	2.4	1.9	1.8
2018	2.1	2.3	1.8	1.7
2019	1.9	2.0	1.6	1.6
2020	1.6	1.7	1.4	1.5

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

**APPENDIX TABLE 2
SHARE OF ARIZONA POPULATION**

Estimates	Maricopa County	Pima County	Balance Of State	Projections*	Maricopa County	Pima County	Balance Of State
1970	54.8%	19.6%	25.6%	2002	60.2%	16.2%	23.6%
1971	54.3	19.8	25.9	2003	60.3	16.1	23.6
1972	54.3	20.0	25.7	2004	60.4	16.0	23.6
1973	54.5	19.9	25.5	2005	60.6	15.9	23.5
1974	54.8	19.8	25.4	2006	60.9	15.8	23.4
1975	54.9	19.9	25.2	2007	61.0	15.7	23.3
1976	54.5	19.9	25.5	2008	61.2	15.6	23.2
1977	54.8	19.8	25.4	2009	61.4	15.5	23.1
1978	55.1	19.7	25.3	2010	61.5	15.4	23.0
1979	55.1	19.7	25.1	2011	61.7	15.4	22.9
1980	55.5	19.5	25.0	2012	61.8	15.3	22.9
1981	55.8	19.3	24.9	2013	61.9	15.3	22.8
1982	56.0	19.3	24.8	2014	62.0	15.2	22.7
1983	56.0	19.3	24.7	2015	62.2	15.2	22.7
1984	56.3	19.2	24.5	2016	62.3	15.1	22.6
1985	56.6	19.1	24.3	2017	62.4	15.0	22.5
1986	56.9	18.9	24.1	2018	62.6	15.0	22.4
1987	57.3	18.7	24.0	2019	62.7	15.0	22.4
1988	57.5	18.5	24.0	2020	62.7	14.9	22.3
1989	57.8	18.3	23.9				
1990	57.9	18.1	24.0				
1991	57.9	18.0	24.1				
1992	57.8	17.9	24.2				
1993	57.8	17.8	24.3				
1994	58.0	17.7	24.3				
1995	58.3	17.5	24.2				
1996	58.6	17.3	24.1				
1997	59.1	17.0	24.0				
1998	59.4	16.8	23.8				
1999	59.7	16.6	23.7				
2000	59.9	16.4	23.7				
2001	60.0	16.3	23.6				

* Cyclical Forecast of Middle Scenario

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

**APPENDIX TABLE 3
SHARE OF CHANGE IN ARIZONA POPULATION**

Estimates	<i>Total Population</i>			<i>Net Migration</i>		
	Maricopa County	Pima County	Balance of State	Maricopa County	Pima County	Balance of State
1971	46.1%	22.5%	31.4%	44.3%	24.1%	31.6%
1972	54.0	23.9	22.1	54.9	25.3	19.8
1973	58.5	18.6	22.9	59.8	19.6	20.6
1974	61.0	16.0	23.0	64.9	15.6	19.5
1975	57.1	25.4	17.5	62.5	30.0	7.5
1976	42.6	19.7	37.7	39.5	21.1	39.5
1977	61.7	16.0	22.2	68.4	15.8	15.8
1978	63.0	16.3	20.7	67.6	16.2	16.2
1979	56.6	21.3	22.1	57.9	23.2	18.9
1980	65.7	12.4	21.9	71.1	10.5	18.4
1981	64.4	13.8	21.8	71.9	12.3	15.8
1982	62.3	18.2	19.5	68.1	19.1	12.8
1983	57.5	19.2	23.3	61.9	21.4	16.7
1984	64.6	16.2	19.2	69.1	16.2	14.7
1985	65.1	16.5	18.3	69.7	17.1	13.2
1986	65.3	15.7	19.0	67.4	16.3	16.3
1987	68.7	12.2	19.1	72.2	10.1	17.7
1988	66.3	10.2	23.5	70.5	6.6	23.0
1989	66.3	10.9	22.8	69.8	7.5	22.6
1990	62.7	12.0	25.3	64.8	9.7	25.5
1991	57.7	13.2	29.1	55.3	12.3	32.3
1992	56.1	14.4	29.5	53.3	14.3	32.5
1993	57.5	14.9	27.6	55.9	15.1	28.9
1994	63.1	13.7	23.2	63.1	13.9	23.0
1995	64.7	12.6	22.7	64.5	12.6	22.8
1996	68.3	11.0	20.7	68.6	10.8	20.6
1997	71.2	9.3	19.5	72.0	8.6	19.4
1998	70.6	9.6	19.8	70.5	9.1	20.4
1999	68.1	11.1	20.8	66.8	11.0	22.2
2000	67.4	10.5	22.0	65.8	10.2	24.0
2001	63.9	13.5	22.6	60.7	14.2	25.1
Projections: Cyclical Forecast of Middle Scenario						
2002	64.6	12.0	23.4	61.2	12.2	26.5
2003	64.7	12.8	22.6	60.5	14.0	25.6
2004	66.7	12.0	21.3	63.7	12.7	23.5
2005	67.6	11.8	20.6	65.6	12.3	22.1
2006	68.0	11.8	20.2	65.9	12.4	21.7
2007	67.4	12.2	20.3	65.0	13.0	22.0
2008	68.3	12.2	19.5	65.8	13.2	21.1
2009	68.6	12.2	19.2	66.0	13.2	20.8
2010	68.5	12.6	18.9	65.2	14.1	20.7

APPENDIX TABLE 3 (continued)
SHARE OF CHANGE IN ARIZONA POPULATION

	<i>Total Population</i>			<i>Net Migration</i>		
	Maricopa County	Pima County	Balance of State	Maricopa County	Pima County	Balance of State
2011	68.6%	12.4%	19.0%	64.7%	14.1%	21.2%
2012	66.7	12.8	20.6	61.8	14.6	23.6
2013	67.1	12.9	20.0	63.1	14.6	22.3
2014	67.6	12.9	19.4	64.1	14.5	21.4
2015	67.8	12.4	19.8	64.5	13.7	21.8
2016	68.8	12.5	18.8	65.6	13.9	20.5
2017	68.2	12.9	18.8	64.7	14.7	20.7
2018	68.7	12.9	18.4	64.2	14.7	21.1
2019	68.5	12.8	18.8	63.2	14.7	22.1
2020	65.9	12.9	21.2	57.9	15.8	26.3
Annual Averages by Economic Cycle						
1961-70	64	19	17	79	21	0
1971-75	55	21	24	57	22	21
1976-82	60	17	23	64	17	19
1983-91	64	14	22	67	13	20
1992-2002	66	12	23	65	12	24
2003-11	68	12	20	65	13	22
2012-20	68	13	19	64	15	22

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

APPENDIX TABLE 4
MIGRATION AS A PERCENTAGE OF TOTAL POPULATION CHANGE

Estimates	Arizona	Maricopa County	Pima County	Balance of State
1971	77%	74%	83%	78%
1972	81	82	85	72
1973	82	84	86	74
1974	77	82	75	65
1975	63	69	75	27
1976	62	58	67	65
1977	70	78	69	50
1978	74	79	73	58
1979	78	80	85	67
1980	72	78	62	61
1981	66	73	58	47
1982	61	67	64	40
1983	58	62	64	41
1984	69	73	69	53
1985	70	75	72	50
1986	71	73	74	61
1987	69	72	57	64
1988	62	66	40	61
1989	58	61	40	57
1990	56	58	45	56
1991	61	58	56	67
1992	64	60	63	70
1993	69	67	71	73
1994	75	75	76	74
1995	78	78	78	78
1996	77	78	76	77
1997	76	77	71	76
1998	75	75	72	78
1999	74	72	73	78
2000	72	70	69	78
2001	70	66	74	77
Projections: Cyclical Forecast of Middle Scenario				
2002	67	64	69	76
2003	65	60	71	73
2004	68	65	72	75
2005	72	70	75	77
2006	72	70	76	78
2007	72	69	76	77
2008	70	67	75	75
2009	68	65	74	73
2010	64	61	72	70

APPENDIX TABLE 4 (continued)
MIGRATION AS A PERCENTAGE
OF TOTAL POPULATION CHANGE

	Arizona	Maricopa County	Pima County	Balance of State
2011	62%	59%	71%	69%
2012	63	59	72	72
2013	66	63	75	74
2014	69	65	77	76
2015	70	67	77	77
2016	69	66	77	76
2017	68	65	77	75
2018	67	63	76	77
2019	64	59	74	75
2020	58	51	71	71
Annual Averages by Economic Cycle				
1961-70	51	63	56	0
1971-75	77	80	82	69
1976-82	70	75	70	57
1983-91	64	67	60	58
1992-2002	73	72	72	76
2003-11	68	66	74	75
2012-20	66	62	75	75

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

APPENDIX TABLE 5A
ESTIMATES OF IN- AND OUT-MIGRATION: MARICOPA COUNTY
As of July 1, in Thousands

	<i>Migration</i>			Ratio of In to Out	Popu- lation*	<i>Percentage of Population*</i>		
	Net	In	Out			Net	In	Out
1981	41	129	88	1.46	1,547	2.7%	8.4%	5.7%
1982	32	121	89	1.36	1,603	2.0	7.5	5.5
1983	26	113	87	1.30	1,651	1.6	6.9	5.3
1984	47	133	86	1.55	1,693	2.8	7.8	5.1
1985	53	137	84	1.63	1,757	3.0	7.8	4.8
1986	58	148	90	1.64	1,828	3.2	8.1	4.9
1987	57	151	94	1.60	1,907	3.0	7.9	4.9
1988	43	144	101	1.42	1,986	2.2	7.3	5.1
1989	37	142	105	1.35	2,051	1.8	6.9	5.1
1990	33	143	110	1.30	2,112	1.6	6.8	5.2
1991	34	138	104	1.32	2,169	1.6	6.3	4.8
1992	37	138	101	1.36	2,227	1.6	6.2	4.6
1993	45	142	96	1.47	2,287	2.0	6.2	4.2
1994	67	157	91	1.73	2,355	2.8	6.7	3.9
1995	83	179	96	1.86	2,444	3.4	7.3	3.9
1996	88	185	97	1.91	2,551	3.5	7.2	3.8
1997	89	191	102	1.87	2,664	3.3	7.2	3.8
1998	84	190	106	1.79	2,779	3.0	6.8	3.8
1999	76	184	109	1.69	2,890	2.6	6.4	3.8
2000	72	186	114	1.63	2,995	2.4	6.2	3.8
2001	66	182	116	1.56	3,097	2.1	5.9	3.7

* Population as of beginning of year

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

APPENDIX TABLE 5B
ESTIMATES OF IN- AND OUT-MIGRATION: PIMA COUNTY
As of July 1, in Thousands

	<i>Migration</i>			Ratio of In to Out	Popu- lation*	<i>Percentage of Population*</i>		
	Net	In	Out			Net	In	Out
1981	7	41	34	1.20	542	1.3%	7.6%	6.3%
1982	9	44	35	1.25	554	1.6	8.0	6.4
1983	9	45	36	1.25	568	1.6	7.9	6.3
1984	11	49	38	1.29	582	1.9	8.3	6.5
1985	13	51	38	1.34	598	2.2	8.5	6.3
1986	14	47	33	1.42	616	2.3	7.6	5.4
1987	8	43	35	1.23	635	1.3	6.8	5.5
1988	4	38	34	1.12	649	0.6	5.8	5.2
1989	4	43	39	1.10	659	0.6	6.5	5.9
1990	5	45	40	1.12	669	0.7	6.7	6.0
1991	8	43	35	1.21	680	1.1	6.3	5.2
1992	10	41	32	1.31	693	1.4	6.0	4.6
1993	12	44	32	1.38	709	1.7	6.2	4.5
1994	15	47	32	1.46	726	2.0	6.4	4.4
1995	16	49	33	1.49	746	2.2	6.6	4.5
1996	14	49	35	1.40	766	1.8	6.4	4.5
1997	11	45	35	1.30	785	1.4	5.8	4.4
1998	11	45	34	1.31	800	1.4	5.7	4.3
1999	12	47	34	1.36	815	1.5	5.7	4.2
2000	11	46	35	1.31	832	1.3	5.6	4.2
2001	15	50	35	1.44	848	1.8	5.9	4.1

* Population as of beginning of year

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

APPENDIX TABLE 5C
ESTIMATES OF IN- AND OUT-MIGRATION: BALANCE OF STATE
As of July 1, in Thousands

	<i>Migration</i>			Ratio of In to Out	Popu- lation*	<i>Percentage of Population*</i>		
	Net	In	Out			Net	In	Out
1981	9	72	63	1.14	696	1.3%	10.3%	9.0%
1982	6	73	67	1.09	715	0.8	10.3	9.4
1983	7	68	61	1.11	730	1.0	9.3	8.3
1984	10	76	66	1.15	747	1.3	10.2	8.9
1985	10	75	65	1.15	766	1.3	9.8	8.5
1986	14	76	62	1.23	786	1.8	9.6	7.8
1987	14	76	62	1.23	809	1.7	9.4	7.6
1988	14	75	61	1.23	831	1.7	9.0	7.4
1989	12	79	67	1.18	854	1.4	9.2	7.8
1990	13	83	70	1.18	875	1.5	9.5	8.0
1991	20	87	67	1.29	898	2.2	9.7	7.5
1992	22	86	64	1.35	927	2.4	9.3	6.9
1993	24	88	64	1.37	959	2.5	9.1	6.7
1994	24	90	65	1.37	991	2.4	9.0	6.6
1995	29	95	66	1.44	1,024	2.9	9.3	6.4
1996	27	94	67	1.39	1,062	2.5	8.8	6.3
1997	24	89	65	1.37	1,096	2.2	8.1	5.9
1998	24	94	69	1.35	1,128	2.1	8.3	6.1
1999	25	92	67	1.37	1,159	2.2	8.0	5.8
2000	26	96	70	1.37	1,191	2.2	8.0	5.8
2001	27	97	70	1.39	1,224	2.2	7.9	5.7

* Population as of beginning of year

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

APPENDIX TABLE 5D
ESTIMATES OF IN- AND OUT-MIGRATION: ARIZONA
As of July 1, in Thousands

	<i>Migration</i>			Ratio of In to Out	Popu- lation*	<i>Percentage of Population*</i>		
	Net	In	Out			Net	In	Out
1981	57	202	145	1.39	2,785	2.0%	7.2%	5.2%
1982	47	195	148	1.32	2,872	1.6	6.8	5.1
1983	42	179	137	1.31	2,949	1.4	6.1	4.6
1984	68	210	142	1.48	3,022	2.3	6.9	4.7
1985	76	215	139	1.55	3,121	2.4	6.9	4.4
1986	86	225	139	1.62	3,230	2.7	7.0	4.3
1987	79	224	145	1.54	3,351	2.4	6.7	4.3
1988	61	212	151	1.40	3,466	1.8	6.1	4.4
1989	53	213	160	1.33	3,564	1.5	6.0	4.5
1990	51	216	165	1.31	3,656	1.4	5.9	4.5
1991	61	218	157	1.39	3,747	1.6	5.8	4.2
1992	69	219	150	1.46	3,847	1.8	5.7	3.9
1993	81	225	144	1.56	3,955	2.1	5.7	3.6
1994	105	245	140	1.75	4,072	2.6	6.0	3.4
1995	128	273	144	1.89	4,214	3.0	6.5	3.4
1996	129	276	147	1.87	4,379	2.9	6.3	3.4
1997	123	275	152	1.81	4,545	2.7	6.1	3.3
1998	119	277	159	1.75	4,707	2.5	5.9	3.4
1999	113	270	157	1.72	4,864	2.3	5.5	3.2
2000	109	272	163	1.67	5,017	2.2	5.4	3.2
2001	108	272	164	1.66	5,169	2.1	5.3	3.2

* Population as of beginning of year

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